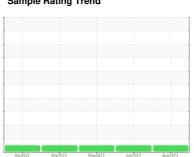


# **OIL ANALYSIS REPORT**

## Sample Rating Trend









420031 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

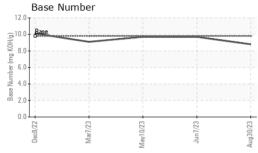
## **Fluid Condition**

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

				May2023 Jun2023		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0072530	GFL0068296	GFL0068324
Sample Date		Client Info		30 Aug 2023	07 Jun 2023	10 May 2023
Machine Age	hrs	Client Info		39340	28648	28648
Oil Age	hrs	Client Info		39340	28648	600
Oil Changed		Client Info		Not Changd	N/A	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	7	3	6
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>30	2	0	2
Lead	ppm	ASTM D5185m	>30	<1	0	2
Copper	ppm	ASTM D5185m	>150	1	<1	2
Tin	ppm	ASTM D5185m	>5	0	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m		current 5	history1	history2
	ppm		0			
Boron	• • • • • • • • • • • • • • • • • • • •	ASTM D5185m	0	5	8	7
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	5 0	8	7
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	5 0 59	8 0 59	7 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	5 0 59 0	8 0 59	7 0 60 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	5 0 59 0 985	8 0 59 0 908	7 0 60 <1 973
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	5 0 59 0 985 1144	8 0 59 0 908 1065	7 0 60 <1 973 1080
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	5 0 59 0 985 1144 1000	8 0 59 0 908 1065 1007	7 0 60 <1 973 1080 1016
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270	5 0 59 0 985 1144 1000	8 0 59 0 908 1065 1007 1190	7 0 60 <1 973 1080 1016 1218
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	5 0 59 0 985 1144 1000 1247 3622	8 0 59 0 908 1065 1007 1190 3241	7 0 60 <1 973 1080 1016 1218 3327
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	5 0 59 0 985 1144 1000 1247 3622 current	8 0 59 0 908 1065 1007 1190 3241 history1	7 0 60 <1 973 1080 1016 1218 3327 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	5 0 59 0 985 1144 1000 1247 3622 current	8 0 59 0 908 1065 1007 1190 3241 history1	7 0 60 <1 973 1080 1016 1218 3327 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	5 0 59 0 985 1144 1000 1247 3622 current 3	8 0 59 0 908 1065 1007 1190 3241 history1 4 <1	7 0 60 <1 973 1080 1016 1218 3327 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20	5 0 59 0 985 1144 1000 1247 3622 current 3 2	8 0 59 0 908 1065 1007 1190 3241 history1 4 <1	7 0 60 <1 973 1080 1016 1218 3327 history2 4 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 	5 0 59 0 985 1144 1000 1247 3622 current 3 2 3	8 0 59 0 908 1065 1007 1190 3241 history1 4 <1 1	7 0 60 <1 973 1080 1016 1218 3327 history2 4 3 1
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  Method  *ASTM D5185m  *ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  *ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 >20 >20	5 0 59 0 985 1144 1000 1247 3622 current 3 2 3	8 0 59 0 908 1065 1007 1190 3241 history1 4 <1 1 history1 0.1	7 0 60 <1 973 1080 1016 1218 3327 history2 4 3 1 history2 0.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method  *ASTM D5185m  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  *ASTM D7844  *ASTM D7624  *ASTM D76145	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 >20 >20	5 0 59 0 985 1144 1000 1247 3622 current 3 2 3 current 0.2 5.7	8 0 59 0 908 1065 1007 1190 3241 history1 4 <1 1 history1 0.1 4.5	7 0 60 <1 973 1080 1016 1218 3327 history2 4 3 1 history2 0.1 5.1
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  method  *ASTM D5185m  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  *ASTM D7844  *ASTM D7624  *ASTM D76145	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 >20 limit/base >3 >20 >30	5 0 59 0 985 1144 1000 1247 3622 current 3 2 3 current 0.2 5.7 17.5	8 0 59 0 908 1065 1007 1190 3241 history1 4 <1 1 history1 0.1 4.5 17.8	7 0 60 <1 973 1080 1016 1218 3327 history2 4 3 1 history2 0.1 5.1 18.1



## **OIL ANALYSIS REPORT**

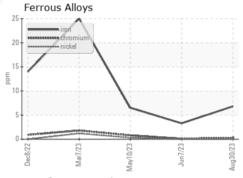


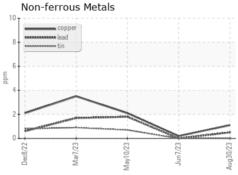
8 - Abnormal			
- Carronna		 	
/			
Base		 	
15			
4-		 	
3 - Abnormal			
2		 	
11			
Dec8/22	-	 	

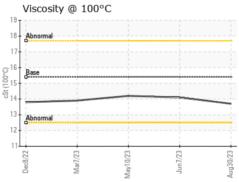
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

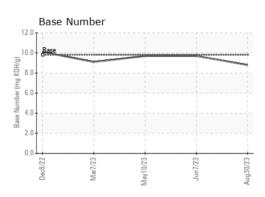
FLUID PROPE	RHES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	14.1	14.2

## **GRAPHS**













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10633884

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0072530 : 05943272

Received

: 06 Sep 2023 Diagnosed : 07 Sep 2023 Diagnostician : Wes Davis

GFL Environmental - 419 - Metro Saginaw

6950 N Michigan Saginaw, MI US 48604 Contact: Jeremy Hines jhines@gflenv.com T: (800)684-1277

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)