

## **OIL ANALYSIS REPORT**

Sample Rating Trend

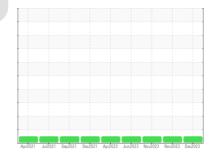




Machine Id **742M** Component **Diesel Engine** Fluid

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.

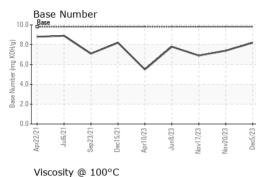
### Fluid Condition

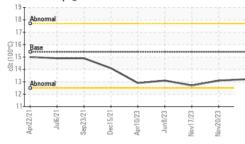
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		methou			TIIStOLA	TIIStOTYZ
Sample Number		Client Info		GFL0101468	GFL0089079	GFL0101496
Sample Date		Client Info		05 Dec 2023	20 Nov 2023	17 Nov 2023
Machine Age	hrs	Client Info		22738	22605	22592
Oil Age	hrs	Client Info		22605	0	21493
Oil Changed		Client Info		Changed	Not Changd	Changed
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	4	44	68
Chromium	ppm	ASTM D5185m		0	1	2
Nickel	ppm	ASTM D5185m		0	0	1
Titanium	ppm	ASTM D5185m	~ -	0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm		>30	۰ <1	3	4
Lead			>30	0	3	4
Copper	ppm ppm	ASTM D5185m	>150	ں <1	1	4
Tin			>5	0	<1	<1
Vanadium	ppm	ASTM D5185m	>0	0	<1	0
Cadmium	ppm				0	<1
	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	13	1	<1
Barium	ppm	ASTM D5185m	0	0	2	10
Molybdenum	ppm	ASTM D5185m	60	58	57	71
Manganese						
•	ppm	ASTM D5185m	0	<1	<1	<1
Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	0 1010	<1 918		<1 1055
•		ASTM D5185m			<1	
Magnesium	ppm	ASTM D5185m	1010	918	<1 1014	1055
Magnesium Calcium	ppm ppm	ASTM D5185m ASTM D5185m	1010 1070	918 1119	<1 1014 1083	1055 1204
Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150	918 1119 1009	<1 1014 1083 880	1055 1204 1138
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270	918 1119 1009 1223	<1 1014 1083 880 1265	1055 1204 1138 1397
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060	918 1119 1009 1223 3089	<1 1014 1083 880 1265 2890	1055 1204 1138 1397 3319
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1010 1070 1150 1270 2060 limit/base	918 1119 1009 1223 3089 current 2	<1 1014 1083 880 1265 2890 history1 4	1055 1204 1138 1397 3319 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base	918 1119 1009 1223 3089 current	<1 1014 1083 880 1265 2890 history1	1055 1204 1138 1397 3319 history2 6
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >20	918 1119 1009 1223 3089 current 2 3	<1 1014 1083 880 1265 2890 history1 4 6	1055 1204 1138 1397 3319 history2 6 7 2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 <b>limit/base</b> >20 <b>limit/base</b>	918 1119 1009 1223 3089 current 2 3 1 1 current	<1 1014 1083 880 1265 2890 history1 4 6 2 2 history1	1055 1204 1138 1397 3319 history2 6 7 2 2 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >20 limit/base >3	918 1119 1009 1223 3089 current 2 3 1 current 0.7	<1 1014 1083 880 1265 2890 history1 4 6 2 history1 1	1055 1204 1138 1397 3319 history2 6 7 2 2 history2 1.2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 22060 imit/base >20 imit/base >3 >20	918 1119 1009 1223 3089 current 2 3 1 current 0.7 8.9	<1 1014 1083 880 1265 2890 history1 4 6 2 history1 1 1 10.4	1055 1204 1138 1397 3319 history2 6 7 2 history2 1.2 1.2 12.2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7844	1010 1070 1150 22060 <b>Imit/base</b> >20 <b>S</b> 20 <b>Imit/base</b> >3 >20 >3 >20	918 1119 1009 1223 3089 current 2 3 1 current 0.7 8.9 21.0	<1 1014 1083 880 1265 2890 history1 4 6 2 history1 1 1 10.4 22.5	1055 1204 1138 1397 3319 history2 6 7 2 <u>history2</u> 1.2 1.2 1.2 12.2 24.1
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7844	1010 1070 1150 22060 imit/base >20 imit/base >3 >20	918 1119 1009 1223 3089 current 2 3 1 current 0.7 8.9 21.0 current	<1 1014 1083 880 1265 2890 history1 4 6 2 history1 1 1 10.4	1055 1204 1138 1397 3319 history2 6 7 2 history2 1.2 1.2 12.2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI Oxidation	ppm ppm ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm Abs/cm Abs/1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7614 *ASTM D7414	1010 1070 1150 22060 <b>Imit/base</b> >20 <b>S</b> 20 <b>Imit/base</b> >3 >20 >3 >20	918 1119 1009 1223 3089 <u>current</u> 2 3 1 <u>current</u> 0.7 8.9 21.0 <u>current</u> 17.9	<1 1014 1083 880 1265 2890 history1 4 6 2 history1 1 1 10.4 22.5 history1 20.0	1055 1204 1138 1397 3319 history2 6 7 2 history2 1.2 1.2 12.2 24.1 history2 22.9
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm ppm ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7624 *ASTM D7415	1010 1070 1150 1270 2060 <b>imit/base</b> >20 <b>imit/base</b> >3 >20 >30 <b>imit/base</b>	918 1119 1009 1223 3089 current 2 3 1 current 0.7 8.9 21.0 current	<1 1014 1083 880 1265 2890 history1 4 6 2 history1 1 10.4 22.5 history1	1055 1204 1138 1397 3319 history2 6 7 2 history2 1.2 1.2 12.2 24.1 history2

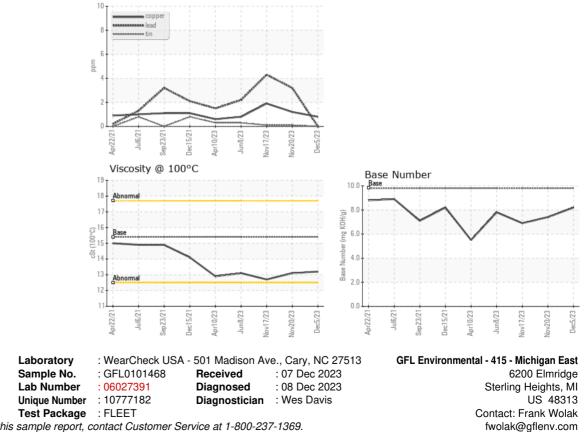


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.2	13.1	12.7
GRAPHS						
Ferrous Alloys						
0 iron		$\wedge$				
0 - chromium		$/ \setminus$				
		/				
0						
0						
10			1			
		A CONTRACTOR OF	Lange and a state of the state			
121 121 121 121 121 121	/23	/23 .	/23			
Apr22/21	Apr10/23	Juno/23 - Nov17/23 - Nov20/23 -	Dec5/23 -			



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)

Certificate L2367

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F: