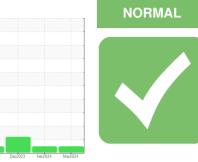


## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id **374M** Component **Diesel Engine** 

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

SAMPLE INFORMATION method

## 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

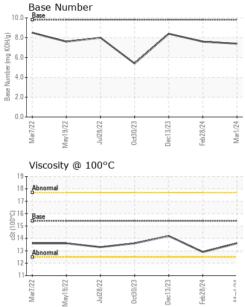
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number		Client Info		GFL0104337	GFL0104348	GFL0104225	
Sample Date		Client Info		01 Mar 2024	28 Feb 2024	13 Dec 2023	
Machine Age	hrs	Client Info		16820	15164	15161	
Oil Age	hrs	Client Info		600	600	15161	
Oil Changed		Client Info		Changed	N/A	N/A	
Sample Status				NORMAL	NORMAL	ABNORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2	
Fuel		WC Method	>3.0	<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	>120	6	11	34	
Chromium	ppm	ASTM D5185m	>20	0	<1	1	
Nickel	ppm	ASTM D5185m	>5	0	0	<1	
Titanium	ppm	ASTM D5185m		0	0	0	
Silver	ppm	ASTM D5185m	>2	0	0	0	
Aluminum	ppm	ASTM D5185m	>20	2	<1	7	
Lead	ppm	ASTM D5185m	>40	0	0	0	
Copper	ppm	ASTM D5185m	>330	0	0	2	
Tin	ppm	ASTM D5185m	>15	0	0	0	
Vanadium	ppm	ASTM D5185m		0	0	0	
Cadmium	ppm	ASTM D5185m		0	0	0	
			Pres 10 /le la la la		1 C	history O	
ADDITIVES		method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	limit/base	2	7	14	
	ppm ppm						
Boron		ASTM D5185m	0	2	7	14	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	2 1	7 2	14 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 1 53	7 2 51	14 0 72	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 1 53 0	7 2 51 0	14 0 72 <1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 1 53 0 917	7 2 51 0 860	14 0 72 <1 890 1003 940	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	2 1 53 0 917 987	7 2 51 0 860 981	14 0 72 <1 890 1003	
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	0 0 60 0 1010 1070 1150	2 1 53 0 917 987 1009	7 2 51 0 860 981 961	14 0 72 <1 890 1003 940	
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	0 0 60 0 1010 1070 1150 1270	2 1 53 0 917 987 1009 1206	7 2 51 0 860 981 961 1137	14 0 72 <1 890 1003 940 1253	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 0 60 1010 1070 1150 1270 2060	2 1 53 0 917 987 1009 1206 2575	7 2 51 0 860 981 961 1137 2521	14 0 72 <1 890 1003 940 1253 2956	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 0 60 1010 1070 1150 1270 2060	2 1 53 0 917 987 1009 1206 2575 current	7 2 51 0 860 981 961 1137 2521 history1	14 0 72 <1 890 1003 940 1253 2956 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	2 1 53 0 917 987 1009 1206 2575 current 2	7 2 51 0 860 981 961 1137 2521 history1 3	14 0 72 <1 890 1003 940 1253 2956 history2 12	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b>	2 1 53 0 917 987 1009 1206 2575 current 2 3	7 2 51 0 860 981 961 1137 2521 history1 3 5	14 0 72 <1 890 1003 940 1253 2956 history2 12 12 2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	2 1 53 0 917 987 1009 1206 2575 current 2 3 1	7 2 51 0 860 981 961 1137 2521 history1 3 5 0	14 0 72 <1 890 1003 940 1253 2956 history2 12 12 \$551 12	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20	2 1 53 0 917 987 1009 1206 2575 current 2 3 1 current	7 2 51 0 860 981 961 1137 2521 history1 3 5 0 0	14 0 72 <1 890 1003 940 1253 2956 history2 12 12 551 12 12 bistory2	
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	2 1 53 0 917 987 1009 1206 2575 current 2 3 1 current 0.2	7 2 51 0 860 981 961 1137 2521 history1 3 5 0 history1 0.4	14 0 72 <1 890 1003 940 1253 2956 history2 12 12 551 12 12 bistory2 0.7	
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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	2 1 53 0 917 987 1009 1206 2575 current 2 3 1 current 0.2 9.0	7 2 51 0 860 981 961 1137 2521 history1 3 5 0 history1 0.4 9.6	14 0 72 <1 890 1003 940 1253 2956 history2 12 12 551 12 12 12 0.7 12.4	
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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 25 20 225 20 20 20 20 20 20 20 20 20 20 20 20 20	2 1 53 0 917 987 1009 1206 2575 current 2 3 1 current 0.2 9.0 19.7	7 2 51 0 860 981 961 1137 2521 history1 3 5 0 history1 0.4 9.6 20.3	14 0 72 <1 890 1003 940 1253 2956 <b>history2</b> 12 551 12 12 <b>history2</b> 0.7 12.4 21.0	
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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 220 20 20 20 20 20 20 20 20	2 1 53 0 917 987 1009 1206 2575 Current 2 3 1 Current 0.2 9.0 19.7 Current	7 2 51 0 860 981 961 1137 2521 history1 3 5 0 history1 0.4 9.6 20.3 history1	14 0 72 <1 890 1003 940 1253 2956 history2 12 551 12 551 12 0.7 12.4 21.0 bistory2	

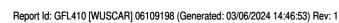


# **OIL ANALYSIS REPORT**

VISUAL



* - Denotes tes	t methods that	: GFL0104337 : 06109198 : 10912695 : FLEET contact Customer Serv are outside of the ISO 3	Recei Teste Diagn vice at 1-8 17025 sco	n Ave., Cary, NC 27513 GFL ved : 05 Mar 2024 d : 06 Mar 2024 osed : 06 Mar 2024 - Wes Davis 00-237-1369.			Environmental - 410 - Michigan West 39000 Van Born Rd Wayne, MI US 48184 Contact: Jennifer Shurko jshurko@gflenv.com T: (734)714-2340		
		D-00[] 15 Abnormal 12 14 13 12 11 22/b[h/ew 27/b[h/ew	0ct30/23	Dec13/23	Marl/24 Base Number (mg KOH(g) B 4 9 8	0	Jut28/22	Dec13/23 Feb28/24 Feb28/24	Mar1/24
		Viscosity @ 100°( 19 18 Abnormal 17	C		10 (5)HOX	.0		~	
		Mar7/22 Vav/19/22 Ju/28/22	0ct30/23	Dec 13/23	Mar1/24				
		8 - copper lead							
		2278210 22761/1/20 Non-ferrous Meta	0ct30/23	Dec13/23	Mar1/24				
		E 20- 15- 10- 5-	/		/				
0ct30/23	Feb28/24	Ferrous Alloys	/	$\overline{)}$					
		Visc @ 100°C GRAPHS	cSt	ASTM D445	15.4	13.6	12.9	14.2	
		FLUID PROPE		method	limit/base	current	history1	history	y2
)°C		Emulsified Water Free Water	scalar scalar	*Visual *Visual	>0.2	NEG NEG	NEG NEG	NEG NEG	
0ct30/23 Dec13/23	Feb28/24 Mar1/24	Odor	scalar	*Visual	NORML	NORML	NORML	NORML	
3/23	eb28/24	Sand/Dirt Appearance	scalar scalar	*Visual *Visual	NONE NORML	NONE NORML	NONE NORML	NONE NORML	_
		Debris	scalar	*Visual	NONE	NONE	NONE	NONE	
Y		Precipitate Silt	scalar scalar	*Visual *Visual	NONE NONE	NONE NONE	NONE NONE	NONE NONE	
$\backslash$		White Metal Yellow Metal	scalar scalar	*Visual *Visual	NONE NONE	NONE NONE	NONE NONE	NONE NONE	



Submitted By: seel also GFL468 - Laura Wilson