

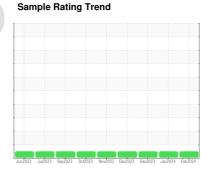
# **OIL ANALYSIS REPORT**



# (GED668) {UNASSIGNED} 933041

Component **Natural Gas Engine** 

PETRO CANADA DURON SHP 15W40 (8 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

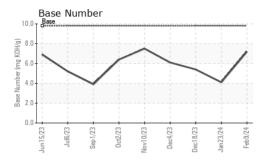
### **Fluid Condition**

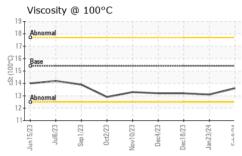
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	1ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0109956	GFL0109903	GFL0107211
Sample Date		Client Info		09 Feb 2024	23 Jan 2024	18 Dec 2023
Machine Age	hrs	Client Info		2001	1770	1553
Oil Age	hrs	Client Info		294	657	440
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	NC	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
WEAR METALS	5	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	10	20	19
Chromium	ppm	ASTM D5185m	>4	<1	1	1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	1	3	2
Lead	ppm	ASTM D5185m	>30	0	1	0
Copper	ppm	ASTM D5185m	>35	2	2	2
Tin	ppm	ASTM D5185m	>4	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	9	<1	<1
Boron Barium	ppm ppm		0	9	<1 0	<1 0
Barium	ppm	ASTM D5185m	0	0	0	0
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0	0 67	0 62	0 63
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	0 67 0	0 62 <1	0 63 1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	0 67 0 904	0 62 <1 898	0 63 1 931
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	0 67 0 904 1065	0 62 <1 898 1152	0 63 1 931 1087
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	0 67 0 904 1065 932	0 62 <1 898 1152 823	0 63 1 931 1087 998
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270	0 67 0 904 1065 932 1194	0 62 <1 898 1152 823 1146	0 63 1 931 1087 998 1240
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 67 0 904 1065 932 1194 2847	0 62 <1 898 1152 823 1146 2530	0 63 1 931 1087 998 1240 2860
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 67 0 904 1065 932 1194 2847	0 62 <1 898 1152 823 1146 2530 history1	0 63 1 931 1087 998 1240 2860 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >+100	0 67 0 904 1065 932 1194 2847 current	0 62 <1 898 1152 823 1146 2530 history1	0 63 1 931 1087 998 1240 2860 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >+100	0 67 0 904 1065 932 1194 2847 current 3	0 62 <1 898 1152 823 1146 2530 history1 6 6	0 63 1 931 1087 998 1240 2860 history2 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >+100	0 67 0 904 1065 932 1194 2847 current 3 2	0 62 <1 898 1152 823 1146 2530 history1 6 6	0 63 1 931 1087 998 1240 2860 history2 5 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >+100 >20	0 67 0 904 1065 932 1194 2847 current 3 2 5	0 62 <1 898 1152 823 1146 2530 history1 6 6 6	0 63 1 931 1087 998 1240 2860 history2 5 7
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m  Method ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >+100 >20	0 67 0 904 1065 932 1194 2847 current 3 2 5	0 62 <1 898 1152 823 1146 2530 history1 6 6 6	0 63 1 931 1087 998 1240 2860 history2 5 5 7
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method  *ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >+100 >20	0 67 0 904 1065 932 1194 2847 current 3 2 5	0 62 <1 898 1152 823 1146 2530 history1 6 6 6 6 history1 0 10.3	0 63 1 931 1087 998 1240 2860 history2 5 5 7 history2 0 9.3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT 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 D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D7844 *ASTM D7624 *ASTM D76145	0 60 0 1010 1070 1150 1270 2060 Iimit/base >+100 >20 Iimit/base	0 67 0 904 1065 932 1194 2847 current 3 2 5 current 0 7.2 17.8	0 62 <1 898 1152 823 1146 2530 history1 6 6 6 10.3 20.1	0 63 1 931 1087 998 1240 2860 history2 5 7 history2 0 9.3 18.3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD Oxidation	ppm	ASTM D5185m  Method  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method  *ASTM D7844 *ASTM D7624 *ASTM D7415  method	0 60 0 1010 1070 1150 1270 2060 limit/base >+100 >20 limit/base >20 >30 limit/base	0 67 0 904 1065 932 1194 2847 current 3 2 5 current 0 7.2 17.8	0 62 <1 898 1152 823 1146 2530 history1 6 6 6 10.3 20.1 history1	0 63 1 931 1087 998 1240 2860 history2 5 5 7 history2 0 9.3 18.3



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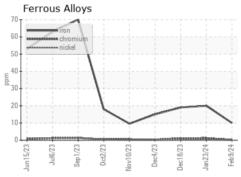


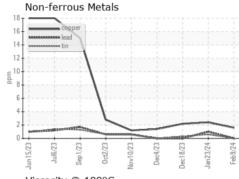


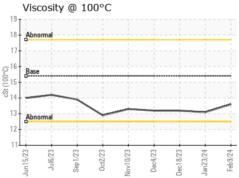
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

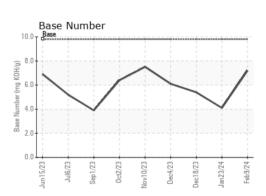
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	13.1	13.2

### **GRAPHS**













Certificate L2367

Laboratory Sample No.

**Lab Number** : 06087070 Unique Number : 10874515 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0109956

Received **Tested** Diagnosed

: 14 Feb 2024 : 14 Feb 2024 - Wes Davis

: 13 Feb 2024

GFL Environmental - 010 - Stockbridge 1280 Rum Creek Parkway

Stockbridge, GA US 30281

Contact: JOSHUA TINKER joshuatinker@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)

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