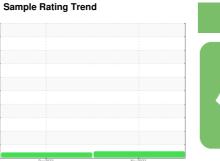


OIL ANALYSIS REPORT









Machine Id **913076** Component **Diesel Engine**

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

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

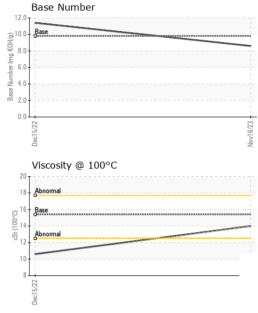
Fluid Condition

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 (- GAL)		Dec2022	Nov2023		
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0101527	GFL0064010	
Sample Date		Client Info		16 Nov 2023	15 Dec 2022	
Machine Age	hrs	Client Info		3216	962	
Oil Age	hrs	Client Info		962	0	
Oil Changed	1110	Client Info		Changed	Changed	
Sample Status		Onorie iriio		NORMAL	ATTENTION	
	ION	us a the a al	live it/le e e e			
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	0.4	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	6	65	
Chromium	ppm	ASTM D5185m	>20	<1	2	
Nickel	ppm	ASTM D5185m	>5	<1	12	
Titanium	ppm	ASTM D5185m	>2	<1	<1	
Silver	ppm	ASTM D5185m	>2	0	2	
Aluminum	ppm	ASTM D5185m	>20	2	6	
Lead	ppm	ASTM D5185m	>40	0	<1	
Copper	ppm	ASTM D5185m	>330	3	214	
Tin	ppm	ASTM D5185m	>15	<1	6	
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	history2
	ppm ppm					
Boron		ASTM D5185m	0	1	130	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	1 0	130 <1	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	1 0 54	130 <1 123	
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	1 0 54 <1	130 <1 123 6	
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 54 <1 892	130 <1 123 6 731	
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 54 <1 892 1047	130 <1 123 6 731 1545	
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 54 <1 892 1047 966	130 <1 123 6 731 1545 750	
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 54 <1 892 1047 966 1220	130 <1 123 6 731 1545 750 924	
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	1 0 54 <1 892 1047 966 1220 2775	130 <1 123 6 731 1545 750 924 2693	
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 54 <1 892 1047 966 1220 2775	130 <1 123 6 731 1545 750 924 2693 history1	 history2
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 54 <1 892 1047 966 1220 2775 current	130 <1 123 6 731 1545 750 924 2693 history1 70	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 54 <1 892 1047 966 1220 2775 current 6	130 <1 123 6 731 1545 750 924 2693 history1 70 0 10	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	1 0 54 <1 892 1047 966 1220 2775 current 6 3 2	130 <1 123 6 731 1545 750 924 2693 history1 70 0 10 history1	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 >20	1 0 54 <1 892 1047 966 1220 2775 current 6 3 2	130 <1 123 6 731 1545 750 924 2693 history1 70 0 10 history1 1.2	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 D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	1 0 54 <1 892 1047 966 1220 2775 current 6 3 2 current 0.3 5.7	130 <1 123 6 731 1545 750 924 2693 history1 70 0 10 history1 1.2 8.5	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 D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	1 0 54 <1 892 1047 966 1220 2775 current 6 3 2 current 0.3 5.7 18.5	130 <1 123 6 731 1545 750 924 2693 history1 70 0 10 history1 1.2 8.5 22.2	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 >4 >20 >30 limit/base	1 0 54 <1 892 1047 966 1220 2775 current 6 3 2 current 0.3 5.7 18.5	130 <1 123 6 731 1545 750 924 2693 history1 70 0 10 history1 1.2 8.5 22.2 history1	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 method *ASTM D7844 *ASTM D7624 *ASTM D7415 method *ASTM D7414	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	1 0 54 <1 892 1047 966 1220 2775 current 6 3 2 current 0.3 5.7 18.5	130 <1 123 6 731 1545 750 924 2693 history1 70 0 10 history1 1.2 8.5 22.2	history2 history2



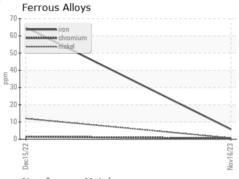
OIL ANALYSIS REPORT



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	
FLUID PROPE	RTIES	method	limit/base	current	history1	history2

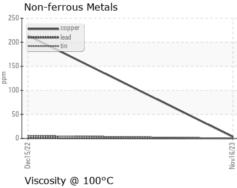
14.0

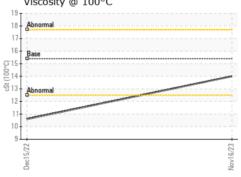
Visc @	100°C
GRA	PHS

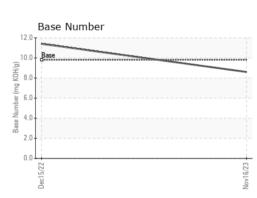


cSt

ASTM D445 15.4







10.6





Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10749659

: GFL0101527 : 06010515 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 17 Nov 2023

Diagnosed Diagnostician : Wes Davis

: 17 Nov 2023

GFL Environmental - 415 - Michigan East

6200 Elmridge Sterling Heights, MI US 48313 Contact: Frank Wolak fwolak@gflenv.com T: (586)825-9514

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)