

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 728099 FREIGHTLINER M2 106 Component Diesel Engine

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

Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

Metal levels are typical for a new component breaking in.

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		GFL0061445	GFL0061444	
Sample Date		Client Info		20 Mar 2023	05 Dec 2022	
Machine Age	hrs	Client Info		748	907	
Oil Age	hrs	Client Info		907	907	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	37	186	
Chromium	ppm	ASTM D5185m	>5	1	5	
Nickel	ppm	ASTM D5185m	>2	۔ <1	2	
Titanium	ppm	ASTM D5185m	_	<1	<1	
Silver	ppm	ASTM D5185m	>3	<1	0	
Aluminum	ppm	ASTM D5185m	>30	6	28	
Lead	ppm	ASTM D5185m	>30	<1	6	
Copper	ppm	ASTM D5185m	>150	3	8	
Tin	ppm	ASTM D5185m	>5	<1	<1	
Vanadium	ppm	ASTM D5185m		0	<1	
a						
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES	ppm	ASTM D5185m method	limit/base	0 current	0 history1	history2
	ppm ppm		limit/base	-	-	 history2
ADDITIVES		method		current	history1	
ADDITIVES Boron	ppm	method ASTM D5185m	0	current	history1 56	
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current 17 0	history1 56 0	
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 17 0 69	history1 56 0 109	
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 17 0 69 <1	history1 56 0 109 2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 17 0 69 <1 924	history1 56 0 109 2 781	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current 17 0 69 <1 924 1259	history1 56 0 109 2 781 1717	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	current 17 0 69 <1 924 1259 1098	history1 56 0 109 2 781 1717 993	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current 17 0 69 <1 924 1259 1098 1310	history1 56 0 109 2 781 1717 993 1208	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current 17 0 69 <1 924 1259 1098 1310 3838	history1 56 0 109 2 781 1717 993 1208 3720	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current 17 0 69 <1 924 1259 1098 1310 3838 current	history1 56 0 109 2 781 1717 993 1208 3720 history1	 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current 17 0 69 <1 924 1259 1098 1310 3838 current 8	history1 56 0 109 2 781 1717 993 1208 3720 history1 15	 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base	current 17 0 69 <1 924 1259 1098 1310 3838 current 8 8 8	history1 56 0 109 2 781 1717 993 1208 3720 history1 15 14	 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >20	current 17 0 69 <1 924 1259 1098 1310 3838 current 8 8 1	history1 56 0 109 2 781 1717 993 1208 3720 history1 15 14 8	 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >20 Janti base	current 17 0 69 <1 924 1259 1098 1310 3838 current 8 8 <1 current 0 current	history1 56 0 109 2 781 1717 993 1208 3720 history1 15 14 8 history1 1.1 13.3	 history2 history2
ADDITIVES 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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >20 limit/base >3	current 17 0 69 <1 924 1259 1098 1310 3838 current 8 8 1 2 1 0 0	history1 56 0 109 2 781 1717 993 1208 3720 history1 15 14 8 history1 1.1	 history2 history2
ADDITIVES 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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >20 imit/base >3 >20	current 17 0 69 <1 924 1259 1098 1310 3838 current 8 8 4 - 0 0.2 6.7	history1 56 0 109 2 781 1717 993 1208 3720 history1 15 14 8 history1 1.1 13.3	 history2 history2
ADDITIVES 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	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >20 imit/base >3 >20	current 17 0 69 <1 924 1259 1098 1310 3838 current 8 8 <1 ourrent 0.2 6.7 18.9	history1 56 0 109 2 781 1717 993 1208 3720 history1 15 14 8 history1 1.1 13.3 28.1	 history2 history2 history2



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10.0 Base

> 19 18 Abnormal

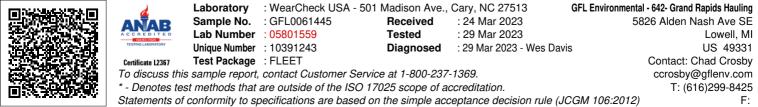
> 13 Abnormal

12

(mg KOH/g) 8. 6.0 Number (4.0 Base N 2.0 0.0 Dec5/77

OIL ANALYSIS REPORT

.n.	FT-IR (Direct Trend)		VISUAL		method	limit/base	current	history1	history2
5.	Oxidation Nitration	V	/hite Metal	scalar	*Visual	NONE	NONE	NONE	
0.			ellow Metal	scalar	*Visual	NONE	NONE	NONE	
5.	Abnomal		recipitate	scalar	*Visual	NONE	NONE	NONE	
0.		S	ilt	scalar	*Visual	NONE	NONE	NONE	
5.	Assaultententententententententententententent	D	ebris	scalar	*Visual	NONE	NONE	NONE	
5.	and a start of the	S	and/Dirt	scalar	*Visual	NONE	NONE	NONE	
	Dec5/22 Mar20/23	A	ppearance	scalar	*Visual	NORML	NORML	NORML	
	Der	С	dor	scalar	*Visual	NORML	NORML	NORML	
	Base Number	E	mulsified Water	scalar	*Visual	>0.2	NEG	NEG	
0.	Base	F	ree Water	scalar	*Visual		NEG	NEG	
0.			FLUID PROPE	RTIES	method	limit/base	current	history1	history2
0		V	isc @ 100°C	cSt	ASTM D445	15.4	12.8	13.7	
0.			GRAPHS						
0		200 т	Ferrous Alloys						
0.	Dec5/22	200	iron chromium						
	Decl.	150-	nennennen nickel						
	Viscosity @ 100°C	튭 100 -							
9. 8.	Abnormal	E							
7.	0	50-							
6.	Base								
5. 4.		0	2			22			
3.	Abnormal		Dec5/22			Mar20/23			
2.	0			_		Ň			
11-		10 T	Non-ferrous Metal	s					
	Dec5/22	copper							
		8 totomaster tin							
		e e							
		4-	Contract of the Association of t	TRANSPORT					
				A REAL PROPERTY AND INC.	TREASONNESS STORE				
		2			THE OWNER WATCHING TO A DESCRIPTION OF THE OWNER WATCHI	and a state of the			
			22			33			
			Dec5/22			/lar20/23			
			Viscosity @ 100°C			2	Base Number		
			1			10.0		*****	
			Abnormal						
		17-				(B/HC			
		_ပ ါဂ်-	Base			월 6.0			
		() () () () () () () () () () () () () (0.0 6.0 8 Base Number 4.0			
						4.0			
		13-	Abnormal			2.0			
		12-							
		111	/22			0.0			/23
			Dec5/22			Mar20/23	Dec5/22		Mar20/23
						~			2
		· \\/	arCheck USA - 50	1 Madico		NC 27512	GEL Enviro	nmental - 642- Gran	d Banide Hauling
1	ANAR Sample No.		L0061445	Recei		Mar 2023			Nash Ave SE



Report Id: GFL642 [WUSCAR] 05801559 (Generated: 06/04/2024 06:56:21) Rev: 1

Submitted By: BRITTANY FLINN

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