

## **OIL ANALYSIS REPORT**

Sample Rating Trend





Machine Id 723049 Component Diesel Engine Fluid

### PETRO CANADA DURON SHP 15W40 (--- GAL)

Recommendation
necommenuation

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

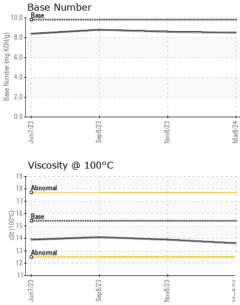
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0086980	GFL0086917	GFL0086925
Sample Date		Client Info		08 Mar 2024	08 Nov 2023	08 Sep 2023
Machine Age	hrs	Client Info		14286	14282	14282
Oil Age	hrs	Client Info		600	600	200
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	10	19	11
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>30	<1	2	1
Lead	ppm	ASTM D5185m	>30	1	5	2
Copper	ppm	ASTM D5185m	>150	<1	2	1
Tin	ppm	ASTM D5185m	>5	0	<1	1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
	1-1-			U	0	
ADDITIVES	1-1-	method	limit/base	current	history1	history2
	ppm		limit/base			
ADDITIVES		method	0	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 3	history1 5	history2 4
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0 0 60	current 3 0	history1 5 0	history2 4 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 3 0 60	history1 5 0 57	history2 4 0 61
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 3 0 60 0	history1 5 0 57 <1	history2 4 0 61 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 3 0 60 0 1006	history1 5 0 57 <1 926 1017 961	history2           4           0           61           <1           1034           1172           1068
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	Current 3 0 60 0 1006 1114	history1 5 0 57 <1 926 1017	history2 4 0 61 <1 1034 1172
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	Current           3           0           60           0           1006           1114           1047	history1 5 0 57 <1 926 1017 961	history2           4           0           61           <1           1034           1172           1068
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current           3           0           60           0           1006           1114           1047           1286	history1           5           0           57           <1           926           1017           961           1236	history2           4           0           61           <1           1034           1172           1068           1302
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	Current 3 0 60 0 1006 1114 1047 1286 3695	history1         5         0         57         <1         926         1017         961         1236         2840         history1         3	history2         4         0         61         <1         1034         1172         1068         1302         3794
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current 3 0 60 0 1006 1114 1047 1286 3695 current	history1         5         0         57         <1         926         1017         961         1236         2840         history1	history2         4         0         61         <1         1034         1172         1068         1302         3794         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base	current           3           0           60           0           1006           1114           1047           1286           3695           current           3	history1         5         0         57         <1         926         1017         961         1236         2840         history1         3	history2         4         0         61         <1         1034         1172         1068         1302         3794         history2         4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base	Current         3         0         60         0         1006         1114         1047         1286         3695         current         3         2         0         current         3         2         0         current	history1         5         0         57         <1         926         1017         961         1236         2840         history1         3         3         3         3	history2         4         0         61         <1         1034         1172         1068         1302         3794         history2         4         4         4         4         4         4         4         4         4         4         history2
ADDITIVES 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 <b>TS</b> ppm ppm	method           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >20	current         3         0         60         0         1006         1114         1047         1286         3695         current         3         2         0         current         0         current         0.2	history1         5         0         57         <1         926         1017         961         1236         2840         history1         3         0         history1         0         0.4	history2         4         0         61         <1         1034         1172         1068         1302         3794         history2         4         4         4         0.2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm	method           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>Imit/base</b> >20	Current         3         0         60         0         1006         1114         1047         1286         3695         current         3         2         0         current         3         2         0         current	history1         5         0         57         <1         926         1017         961         1236         2840         history1         3         3         0         history1	history2         4         0         61         <1         1034         1172         1068         1302         3794         history2         4         4         4         4         4         4         4         4         4         4         history2
ADDITIVES 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 <b>TS</b> ppm ppm	method           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >20 20 limit/base	current         3         0         60         0         1006         1114         1047         1286         3695         current         3         2         0         current         0         current         0.2	history1         5         0         57         <1         926         1017         961         1236         2840         history1         3         0         history1         0         0.4	history2         4         0         61         <1         1034         1172         1068         1302         3794         history2         4         4         4         0.2
ADDITIVES 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	method           ASTM D5185m           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >20 <i>limit/base</i> >20	current         3         0         60         0         1006         1114         1047         1286         3695         current         3         2         0         current         3         2         0         current         0.2         6.0	history1         5         0         57         <1         926         1017         961         1236         2840         history1         3         3         0         history1         0.4         7.4	history2         4         0         61         <1         1034         1172         1068         1302         3794         history2         4         4         4         0.2         5.9
ADDITIVES 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	method           ASTM D5185m           ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >20 <b>imit/base</b> >3 >20 >30	Current         3         0         60         0         1006         1114         1047         1286         3695         current         3         2         0         current         0.2         6.0         18.0	history1         5         0         57         <1         926         1017         961         1236         2840         history1         3         3         0         history1         0.4         7.4         19.5	history2         4         0         61         <1         1034         1172         1068         1302         3794         history2         4         4         0.2         5.9         17.9



# **OIL ANALYSIS REPORT**

VISUAL



	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
Mar8/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
W	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
I	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROPER	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	13.6	13.9	14.1
	GRAPHS						
20	Ferrous Alloys						
S 9 5 15	iron chromium						
2 15	nickel	/					
톱 10							
_	The second s						
5							
C			23	24			
	Jun7/23 Sep8/23		Nov8/23	Mar8/24			
	Non-ferrous Metals						
10							
8	copper						
	errerer []]						
e Ed			~				
8		ALTER AND					
		analis					
2	This balance of a RARRY WINDOW STREET						
C	The state of the s	and a state of the	and and an of an other descent and an other				
	Jun7/23		Nov8/23	Mar8/24			
			Z	2			
19	Viscosity @ 100°C				Base Number		
18				10.0	0		
17	1			<sub>(5</sub> 8.0			
<sub>ප</sub> 16	Race			KOH			
51 CC) 11 CC) 12 CC)				ළ 6.0 ප			
5 <sup>14</sup>				0.0 Base Number (mg KOH/g)			
13	Abnormal			88 2.0			
12	<u> </u>			2.0			
1			2	0.0			4
	Jun7/23 Sep8/23		Nov8/23	Mar8/24	Jun7/23	Sep 8/23 Nov8/23	Mar8/24
	¬ 0		2	2	~	2	2
.aboratory : W	/earCheck USA - 501	Madiso	n Ave., Carv	. NC 27513	GFL Fn	vironmental - 40	8 - Brown Citv
	FL0086980	Recei		Mar 2024			4235 M-53
.ab Number : 06	6115003	Teste		Mar 2024		BR	OWN CITY, MI
nique Number : 10		Diagr	iosed : 12	Mar 2024 - W	es Davis	0	US 48416
Fest Package : Fl	_EET ntact Customer Servid					Contact: M/	ARK WOMBLE

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)

Page 2 of 2

Certificate L2367