

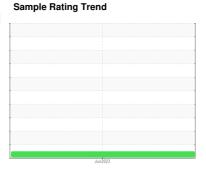
# **OIL ANALYSIS REPORT**

# NORMAL



Machine Id **913057** Component **Diesel Engine** 

PETRO CANADA DURON SHP 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

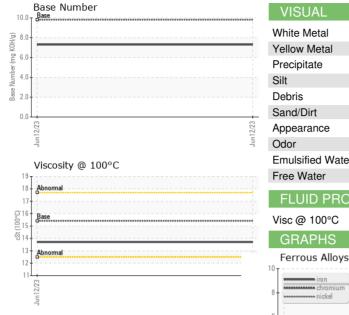
## **Fluid Condition**

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   GFL0069827   Sample Date   Client Info   12 Jun 2023   Sample Date   Client Info   1968   Sample Date   Client Info   1968   Sample Date   Sample Date   Client Info   600   Sample Status   Sample Status   NORMAL   Sample Status   Sample Status   Sample Status   NORMAL   Sample Status	N 3HP 13W4U (-	GAL)			Jun2023		
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   1968	Sample Number		Client Info		GFL0069827		
Oil Age	Sample Date		Client Info		12 Jun 2023		
Oil Age	Machine Age	hrs	Client Info		1968		
Contact   Cont	Oil Age	hrs	Client Info		600		
CONTAMINATION   method   imit/base   current   history1   history2	-		Client Info		Changed		
WEAR METALS	Sample Status				_		
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0		
Chromium	Glycol		WC Method		NEG		
Chromium	WEAR METAL	_S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	9		
Titanium	Chromium	ppm	ASTM D5185m	>20	<1		
Silver	Nickel	ppm	ASTM D5185m	>5	<1		
Aluminum	Titanium	ppm	ASTM D5185m	>2	0		
Aluminum	Silver	ppm	ASTM D5185m	>2	<1		
Lead	Aluminum	ppm	ASTM D5185m	>20	<1		
Copper         ppm         ASTM D5185m         >330         17             Tin         ppm         ASTM D5185m         >15         1             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         5             Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         0         <1	Lead		ASTM D5185m	>40	0		
Tin	Copper		ASTM D5185m	>330	17		
Vanadium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         5             Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         0         56             Manganese         ppm         ASTM D5185m         0         <1             Magnesium         ppm         ASTM D5185m         1010         929             Calcium         ppm         ASTM D5185m         1070         1089             Phosphorus         ppm         ASTM D5185m         1270         1276             Sulfur         ppm         ASTM D5185m         2060         2765             CONTAMINANTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D5185m         20         <					1		
Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         5             Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         0         <1             Manganese         ppm         ASTM D5185m         0         <1             Magnesium         ppm         ASTM D5185m         1010         929             Calcium         ppm         ASTM D5185m         1070         1089             Phosphorus         ppm         ASTM D5185m         1270         1276             Sulfur         ppm         ASTM D5185m         2060         2765             CONTAMINANTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D5185m         20 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
Boron   ppm   ASTM D5185m   0   0   0   0   0   0   0   0	Cadmium				-		
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         60         56             Manganese         ppm         ASTM D5185m         0         <1             Magnesium         ppm         ASTM D5185m         1010         929             Calcium         ppm         ASTM D5185m         1070         1089             Phosphorus         ppm         ASTM D5185m         1150         1042             Zinc         ppm         ASTM D5185m         1270         1276             Sulfur         ppm         ASTM D5185m         2060         2765             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         25         3             Sodium         ppm         ASTM D5185m         2             Potassium         ppm         ASTM D5185m         2             INFRA-RED         method         limit/base         current <th< td=""><td>Boron</td><td>ppm</td><td>ASTM D5185m</td><td>0</td><td>5</td><td></td><td></td></th<>	Boron	ppm	ASTM D5185m	0	5		
Manganese         ppm         ASTM D5185m         0         <1             Magnesium         ppm         ASTM D5185m         1010         929             Calcium         ppm         ASTM D5185m         1070         1089             Phosphorus         ppm         ASTM D5185m         1150         1042             Zinc         ppm         ASTM D5185m         1270         1276             Sulfur         ppm         ASTM D5185m         2060         2765             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3             Sodium         ppm         ASTM D5185m         2             Potassium         ppm         ASTM D5185m         >20         <1	Barium	ppm	ASTM D5185m	0	0		
Manganese         ppm         ASTM D5185m         0         <1             Magnesium         ppm         ASTM D5185m         1010         929             Calcium         ppm         ASTM D5185m         1070         1089             Phosphorus         ppm         ASTM D5185m         1150         1042             Zinc         ppm         ASTM D5185m         1270         1276             Sulfur         ppm         ASTM D5185m         2060         2765             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3             Sodium         ppm         ASTM D5185m         2             Potassium         ppm         ASTM D5185m         >20         <1	Molybdenum	ppm	ASTM D5185m	60	56		
Magnesium         ppm         ASTM D5185m         1010         929             Calcium         ppm         ASTM D5185m         1070         1089             Phosphorus         ppm         ASTM D5185m         1150         1042             Zinc         ppm         ASTM D5185m         1270         1276             Sulfur         ppm         ASTM D5185m         2060         2765             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3             Sodium         ppm         ASTM D5185m         2             Potassium         ppm         ASTM D5185m         >20         <1		ppm	ASTM D5185m	0	<1		
Calcium         ppm         ASTM D5185m         1070         1089             Phosphorus         ppm         ASTM D5185m         1150         1042             Zinc         ppm         ASTM D5185m         1270         1276             Sulfur         ppm         ASTM D5185m         2060         2765             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3             Sodium         ppm         ASTM D5185m         2             Potassium         ppm         ASTM D5185m         >20         <1	-		ASTM D5185m	1010	929		
Phosphorus         ppm         ASTM D5185m         1150         1042             Zinc         ppm         ASTM D5185m         1270         1276             Sulfur         ppm         ASTM D5185m         2060         2765             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3             Sodium         ppm         ASTM D5185m         2             Potassium         ppm         ASTM D5185m         20         <1             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.3             Nitration         Abs/cm         *ASTM D7624         >20         8.1             Sulfation         Abs/.1mm         *ASTM D7415         >30         19.3             FLUID DEGRADATION         *ASTM D7414         >25<			ASTM D5185m	1070	1089		
Zinc							
Sulfur         ppm         ASTM D5185m         2060         2765             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3             Sodium         ppm         ASTM D5185m         2              Potassium         ppm         ASTM D5185m         >20         <1             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.3             Nitration         Abs/cm         *ASTM D7624         >20         8.1             Sulfation         Abs/.1mm         *ASTM D7415         >30         19.3             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.1	· .				-		
Silicon   ppm   ASTM D5185m   >25   3	Sulfur						
Sodium         ppm         ASTM D5185m         2             Potassium         ppm         ASTM D5185m         >20         <1	CONTAMINAN	NTS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         <1             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.3             Nitration         Abs/cm         *ASTM D7624         >20         8.1             Sulfation         Abs/.1mm         *ASTM D7415         >30         19.3             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.1	Silicon	ppm	ASTM D5185m	>25	3		
INFRA-RED	Sodium	ppm	ASTM D5185m		2		
Soot %         *ASTM D7844         >4         0.3             Nitration         Abs/cm         *ASTM D7624         >20         8.1             Sulfation         Abs/.1mm         *ASTM D7415         >30         19.3             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.1	Potassium	ppm	ASTM D5185m	>20	<1		
Nitration         Abs/cm         *ASTM D7624         >20         8.1             Sulfation         Abs/.1mm         *ASTM D7415         >30         19.3             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.1	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         19.3             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.1	Soot %	%	*ASTM D7844	>4	0.3		
Sulfation         Abs/.1mm         *ASTM D7415         >30         19.3             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.1	Nitration	Abs/cm	*ASTM D7624	>20	8.1		
Oxidation			*ASTM D7415				
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.1		

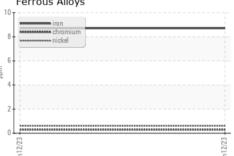


## **OIL ANALYSIS REPORT**



VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE		
Precipitate	scalar	*Visual	NONE	NONE		
Silt	scalar	*Visual	NONE	NONE		
Debris	scalar	*Visual	NONE	NONE		
Sand/Dirt	scalar	*Visual	NONE	NONE		
Appearance	scalar	*Visual	NORML	NORML		
Odor	scalar	*Visual	NORML	NORML		
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG		
Free Water	scalar	*Visual		NEG		
ELLUD DDODE	DTIEO		11 1. //			
FLUID PROPE	RHES	method				history2

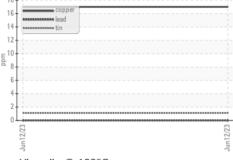
13.7

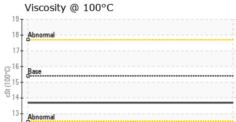


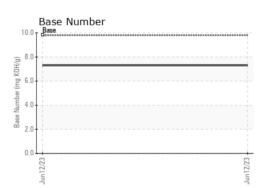
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ASTM D445 15.4

### Non-ferrous Metals











Certificate L2367

Laboratory Sample No. Lab Number

Unique Number : 10701693

: GFL0069827 : 05984398 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 20 Oct 2023 Diagnosed : 20 Oct 2023

Diagnostician : Wes Davis

GFL Environmental - 418 - Metro/MI East

22001 Hoover Dr Warren, MI US 48089 Contact: JIM HESS

jhess@gflenv.com

T: F:

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)