

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id **773M** Component **Diesel Engine** Fluid

PETRO CANADA DURON SHP 15W40 (36 QTS)

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

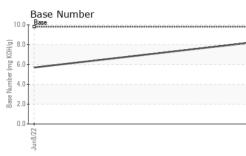
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

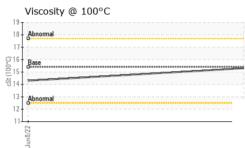
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0084885	GFL0052154	
Sample Date		Client Info		10 Jul 2023	08 Jun 2022	
Machine Age	hrs	Client Info		4668	3631	
Oil Age	hrs	Client Info		4668	0	
Oil Changed		Client Info		Changed	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	
WEAR METAL	C	mathad	limit/base	ourropt	biotory1	history?
	3	method		current	history1	history2
Iron	ppm	ASTM D5185m	>90	36	43	
Chromium	ppm	ASTM D5185m	>20	1	1	
Nickel	ppm	ASTM D5185m	>2	<1	<1	
Titanium	ppm	ASTM D5185m	>2	<1	0	
Silver	ppm	ASTM D5185m	>2	0	0	
Aluminum	ppm	ASTM D5185m	>20	5	3	
Lead	ppm	ASTM D5185m	>40	<1	<1	
Copper	ppm	ASTM D5185m	>330	1	2	
Tin	ppm	ASTM D5185m	>15	<1	<1	
Vanadium	ppm	ASTM D5185m		<1	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	Method ASTM D5185m	limit/base	current	history1 4	history2
	ppm ppm		0			
Boron		ASTM D5185m	0	1	4	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	1 0	4	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	1 0 59	4 0 60	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	1 0 59 <1	4 0 60 <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	1 0 59 <1 965	4 0 60 <1 907	
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	1 0 59 <1 965 1099	4 0 60 <1 907 1093	
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 1010 1070 1150	1 0 59 <1 965 1099 1015	4 0 60 <1 907 1093 960	
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	1 0 59 <1 965 1099 1015 1271	4 0 60 <1 907 1093 960 1246	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 0 1010 1070 1150 1270 2060 limit/base	1 0 59 <1 965 1099 1015 1271 3385 current	4 0 60 <1 907 1093 960 1246 2536	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	0 0 60 0 1010 1070 1150 1270 2060 limit/base	1 0 59 <1 965 1099 1015 1271 3385	4 0 60 <1 907 1093 960 1246 2536 history1	
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 method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	1 0 59 <1 965 1099 1015 1271 3385 current 5	4 0 60 <1 907 1093 960 1246 2536 history1 8	 history2
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 method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	1 0 59 <1 965 1099 1015 1271 3385 current 5 7	4 0 60 <1 907 1093 960 1246 2536 history1 8 7	 history2
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	ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	1 0 59 <1 965 1099 1015 1271 3385 current 5 7 5 5 current	4 0 60 <1 907 1093 960 1246 2536 history1 8 7 0 0	 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6	1 0 59 <1 965 1099 1015 1271 3385 <u>current</u> 5 7 5 <i>current</i> 0.9	4 0 60 <1 907 1093 960 1246 2536 history1 8 7 0 history1 1	 history2 history2
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 <i>limit/base</i> >25 >20 <i>limit/base</i> >6 >20	1 0 59 <1 965 1099 1015 1271 3385 current 5 7 5 7 5 current 0.9 12.2	4 0 60 <1 907 1093 960 1246 2536 history1 8 7 0 history1 1 1 12.8	 history2 history2
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 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20 >20 >30	1 0 59 <1 965 1099 1015 1271 3385 <u>current</u> 5 7 5 <u>current</u> 0.9 12.2 23.5	4 0 60 <1 907 1093 960 1246 2536 history1 8 7 0 0 history1 1 1 2.8 25.6	 history2 history2 history2
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 imit/base >25 >20 imit/base >6 >20 >30 imit/base	1 0 59 <1 965 1099 1015 1271 3385 <i>current</i> 5 7 5 <i>current</i> 0.9 12.2 23.5	4 0 60 <1 907 1093 960 1246 2536 history1 8 7 0 history1 1 12.8 25.6 history1	 history2 history2 history2 history2
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 imit/base >25 >20 imit/base >6 >20 >30 imit/base >25	1 0 59 <1 965 1099 1015 1271 3385 <u>current</u> 5 7 5 <u>current</u> 0.9 12.2 23.5	4 0 60 <1 907 1093 960 1246 2536 history1 8 7 0 0 history1 1 1 2.8 25.6	 history2 history2 history2



OIL ANALYSIS REPORT

VISUAL





NONE White Metal *Visual NONE NONE scalar Yellow Metal *Visual NONE NONE NONE scalar Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris *Visual NONE scalar NONE NONE Sand/Dirt NONE NONE NONE scalar *Visual NORML Appearance scalar *Visual NORML NORML Odor *Visual NORML NORML scalar NORML **Emulsified Water** scalar *Visual >0.2 NEG NEG Free Water scalar *Visual NEG NEG **FLUID PROPERTIES** Visc @ 100°C cSt ASTM D445 15.4 15.3 14.3 GRAPHS Ferrous Alloys 4! 40 35 icke 30 25 20 15 10 ٥. Non-ferrous Metals 10 lead Viscosity @ 100°C Base Number 19 10. 8 (mg KOH/g) ္ 16 100 mber 5 14 4 (Base 13 Abno 12 11-0.0 GFL Environmental - 410 - Michigan West Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : GFL0084885 Received : 13 Jul 2023 39000 Van Born Rd Wayne, MI Lab Number : 05897182 Diagnosed : 13 Jul 2023 Unique Number : Wes Davis US 48184 : 10552992 Diagnostician Test Package : FLEET Contact: Belal Dgheish bdgheish@gflenv.com

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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