

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id **99M** Component **Diesel Engine**

PETRO CANADA DURON SHP 15W40 (36 QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

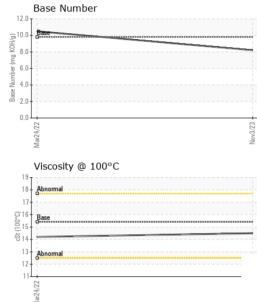
Fluid Condition

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

ON SHP 15W40 (3	6 Q I S)		Mar2022	Nov2023		
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0059172	GFL0018493	
Sample Date		Client Info		03 Nov 2023	24 Mar 2022	
Machine Age	hrs	Client Info		3528	9744	
Oil Age	hrs	Client Info		0	0	
Oil Changed		Client Info		N/A	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel	ION	WC Method	>3.0	<1.0	<1.0	HISTOLYZ
Glycol		WC Method	>0.0	NEG	NEG	
WEAR METAL	c	method	limit/base	current	history1	history2
			>90	26	10	
Iron	ppm	ASTM D5185m		_		
Chromium Nickel	ppm	ASTM D5185m	>20	1	<1	
	ppm	ASTM D5185m	>2	0	0	
Titanium	ppm	ASTM D5185m	>2	0	0	
Silver	ppm	ASTM D5185m	>2	0	<1	
Aluminum	ppm	ASTM D5185m	>20	7	2	
Lead	ppm	ASTM D5185m	>40	0	0	
Copper	ppm	ASTM D5185m	>330	1	<1	
Tin	ppm	ASTM D5185m	>15	0	0	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 1	history1 6	history2
	ppm					
Boron		ASTM D5185m	0	1	6	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	1 0	6	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	1 0 62	6 0 62	
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	1 0 62 <1	6 0 62 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	1 0 62 <1 1032	6 0 62 <1 1017	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	1 0 62 <1 1032 1156	6 0 62 <1 1017 1161	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	1 0 62 <1 1032 1156 1057	6 0 62 <1 1017 1161 1154	
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 ASTM D5185m	0 0 60 0 1010 1070 1150	1 0 62 <1 1032 1156 1057 1405	6 0 62 <1 1017 1161 1154 1387	
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 0 1010 1070 1150 1270 2060	1 0 62 <1 1032 1156 1057 1405 2974	6 0 62 <1 1017 1161 1154 1387 2823	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	1 0 62 <1 1032 1156 1057 1405 2974	6 0 62 <1 1017 1161 1154 1387 2823 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	1 0 62 <1 1032 1156 1057 1405 2974 current	6 0 62 <1 1017 1161 1154 1387 2823 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	1 0 62 <1 1032 1156 1057 1405 2974 current 6	6 0 62 <1 1017 1161 1154 1387 2823 history1 3 0	history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	1 0 62 <1 1032 1156 1057 1405 2974 current 6 1	6 0 62 <1 1017 1161 1154 1387 2823 history1 3 0 2	history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	1 0 62 <1 1032 1156 1057 1405 2974 current 6 1 1	6 0 62 <1 1017 1161 1154 1387 2823 history1 3 0 2 history1 0.3	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	1 0 62 <1 1032 1156 1057 1405 2974 current 6 1	6 0 62 <1 1017 1161 1154 1387 2823 history1 3 0 2	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m method *ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	1 0 62 <1 1032 1156 1057 1405 2974 current 6 1 1 current	6 0 62 <1 1017 1161 1154 1387 2823 history1 3 0 2 history1 0.3 8.0	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624 *ASTM D7415 method	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30 limit/base	1 0 62 <1 1032 1156 1057 1405 2974 current 6 1 1 current 1.5 12.9 24.3	6 0 62 <1 1017 1161 1154 1387 2823 history1 3 0 2 history1 0.3 8.0 19.0 history1	history2 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m Method *ASTM D5185m *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m method *ASTM D7844 *ASTM D7624 *ASTM D7415 method *ASTM D7414	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30	1 0 62 <1 1032 1156 1057 1405 2974 current 6 1 1 current 1.5 12.9 24.3	6 0 62 <1 1017 1161 1154 1387 2823 history1 3 0 2 history1 0.3 8.0 19.0	history2 history2



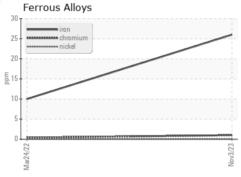
OIL ANALYSIS REPORT

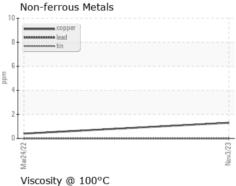


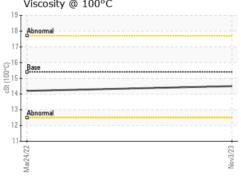
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
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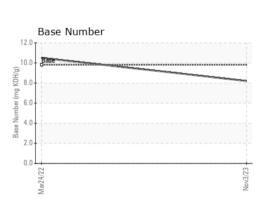
FLUID PROPI	EHILO	method			HISTORY	nistoryz
Visc @ 100°C	cSt	ASTM D445	15.4	14.5	14.2	

GRAPHS











Certificate L2367

Laboratory Sample No. Lab Number

Unique Number : 10736504 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0059172 : 06002742

Received Diagnosed Diagnostician : Wes Davis

: 09 Nov 2023 : 10 Nov 2023 GFL Environmental - 410 - Michigan West

39000 Van Born Rd Wayne, MI US 48184 Contact: Belal Dgheish

bdgheish@gflenv.com T: (734)714-2340

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)