

# **OIL ANALYSIS REPORT**

# Sample Rating Trend







Machine Id 834053 Component **Natural Gas Engine** 

PETRO CANADA DURON

# DIAGNOSIS

# Recommendation

Resample at the next service interval to monitor.

Metal levels are typical for a new component breaking in.

# Contamination

There is no indication of any contamination in the oil.

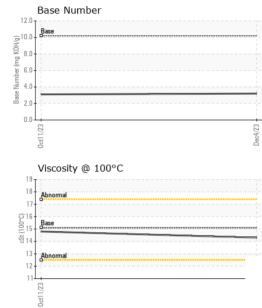
# **Fluid Condition**

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   imitibase   current   history1   history2							,
Cample Number   Client Info   CFL0099949   GFL0095142	GEO LD 15W40 (-	GAL)		0ct2023	Dec2023		
Client Info   Sample Date   Client Info   Sample Date   Prison   Client Info   Sample   Sample   Prison   Client Info   Sample Status   Not Changd   Client Info   Not Changd   Client Info   Not Changd   Client Info   Client Info   Not Changd   Client Info	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Cample Date   Client Info   599   310	Sample Number		Client Info		GFL0099949	GFL0095142	
Dil Age			Client Info		04 Dec 2023	11 Oct 2023	
Contamper   Cont	Machine Age	hrs	Client Info		599	310	
NORMAL   ABNORMAL	Oil Age	hrs	Client Info		0	0	
NORMAL   ABNORMAL	Oil Changed		Client Info		Not Changd	Not Changd	
Water         WC Method         >0.1         NEG         NEG            WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >50         66         14            Chromium         ppm         ASTM D5185m         >5         <1         2            Nickel         ppm         ASTM D5185m         >5         <1         <1            Silver         ppm         ASTM D5185m         >5         <1         <1            Aluminum         ppm         ASTM D5185m         >3         0         0            Aluminum         ppm         ASTM D5185m         >40         2         5            Lead         ppm         ASTM D5185m         >40         2         5            Copper         ppm         ASTM D5185m         >40         2         <1         -1            Copper         ppm         ASTM D5185m         >4         2         <1         -1            Copper         ppm         ASTM D5185m         >0					NORMAL	ABNORMAL	
Water         WC Method         >0.1         NEG         NEG            WEAR METALS         method         limit/base         current         history1         history2           ron         ppm         ASTM D5185m         >50         66         14            Chromium         ppm         ASTM D5185m         >5         <1         2            Nickel         ppm         ASTM D5185m         >5         <1         <1            Silver         ppm         ASTM D5185m         >3         0         0            Aluminum         ppm         ASTM D5185m         >3         0         0            Alead         ppm         ASTM D5185m         >40         2         5            Lead         ppm         ASTM D5185m         >40         2         5            Copper         ppm         ASTM D5185m         >4         2         <1            Cadedium         ppm         ASTM D5185m         0         6         7            Barrium         ppm         ASTM D5185m         50         6         7	CONTAMINAT	ION	method	limit/base	current	history1	history2
Chromium			WC Method	>0.1	NEG	NEG	
Description	WEAR METAL	.S	method	limit/base	current	history1	history2
ASTM D5185m   STM D5185m   ST			ΔSTM D5185m	>50	66		
Strickel   ppm   ASTM D5185m   >4   1   <1							
Silver						_	
Silver							
Aluminum							
Lead					-		
Copper					-		
Tin							
Vanadium         ppm         ASTM D5185m         <1         <1            Cadmium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         50         6         7            Barium         ppm         ASTM D5185m         5         0         0            Molybdenum         ppm         ASTM D5185m         50         54         59            Manganese         ppm         ASTM D5185m         50         54         59            Manganesium         ppm         ASTM D5185m         560         847         575            Magnesium         ppm         ASTM D5185m         560         847         575            Calcium         ppm         ASTM D5185m         780         751         711            Zinc         ppm         ASTM D5185m         870         965         942            Sulfur         ppm         ASTM D5185m         >204         2351         2303	• •				-		
ADDITIVES				>4			
ADDITIVES   method   limit/base   current   history1   history2							
Boron   ppm   ASTM D5185m   50   6   7	Cadmium	ppm	ASTM D5185m		0	0	
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         50         54         59            Manganese         ppm         ASTM D5185m         0         13         <1	Boron	ppm	ASTM D5185m	50	6	7	
Manganese         ppm         ASTM D5185m         0         13         <1            Magnesium         ppm         ASTM D5185m         560         847         575            Calcium         ppm         ASTM D5185m         1510         1308         1676            Phosphorus         ppm         ASTM D5185m         780         751         711            Zinc         ppm         ASTM D5185m         870         965         942            Sulfur         ppm         ASTM D5185m         2040         2351         2303            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         36         5            Godium         ppm         ASTM D5185m         >20         7         0            Potassium         ppm         ASTM D5185m         >20         7         0            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0	Barium	ppm	ASTM D5185m	5	0	0	
Magnesium         ppm         ASTM D5185m         560         847         575            Calcium         ppm         ASTM D5185m         1510         1308         1676            Phosphorus         ppm         ASTM D5185m         780         751         711            Zinc         ppm         ASTM D5185m         870         965         942            Sulfur         ppm         ASTM D5185m         2040         2351         2303            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         36         5            Sodium         ppm         ASTM D5185m         4         16            Potassium         ppm         ASTM D5185m         >20         7         0            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0         0            Sulfation         Abs/.1mm         *ASTM D7624         >20         12.5	Molybdenum	ppm	ASTM D5185m	50	54	59	
Calcium         ppm         ASTM D5185m         1510         1308         1676            Phosphorus         ppm         ASTM D5185m         780         751         711            Zinc         ppm         ASTM D5185m         870         965         942            Sulfur         ppm         ASTM D5185m         2040         2351         2303            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         36         5            Sodium         ppm         ASTM D5185m         >20         7         0            Potassium         ppm         ASTM D5185m         >20         7         0            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0         0            Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         24.3            FLUID DEGRADATION         method         limit/base         curre	Manganese	ppm	ASTM D5185m	0	13	<1	
Phosphorus         ppm         ASTM D5185m         780         751         711            Zinc         ppm         ASTM D5185m         870         965         942            Sulfur         ppm         ASTM D5185m         2040         2351         2303            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         36         5            Sodium         ppm         ASTM D5185m         4         16            Potassium         ppm         ASTM D5185m         >20         7         0            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0         0            Nitration         Abs/cm         *ASTM D7624         >20         12.5         11.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         24.3            FLUID DEGRADATION         method         limit/base         current	Magnesium	ppm	ASTM D5185m	560	847	575	
Soulfur	Calcium	ppm	ASTM D5185m	1510	1308	1676	
Sulfur         ppm         ASTM D5185m         2040         2351         2303            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         36         5            Sodium         ppm         ASTM D5185m         4         16            Potassium         ppm         ASTM D5185m         >20         7         0            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0         0            Nitration         Abs/cm         *ASTM D7624         >20         12.5         11.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         24.3            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         22.6         20.1	Phosphorus	ppm	ASTM D5185m	780	751	711	
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         36         5            Sodium         ppm         ASTM D5185m         4         16            Potassium         ppm         ASTM D5185m         >20         7         0            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0         0            Nitration         Abs/cm         *ASTM D7624         >20         12.5         11.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         24.3            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         22.6         20.1	Zinc	ppm	ASTM D5185m	870	965	942	
Solition   ppm   ASTM D5185m   >25   36   5	Sulfur	ppm	ASTM D5185m	2040	2351	2303	
Sodium   ppm   ASTM D5185m   4   16       Potassium   ppm   ASTM D5185m   >20   7   0       INFRA-RED   method   limit/base   current   history1   history2     Soot %   *ASTM D7844   0   0   0       Nitration   Abs/cm   *ASTM D7624   >20   12.5   11.3       Sulfation   Abs/.1mm   *ASTM D7415   >30   24.0   24.3       FLUID DEGRADATION   method   limit/base   current   history1   history2     Oxidation   Abs/.1mm   *ASTM D7414   >25   22.6   20.1	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         7         0            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0         0            Nitration         Abs/cm         *ASTM D7624         >20         12.5         11.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         24.3            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         22.6         20.1	Silicon	ppm	ASTM D5185m	>25	36	5	
Potassium         ppm         ASTM D5185m         >20         7         0            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0         0            Nitration         Abs/cm         *ASTM D7624         >20         12.5         11.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         24.3            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         22.6         20.1	Sodium	ppm	ASTM D5185m		4	16	
Soot %         %         *ASTM D7844         0         0            Nitration         Abs/cm         *ASTM D7624         >20         12.5         11.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         24.3            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         22.6         20.1	Potassium	ppm	ASTM D5185m	>20	7	0	
Nitration         Abs/cm         *ASTM D7624         >20         12.5         11.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         24.3            FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         22.6         20.1	INFRA-RED		method	limit/base	current	history1	history2
Nitration         Abs/cm         *ASTM D7624         >20         12.5         11.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         24.3            FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         22.6         20.1	Soot %	%	*ASTM D7844		0	0	
Sulfation         Abs/.1mm         *ASTM D7415         >30         24.0         24.3            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         22.6         20.1				>20			
Oxidation							
	FLUID DEGRA	OITAC	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	22.6	20.1	
	Base Number (BN)	mg KOH/g	ASTM D2896	10.2	3.2	▲ 3.1	



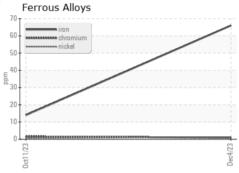
# **OIL ANALYSIS REPORT**

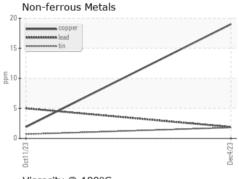


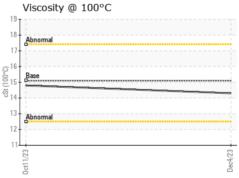
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance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

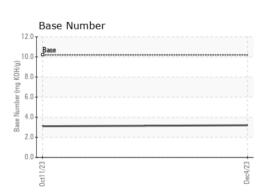
FLUID PROPI	ERITES	method	limit/base		history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.3	14.8	

# **GRAPHS**













Laboratory Sample No.

Lab Number Unique Number : 10777351 Test Package : FLEET

: GFL0099949 : 06027560

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 07 Dec 2023 Diagnosed : 08 Dec 2023

Diagnostician : Wes Davis

GFL Environmental - 836 - Kansas City Hauling 7801 East Truman Road Kansas City, MO

US 64126 Contact: Robert Hart rhart@gflenv.com T: (580)461-1509

Certificate L2367 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)