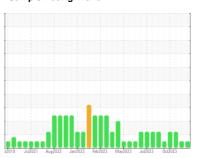


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 12036 Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (32 QTS)

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.

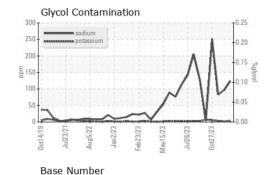
Fluid Condition

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

Q13)		:t2019 Jul20	21 Aug2022 Jan2023	Feb2023 May2023 Jul2023			
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		GFL0068859	GFL0097154	GFL0097146	
Sample Date		Client Info		13 Jan 2024	3 Jan 2024 22 Dec 2023		
Machine Age	hrs	Client Info		13843	13730	13583	
Oil Age	hrs	Client Info		538	425	278	
Oil Changed		Client Info		Changed Not Chang		Not Changd	
Sample Status				NORMAL NORMAL		ATTENTION	
CONTAMINATI	ON	method	limit/base	current	history1	history2	
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	NEG	
WEAR METALS	3	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>75	11	10	8	
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1	
Nickel	ppm	ASTM D5185m	>4	0	0	<1	
Titanium	ppm	ASTM D5185m	>2	0	0	<1	
Silver	ppm	ASTM D5185m	>2	0	0	0	
Aluminum	ppm	ASTM D5185m	>15	3	3	5	
Lead	ppm	ASTM D5185m	>25	0	0	0	
Copper	ppm	ASTM D5185m	>100	1	<1	1	
Tin	ppm	ASTM D5185m	>4	0	0	0	
Vanadium	ppm	ASTM D5185m		<1	0	0	
Cadmium	ppm	ASTM D5185m		0	0	0	
ADDITIVES			11		11.0	hiotomyO	
ADDITIVES		method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	0	current 1	nistory1 1	4	
	ppm						
Boron	• •	ASTM D5185m	0	1	1	4	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	1 0	1	4	
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	1 0 55	1 0 62	4 0 54	
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	1 0 55 0	1 0 62 0	4 0 54 <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 55 0 859	1 0 62 0 866	4 0 54 <1 850	
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 55 0 859 913	1 0 62 0 866 1007	4 0 54 <1 850 918	
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 55 0 859 913 953	1 0 62 0 866 1007 937	4 0 54 <1 850 918 941	
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 1270	1 0 55 0 859 913 953 1151	1 0 62 0 866 1007 937 1122	4 0 54 <1 850 918 941 1145	
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	1 0 55 0 859 913 953 1151 2868	1 0 62 0 866 1007 937 1122 2835	4 0 54 <1 850 918 941 1145 2857	
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 55 0 859 913 953 1151 2868	1 0 62 0 866 1007 937 1122 2835 history1	4 0 54 <1 850 918 941 1145 2857 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	1 0 55 0 859 913 953 1151 2868 current	1 0 62 0 866 1007 937 1122 2835 history1	4 0 54 <1 850 918 941 1145 2857 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	1 0 55 0 859 913 953 1151 2868 current 5	1 0 62 0 866 1007 937 1122 2835 history1 5 97	4 0 54 <1 850 918 941 1145 2857 history2 10 ▲ 83	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	1 0 55 0 859 913 953 1151 2868 current 5 124	1 0 62 0 866 1007 937 1122 2835 history1 5 97	4 0 54 <1 850 918 941 1145 2857 history2 10 ▲ 83 3	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	1 0 55 0 859 913 953 1151 2868 current 5 124 4	1 0 62 0 866 1007 937 1122 2835 history1 5 97 1	4 0 54 <1 850 918 941 1145 2857 history2 10 ▲ 83 3 NEG	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D2982 *Method	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20	1 0 55 0 859 913 953 1151 2868 current 5 124 4 0.0	1 0 62 0 866 1007 937 1122 2835 history1 5 97 1 0.0	4 0 54 <1 850 918 941 1145 2857 history2 10 ▲ 83 3 NEG	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm	ASTM D5185m *ASTM D2982 *Method *ASTM D7844	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20	1 0 55 0 859 913 953 1151 2868 current 5 124 4 0.0	1 0 62 0 866 1007 937 1122 2835 history1 5 97 1 0.0 history1 0.4	4 0 54 <1 850 918 941 1145 2857 history2 10 ▲ 83 3 NEG history2 0.3	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	1 0 55 0 859 913 953 1151 2868 current 5 124 4 0.0 current 0.4 8.3	1 0 62 0 866 1007 937 1122 2835 history1 5 97 1 0.0 history1 0.4 7.3	4 0 54 <1 850 918 941 1145 2857 history2 10 ▲ 83 3 NEG history2 0.3 6.9	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D2982 *ASTM D7844 *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 55 0 859 913 953 1151 2868 current 5 124 4 0.0 current 0.4 8.3 18.3	1 0 62 0 866 1007 937 1122 2835 history1 5 97 1 0.0 history1 0.4 7.3 18.1 history1	4 0 54 <1 850 918 941 1145 2857 history2 10 ▲ 83 3 NEG history2 0.3 6.9 17.9 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20	1 0 55 0 859 913 953 1151 2868 current 5 124 4 0.0 current 0.4 8.3 18.3	1 0 62 0 866 1007 937 1122 2835 history1 5 97 1 0.0 history1 0.4 7.3 18.1	4 0 54 <1 850 918 941 1145 2857 history2 10 ▲ 83 3 NEG history2 0.3 6.9 17.9	

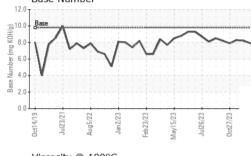


OIL ANALYSIS REPORT



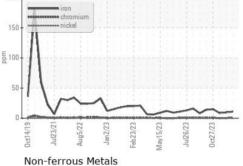
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

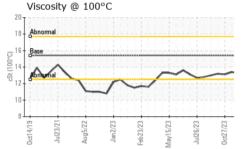
	FLUID PROPI	ERTIES	method				history2
m/w ~~	Visc @ 100°C	cSt	ASTM D445	15.4	12.9	13.3	13.4

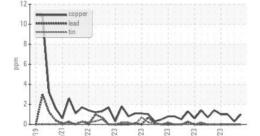


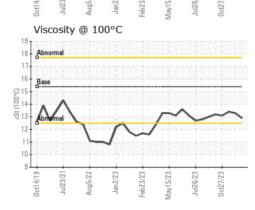


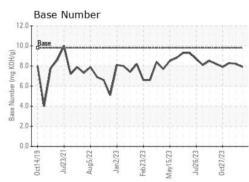
GRAPHS















Certificate L2367

Laboratory Sample No. Lab Number **Unique Number**

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 06066673

: GFL0068859 : 10843350

Recieved Diagnosed

: 22 Jan 2024 : 01 Feb 2024

Diagnostician : Wes Davis Test Package : FLEET (Additional Tests: Glycol)

155 Story Road Warner Robins, GA US 31093

Contact: JOSH MALONEY jmaloney@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)

GFL Environmental - 073 - Warner Robins - Transwaste

T:

F: