

## **OIL ANALYSIS REPORT**

Sample Rating Trend





Machine Id 654M Component

Fluid

Diesel Engine

PETRO CANADA DURON SHP 15W40 (28 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

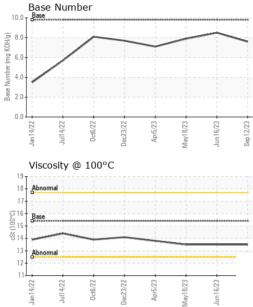
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method				history2	
Sample Number		Client Info		GFL0091509	GFL0082809	GFL0081308	
Sample Date		Client Info		12 Sep 2023	16 Jun 2023	18 May 2023	
Machine Age	hrs	Client Info		7697	0	6925	
Oil Age	hrs	Client Info		600	600	600	
Oil Changed		Client Info		Not Changd	Changed	Changed	
Sample Status			NORMAL		NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2	
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2	
Iron	ppm		>120	10	5	10	
Chromium	ppm	ASTM D5185m		<1	<1	<1	
Nickel	ppm	ASTM D5185m	>5	0	0	0	
Titanium	ppm	ASTM D5185m		<1	0	0	
Silver	ppm	ASTM D5185m	>2	0	0	0	
Aluminum	ppm	ASTM D5185m		2	<1	0	
Lead	ppm	ASTM D5185m	>40	<1	0	<1	
Copper	ppm	ASTM D5185m		2	<1	1	
Tin	ppm		>15	<1	0	<1	
Vanadium	ppm	ASTM D5185m		<1	0	0	
Cadmium	ppm	ASTM D5185m		0	0	0	
ADDITIVES		ام م مالح میں	limit/base		In the term of the	history2	
ADDITIVES		method	iimit/base	current	history1	nistoryz	
Boron	ppm	ASTM D5185m	0	current 2	nistory i 4	2	
	ppm ppm						
Boron		ASTM D5185m	0	2	4	2	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	2 0	4 0	2 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 60	4 0 57	2 0 58	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 60 <1	4 0 57 <1	2 0 58 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 0 60 <1 1070	4 0 57 <1 967	2 0 58 <1 899	
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 0 60 <1 1070 1225	4 0 57 <1 967 1073	2 0 58 <1 899 1019	
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 0 60 <1 1070 1225 1009	4 0 57 <1 967 1073 995	2 0 58 <1 899 1019 929	
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 0 60 <1 1070 1225 1009 1345	4 0 57 <1 967 1073 995 1269	2 0 58 <1 899 1019 929 1182	
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	0 0 60 1010 1070 1150 1270 2060	2 0 60 <1 1070 1225 1009 1345 3344	4 0 57 <1 967 1073 995 1269 3472	2 0 58 <1 899 1019 929 1182 2840	
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	0 0 60 1010 1070 1150 1270 2060	2 0 60 <1 1070 1225 1009 1345 3344 current	4 0 57 <1 967 1073 995 1269 3472 history1 3	2 0 58 <1 899 1019 929 1182 2840 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 0 60 <1 1070 1225 1009 1345 3344 <i>current</i> 5	4 0 57 <1 967 1073 995 1269 3472 history1	2 0 58 <1 899 1019 929 1182 2840 history2 4	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b>	2 0 60 <1 1070 1225 1009 1345 3344 current 5 6	4 0 57 <1 967 1073 995 1269 3472 history1 3 2	2 0 58 <1 899 1019 929 1182 2840 history2 4 3	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	2 0 60 <1 1070 1225 1009 1345 3344 current 5 6 1 1	4 0 57 <1 967 1073 995 1269 3472 history1 3 2 <1 **********************************	2 0 58 <1 899 1019 929 1182 2840 history2 4 3 <1 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	2 0 60 <1 1070 1225 1009 1345 3344 current 5 6 1 1 current 0.3	4 0 57 <1 967 1073 995 1269 3472 history1 3 2 <1 +istory1 0.2	2 0 58 <1 899 1019 929 1182 2840 history2 4 3 <1 history2 0.5	
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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	2 0 60 <1 1070 1225 1009 1345 3344 <i>current</i> 5 6 1 <i>current</i> 0.3 7.0	4 0 57 <1 967 1073 995 1269 3472 history1 3 2 <1 history1 0.2 5.9	2 0 58 <1 899 1019 929 1182 2840 history2 4 3 <1 history2 0.5 6.6	
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 <b>imit/base</b> >25 <b>imit/base</b> >4 >20	2 0 60 <1 1070 1225 1009 1345 3344 current 5 6 1 1 current 0.3 7.0 19.1	4 0 57 <1 967 1073 995 1269 3472 history1 3 2 <1 3 2 <1 0.2 5.9 19.2	2 0 58 <1 899 1019 929 1182 2840 <b>history2</b> 4 3 <1 <b>history2</b> 0.5 6.6 19.8	
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 D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	2 0 60 <1 1070 1225 1009 1345 3344 <i>current</i> 5 6 1 <i>current</i> 0.3 7.0 19.1	4 0 57 <1 967 1073 995 1269 3472 history1 3 2 <1 history1 0.2 5.9	2 0 58 <1 899 1019 929 1182 2840 history2 4 3 <1 history2 0.5 6.6	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624 *ASTM D7414	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 <b>imit/base</b> >4 >20	2 0 60 <1 1070 1225 1009 1345 3344 <i>current</i> 5 6 1 1 <i>current</i> 0.3 7.0 19.1 <i>current</i> 15.5	4 0 57 <1 967 1073 995 1269 3472 history1 3 2 <1 3 2 <1 0.2 5.9 19.2 history1 14.6	2 0 58 <1 899 1019 929 1182 2840 history2 4 3 <1 history2 0.5 6.6 19.8 history2 15.0	
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 ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	2 0 60 <1 1070 1225 1009 1345 3344 <i>current</i> 5 6 1 <i>current</i> 0.3 7.0 19.1	4 0 57 <1 967 1073 995 1269 3472 history1 3 2 <1 5.9 19.2 history1	2 0 58 <1 899 1019 929 1182 2840 history2 4 3 <1 history2 0.5 6.6 19.8 history2	



# **OIL ANALYSIS REPORT**

VISUAL



		White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt	scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual	NONE NONE NONE NONE NONE	NONE NONE NONE NONE NONE	NONE NONE NONE NONE NONE	NONE NONE NONE NONE NONE	
<b>⊃</b> o Dec23/22 + Apr5/23 + May18/23 + Jun16/23 +	Jun 16/23 Sep 12/23	Appearance Odor Emulsified Water Free Water	scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual	NORML NORML >0.2	NORML NORML NEG NEG	NORML NORML NEG NEG	NORML NORML NEG NEG	
		FLUID PROPE Visc @ 100°C	CSt	method ASTM D445	limit/base 15.4	current 13.5	history1 13.5	history2 13.5	
Dec23/22	1 1 1 8	Non-ferrous Meta		3 Horizon 18/23 Horizon 18/24	3 1 1 2 2 3 4 2 2 2 3 4 2 2 2 3 4 2 2 2 3 4 2 2 2 2				
	1 [2-001] tso 1 1	Jan 14/22	Dec23/22 Apr5/23 Apr5/23	May18/23 May18/23 Jun16/23 Jun16/23	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Base Number Base Original Control of Control	Dec23/22 Ap/5/23	May18/23 Jun16/23 Sep12/23	
Certificate 12367 Te To discuss this sar * - Denotes test me	mple No.   b Number   ique Number   st Package   mple report, construction   ethods that are	GFL0091509 05953597 10649556 FLEET ntact Customer Serv outside of the ISO 1	501 Madison Ave., Cary, NC 27513 <b>Received</b> : 18 Sep 2023 <b>Diagnosed</b> : 20 Sep 2023 <b>Diagnostician</b> : Wes Davis rice at 1-800-237-1369. 7025 scope of accreditation. the simple acceptance decision rule (July 2014)			GFL Environmental - 465 - Pontiac 888 Baldwin Pontiac, MI US 48340 Contact: Ricky Matthews rickymathews@gflenv.com T: (586)825-9514 CGM 106:2012) F:			

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Submitted By: Ricky Matthews

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