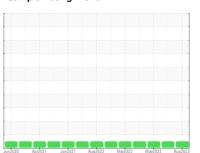


# **OIL ANALYSIS REPORT**

### **Sample Rating Trend**







Machine Id **520012-7030** Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- LTR)

# DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil

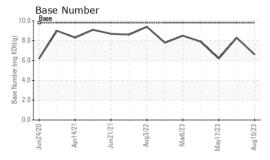
## **Fluid Condition**

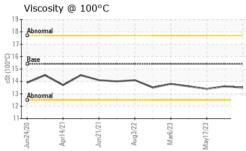
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

	Jun2020 Apr2021 Jun2021 A	Aug2022 Mar2023 May2023	Aug2023	
SAMPLE INFORMATION m	ethod limit/base	current	history1	history2
Sample Number Clie	ent Info	<b>GFL0086569</b> G	GFL0067921	GFL0074341
Sample Date Clie	ent Info	<b>10 Aug 2023</b> 1	9 Jun 2023	17 May 2023
Machine Age hrs Clie	ent Info	<b>8807</b> 8	383	8168
Oil Age hrs Clie	ent Info	<b>8592</b> 0		0
Oil Changed Clie	ent Info	Changed N	lot Changd	Changed
Sample Status		NORMAL N	IORMAL	NORMAL
CONTAMINATION m	ethod limit/base	current	history1	history2
Fuel WC	Method >3.0	<1.0	<1.0	<1.0
Glycol	Method	NEG	NEG	NEG
WEAR METALS m	ethod limit/base	current	history1	history2
Iron ppm ASTM	M D5185m >120	9	7	12
Chromium ppm ASTM	M D5185m >20	<1	<1	<1
Nickel ppm ASTM	M D5185m >5	<1	<1	<1
Titanium ppm ASTM	M D5185m >2	0	0	0
Silver ppm ASTM	M D5185m >2	0	<1	<1
Aluminum ppm ASTM	M D5185m >20	3	2	3
Lead ppm ASTM	M D5185m >40	<1	0	<1
Copper ppm ASTM	M D5185m >330	3	<1	2
Tin ppm ASTM	M D5185m >15	<1	0	1
Vanadium ppm ASTM	M D5185m	0	0	0
				_
Cadmium ppm ASTM	M D5185m	0	0	0
pp	M D5185m ethod limit/base	o current	0 history1	0 history2
ADDITIVES m				
ADDITIVES m. Boron ppm ASTM	ethod limit/base	current	history1	history2
ADDITIVES more as a second point as the second	ethod limit/base M D5185m 0	current	history1	history2 5
ADDITIVES me Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM	ethod limit/base M D5185m 0 M D5185m 0	current <1	history1 4 0	history2 5 0
ADDITIVES m.  Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM Manganese ppm ASTM	ethod limit/base M D5185m 0 M D5185m 0 M D5185m 60	current <1 0 62	history1 4 0 59	history2 5 0 62
ADDITIVES mm  Boron ppm ASTM  Barium ppm ASTM  Molybdenum ppm ASTM  Manganese ppm ASTM  Magnesium ppm ASTM	ethod limit/base M D5185m 0 M D5185m 0 M D5185m 60 M D5185m 0	current <1 0 62 <1	history1 4 0 59 <1	history2  5 0 62 <1
ADDITIVES  Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM Manganese ppm ASTM Magnesium ppm ASTM Calcium ppm ASTM	ethod limit/base  M D5185m	current <1 0 62 <1 938	history1  4  0  59  <1  1029	history2  5  0 62 <1 1022
ADDITIVES  Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM Manganese ppm ASTM Magnesium ppm ASTM Calcium ppm ASTM Phosphorus ppm ASTM	ethod limit/base  M D5185m	current <1 0 62 <1 938 1083	history1  4  0  59  <1  1029  1121	history2  5  0 62 <1 1022 1161
ADDITIVES  Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM Manganese ppm ASTM Calcium ppm ASTM Phosphorus ppm ASTM Zinc ppm ASTM	ethod limit/base  M D5185m	current <1 0 62 <1 938 1083 1035	history1  4  0  59  <1  1029  1121  1100	history2  5  0  62  <1  1022  1161  1075
ADDITIVES  Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM Manganese ppm ASTM Calcium ppm ASTM Phosphorus ppm ASTM Zinc ppm ASTM Sulfur ppm ASTM	ethod limit/base  M D5185m	current <1 0 62 <1 938 1083 1035 1244	history1  4  0  59 <1 1029 1121 1100 1383	history2  5  0  62 <1 1022 1161 1075 1372
ADDITIVES  Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM Manganese ppm ASTM Calcium ppm ASTM Phosphorus ppm ASTM Sulfur ppm ASTM CONTAMINANTS	ethod limit/base  M D5185m 0  M D5185m 0  M D5185m 60  M D5185m 0  M D5185m 1010  M D5185m 1070  M D5185m 1150  M D5185m 1270  M D5185m 2060	current <1 0 62 <1 938 1083 1083 1035 1244 2795	history1  4  0  59  <1  1029  1121  1100  1383  3915	history2  5  0 62 <1 1022 1161 1075 1372 3615
ADDITIVES  Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM Manganese ppm ASTM Calcium ppm ASTM Phosphorus ppm ASTM Zinc ppm ASTM Sulfur ppm ASTM CONTAMINANTS m Silicon ppm ASTM	ethod limit/base  M D5185m 0  M D5185m 0  M D5185m 60  M D5185m 1010  M D5185m 1070  M D5185m 1150  M D5185m 1270  M D5185m 2060  ethod limit/base	current <1 0 62 <1 938 1083 1035 1244 2795 current	history1  4 0 59 <1 1029 1121 1100 1383 3915 history1	history2  5  0 62 <1 1022 1161 1075 1372 3615
ADDITIVES  Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM Manganese ppm ASTM Calcium ppm ASTM Phosphorus ppm ASTM Zinc ppm ASTM Sulfur ppm ASTM CONTAMINANTS  Silicon ppm ASTM Sodium ppm ASTM	ethod limit/base  M D5185m 0  M D5185m 0  M D5185m 60  M D5185m 1010  M D5185m 1070  M D5185m 1150  M D5185m 1270  M D5185m 2060  ethod limit/base  M D5185m >25	current <1 0 62 <1 938 1083 1035 1244 2795 current 6	history1  4  0  59  <1  1029  1121  1100  1383  3915  history1  6	history2  5  0  62 <1 1022 1161 1075 1372 3615 history2  7
ADDITIVES  Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM Manganese ppm ASTM Calcium ppm ASTM Phosphorus ppm ASTM Sulfur ppm ASTM CONTAMINANTS  Silicon ppm ASTM Sodium ppm ASTM Sodium ppm ASTM Potassium ppm ASTM	ethod limit/base  M D5185m 0  M D5185m 0  M D5185m 60  M D5185m 1010  M D5185m 1070  M D5185m 1150  M D5185m 1270  M D5185m 2060  ethod limit/base  M D5185m >25  M D5185m	current <1 0 62 <1 938 1083 1083 1035 1244 2795 current 6	history1  4  0  59  <1  1029  1121  1100  1383  3915  history1  6  2	history2  5  0  62  <1  1022  1161  1075  1372  3615  history2  7  4
ADDITIVES  Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM Manganese ppm ASTM Calcium ppm ASTM Phosphorus ppm ASTM Zinc ppm ASTM Sulfur ppm ASTM CONTAMINANTS Silicon ppm ASTM Sodium ppm ASTM Sodium ppm ASTM Notation ppm ASTM	ethod limit/base  M D5185m	current <1 0 62 <1 938 1083 1035 1244 2795 current 6 2 2	history1  4  0  59  <1  1029  1121  1100  1383  3915  history1  6  2  3	history2  5  0 62 <1 1022 1161 1075 1372 3615 history2  7 4 1
ADDITIVES  Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM Manganese ppm ASTM Calcium ppm ASTM Phosphorus ppm ASTM Sulfur ppm ASTM CONTAMINANTS Silicon ppm ASTM Sodium ppm ASTM Notation ppm ASTM Something ppm ASTM Notation ppm ASTM N	ethod limit/base  M D5185m 0  M D5185m 0  M D5185m 60  M D5185m 1010  M D5185m 1070  M D5185m 1150  M D5185m 1270  M D5185m 2060  ethod limit/base  M D5185m >25  M D5185m >20  ethod limit/base	current <1 0 62 <1 938 1083 1035 1244 2795 current 6 2 current	history1  4  0  59  <1  1029  1121  1100  1383  3915  history1  6  2  3  history1	history2  5  0  62 <1 1022 1161 1075 1372 3615 history2  7  4 1 history2
ADDITIVES  Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM Manganese ppm ASTM Calcium ppm ASTM Phosphorus ppm ASTM Zinc ppm ASTM Sulfur ppm ASTM CONTAMINANTS m Sodium ppm ASTM Nitration Abs/cm *ASTM	ethod limit/base  M D5185m 0  M D5185m 0  M D5185m 60  M D5185m 1010  M D5185m 1070  M D5185m 1150  M D5185m 1270  M D5185m 2060  ethod limit/base  M D5185m >25  M D5185m >20  ethod limit/base	current <1 0 62 <1 938 1083 1035 1244 2795 current 6 2 current 0.4	history1  4  0  59  <1 1029 1121 1100 1383 3915 history1  6  2  3 history1  0.2	history2  5  0  62 <1 1022 1161 1075 1372 3615 history2  7  4  1 history2 0.5
Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM Manganese ppm ASTM Calcium ppm ASTM Calcium ppm ASTM Zinc ppm ASTM Sulfur ppm ASTM CONTAMINANTS m Silicon ppm ASTM Sodium ppm ASTM Nitration Abs/cm *ASTM Sulfation Abs/.1mm *ASTM	ethod limit/base  M D5185m 0  M D5185m 0  M D5185m 60  M D5185m 1010  M D5185m 1070  M D5185m 1150  M D5185m 1270  M D5185m 2060  ethod limit/base  M D5185m >20  ethod limit/base  M D5185m >20  ethod limit/base	current <1 0 62 <1 938 1083 1035 1244 2795 current 6 2 2 current 0.4 8.9	history1  4  0  59  <1 1029 1121 1100 1383 3915 history1  6  2  3 history1  0.2  6.9	history2  5  0 62 <1 1022 1161 1075 1372 3615 history2  7  4 1 history2 0.5 10.0
ADDITIVES  Boron ppm ASTM Barium ppm ASTM Molybdenum ppm ASTM Manganese ppm ASTM Calcium ppm ASTM Phosphorus ppm ASTM Sulfur ppm ASTM CONTAMINANTS m CONTAMINANTS m Sodium ppm ASTM Sodium ppm ASTM Sodium ppm ASTM Notassium	ethod limit/base  M D5185m	current <1 0 62 <1 938 1083 1035 1244 2795 current 6 2 2 current 0.4 8.9 20.1	history1  4  0  59  <1  1029  1121  1100  1383  3915  history1  6  2  3  history1  0.2  6.9  19.3	history2  5  0  62 <1 1022 1161 1075 1372 3615 history2  7  4  1 history2  0.5 10.0 22.2



# **OIL ANALYSIS REPORT**

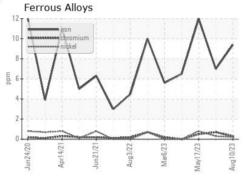


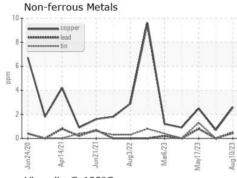


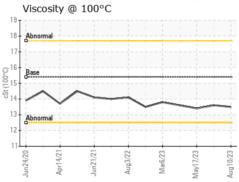
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

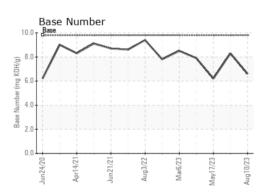
FLUID PROPE	RHES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.5	13.6	13.4

## **GRAPHS**













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10604635 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0086569 : 05924688

Received Diagnosed Diagnostician

: 15 Aug 2023 : 15 Aug 2023 : Wes Davis

GFL Environmental - 654 - Richmond Hauling

11800 Lewis Road Chester, VA US 23831

Contact: Steven Palmore spalmore@gflenv.com T:

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)

F: