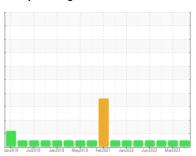


# **OIL ANALYSIS REPORT**

## Sample Rating Trend









Machine Id 901050 Component Diesel Engine Fluid

PETRO CANADA DURON HP 15W40 (--- GAL)

## 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.

SAMPLE INFORMATION   method   limit/base   current   history1   history2	ON HP 15W40 (-	GAL)	Jan2018 Jul2	018 Jan2019 May2019	Feb2021 Jan2022 Jun2022	Mar2023		
Sample Date   Client Info   18792   48651   17571	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2	
Machine Age   hrs   Client Info   18792   46651   17571	Sample Number		Client Info		GFL0084345	GFL0070687	GFL0057763	
Oil Changed	Sample Date		Client Info		30 Aug 2023	09 Mar 2023	15 Sep 2022	
Client Info   Changed   NORMAL   NORM	Machine Age	hrs	Client Info		18792	46651	17571	
CONTAMINATION	Oil Age	hrs	Client Info		612	609	480	
CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >3.0         <1.0	Oil Changed		Client Info		Changed	Changed	Changed	
Fuel	Sample Status				NORMAL	NORMAL	NORMAL	
WEAR METALS	CONTAMINAT	ΓΙΟΝ	method	limit/base	current	history1	history2	
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0	
Iron	Glycol		WC Method		NEG	NEG	NEG	
Chromium	WEAR METAL	_S	method	limit/base	current	history1	history2	
Nickel	Iron	ppm	ASTM D5185(m)	>120	10	13	11	
Titanium	Chromium		ASTM D5185(m)	>20	<1	<1	<1	
Description	Nickel	ppm	ASTM D5185(m)	>5	0	<1	0	
Aluminum	Titanium		ASTM D5185(m)	>2	0	<1	0	
Aluminum	Silver	ppm	ASTM D5185(m)	>2	0	0	0	
Copper         ppm         ASTM D5185(m)         >330         <1         2         <1           Tin         ppm         ASTM D5185(m)         >15         0         <1	Aluminum		ASTM D5185(m)	>20	3	6	3	
Copper         ppm         ASTM D5185(m)         >330         <1         2         <1           Tin         ppm         ASTM D5185(m)         >15         0         <1	Lead		, ,			<1	<1	
Tin	Copper			>330	<1	2	<1	
Antimony			, ,		0	<1	0	
Vanadium         ppm         ASTM D5185(m)         0         0         0           Beryllium         ppm         ASTM D5185(m)         0         0         0           Cadmium         ppm         ASTM D5185(m)         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         0         1         2         2           Barium         ppm         ASTM D5185(m)         0         0         0         0           Molybdenum         ppm         ASTM D5185(m)         0         0         0         0           Manganese         ppm         ASTM D5185(m)         0         <1         <1         <1         <1           Magnesium         ppm         ASTM D5185(m)         1010         960         947         922           Calcium         ppm         ASTM D5185(m)         1070         1033         1121         1022           Phosphorus         ppm         ASTM D5185(m)         1270         1185         1175         1131           Sulfur         ppm         ASTM D5185(m)         2060         2575 <th< td=""><td>Antimony</td><td></td><td></td><td></td><th>0</th><td>0</td><td>&lt;1</td></th<>	Antimony				0	0	<1	
Beryllium	•					0	0	
Cadmium         ppm         ASTM D5185(m)         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185(m)         0         1         2         2           Barium         ppm         ASTM D5185(m)         0         0         0         0           Molybdenum         ppm         ASTM D5185(m)         60         58         58         56           Manganese         ppm         ASTM D5185(m)         0         <1	Bervllium		. ,		0	0	0	
Boron	•		. ,			0	0	
Barium         ppm         ASTM D5185(m)         0         0         0           Molybdenum         ppm         ASTM D5185(m)         60         58         58         56           Manganese         ppm         ASTM D5185(m)         0         <1         <1         <1           Magnesium         ppm         ASTM D5185(m)         1010         960         947         922           Calcium         ppm         ASTM D5185(m)         1070         1033         1121         1022           Phosphorus         ppm         ASTM D5185(m)         1150         1087         1098         1031           Zinc         ppm         ASTM D5185(m)         1270         1185         1175         1131           Sulfur         ppm         ASTM D5185(m)         2060         2575         2648         2500           Lithium         ppm         ASTM D5185(m)         <1         <1         <1         <1           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >25         6         3         3         3           Sodium         ppm	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum         ppm         ASTM D5185(m)         60         58         58         56           Manganese         ppm         ASTM D5185(m)         0         <1         <1         <1           Magnesium         ppm         ASTM D5185(m)         1010         960         947         922           Calcium         ppm         ASTM D5185(m)         1070         1033         1121         1022           Phosphorus         ppm         ASTM D5185(m)         1150         1087         1098         1031           Zinc         ppm         ASTM D5185(m)         1270         1185         1175         1131           Sulfur         ppm         ASTM D5185(m)         2060         2575         2648         2500           Lithium         ppm         ASTM D5185(m)         >25         6         3         3           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >25         6         3         3         3           Sodium         ppm         ASTM D5185(m)         >20         <1         2         <1 <th colsp<="" td=""><td>Boron</td><td>ppm</td><td>ASTM D5185(m)</td><td>0</td><th>1</th><td>2</td><td>2</td></th>	<td>Boron</td> <td>ppm</td> <td>ASTM D5185(m)</td> <td>0</td> <th>1</th> <td>2</td> <td>2</td>	Boron	ppm	ASTM D5185(m)	0	1	2	2
Manganese         ppm         ASTM D5185(m)         0         <1         <1         <1           Magnesium         ppm         ASTM D5185(m)         1010         960         947         922           Calcium         ppm         ASTM D5185(m)         1070         1033         1121         1022           Phosphorus         ppm         ASTM D5185(m)         1150         1087         1098         1031           Zinc         ppm         ASTM D5185(m)         1270         1185         1175         1131           Sulfur         ppm         ASTM D5185(m)         2060         2575         2648         2500           Lithium         ppm         ASTM D5185(m)         <1	Barium	ppm	ASTM D5185(m)	0	0	0	0	
Magnesium         ppm         ASTM D5185(m)         1010         960         947         922           Calcium         ppm         ASTM D5185(m)         1070         1033         1121         1022           Phosphorus         ppm         ASTM D5185(m)         1150         1087         1098         1031           Zinc         ppm         ASTM D5185(m)         1270         1185         1175         1131           Sulfur         ppm         ASTM D5185(m)         2060         2575         2648         2500           Lithium         ppm         ASTM D5185(m)         < 1         <1         <1         <1           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >25         6         3         3           Sodium         ppm         ASTM D5185(m)         >20         <1	Molybdenum	ppm	ASTM D5185(m)	60	58	58	56	
Calcium         ppm         ASTM D5185(m)         1070         1033         1121         1022           Phosphorus         ppm         ASTM D5185(m)         1150         1087         1098         1031           Zinc         ppm         ASTM D5185(m)         1270         1185         1175         1131           Sulfur         ppm         ASTM D5185(m)         2060         2575         2648         2500           Lithium         ppm         ASTM D5185(m)         <1	Manganese	ppm	ASTM D5185(m)	0	<1	<1	<1	
Phosphorus         ppm         ASTM D5185(m)         1150         1087         1098         1031           Zinc         ppm         ASTM D5185(m)         1270         1185         1175         1131           Sulfur         ppm         ASTM D5185(m)         2060         2575         2648         2500           Lithium         ppm         ASTM D5185(m)         <1         <1         <1           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >25         6         3         3           Sodium         ppm         ASTM D5185(m)         >25         6         3         3           Potassium         ppm         ASTM D5185(m)         >20         <1	Magnesium	ppm	ASTM D5185(m)	1010	960	947	922	
Zinc         ppm         ASTM D5185(m)         1270         1185         1175         1131           Sulfur         ppm         ASTM D5185(m)         2060         2575         2648         2500           Lithium         ppm         ASTM D5185(m)         <1	Calcium	ppm	ASTM D5185(m)	1070	1033	1121	1022	
Zinc         ppm         ASTM D5185(m)         1270         1185         1175         1131           Sulfur         ppm         ASTM D5185(m)         2060         2575         2648         2500           Lithium         ppm         ASTM D5185(m)         <1         <1         <1           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >25         6         3         3           Sodium         ppm         ASTM D5185(m)         3         3         3           Potassium         ppm         ASTM D5185(m)         >20         <1	Phosphorus	ppm	ASTM D5185(m)	1150	1087	1098	1031	
Sulfur         ppm         ASTM D5185(m)         2060         2575         2648         2500           Lithium         ppm         ASTM D5185(m)         2060         2575         2648         2500           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >25         6         3         3           Sodium         ppm         ASTM D5185(m)         3         3         3         3           Potassium         ppm         ASTM D5185(m)         >20         <1         2         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         ASTM D7844*         >4         0.5         0.4         0.7           Nitration         Abs/cm         ASTM D7624*         >20         8.4         9.3         8.2	Zinc	ppm	ASTM D5185(m)	1270	1185	1175	1131	
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185(m)         >25         6         3         3           Sodium         ppm         ASTM D5185(m)         3         3         3           Potassium         ppm         ASTM D5185(m)         >20         <1	Sulfur	ppm		2060	2575	2648	2500	
Silicon         ppm         ASTM D5185(m)         >25         6         3         3           Sodium         ppm         ASTM D5185(m)         3         3         3           Potassium         ppm         ASTM D5185(m)         >20         <1         2         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         ASTM D7844*         >4         0.5         0.4         0.7           Nitration         Abs/cm         ASTM D7624*         >20         8.4         9.3         8.2	Lithium				<1	<1	<1	
Sodium         ppm         ASTM D5185(m)         3         3         3           Potassium         ppm         ASTM D5185(m)         >20         <1	CONTAMINA	NTS	method	limit/base	current	history1	history2	
Potassium         ppm         ASTM D5185(m)         >20         <1         2         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         ASTM D7844*         >4         0.5         0.4         0.7           Nitration         Abs/cm         ASTM D7624*         >20         8.4         9.3         8.2	Silicon	ppm	ASTM D5185(m)	>25	6	3	3	
Potassium         ppm         ASTM D5185(m)         >20         <1         2         <1           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         ASTM D7844*         >4         0.5         0.4         0.7           Nitration         Abs/cm         ASTM D7624*         >20         8.4         9.3         8.2	Sodium	ppm	ASTM D5185(m)		3	3	3	
Soot %         %         ASTM D7844*         >4 <b>0.5</b> 0.4         0.7           Nitration         Abs/cm         ASTM D7624*         >20 <b>8.4</b> 9.3         8.2	Potassium		ASTM D5185(m)	>20	<1	2	<1	
Nitration         Abs/cm         ASTM D7624*         >20         8.4         9.3         8.2	INFRA-RED		method	limit/base	current	history1	history2	
Nitration         Abs/cm         ASTM D7624*         >20         8.4         9.3         8.2	Soot %	%	ASTM D7844*	>4	0.5	0.4	0.7	
		Abs/cm		>20		9.3	8.2	
	Sulfation				19.7			



## **OIL ANALYSIS REPORT**







Laboratory Sample No. Lab Number Unique Number

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 550 - Rocky View County : GFL0084345

: 02581723

: 5642788 Test Package : MOB 2

Received : 12 Sep 2023 : 14 Sep 2023 Diagnosed

: Wes Davis Diagnostician

220 Carmek Blvd Rocky View County, AB **CA T1X 1X1** 

Contact: GFL Calgary calgarymaintenance@gflenv.com T:

F: (403)369-6163

To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.