

OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id 913042 Component Diesel Engine Fluid

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

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

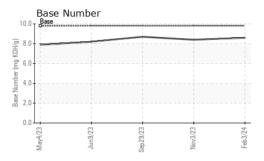
Fluid Condition

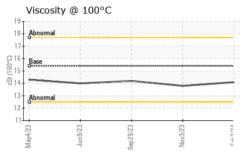
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info GFL0101281 GFL0091749 GFL009181 Sample Date Client Info 03 Feb 2024 03 Nov 2023 29 Sep 2023 29 Sep 2023 20		` ,	May2023	Jun2023	Sep2023 Nov2023	Feb 2024	
Sample Date Client Info Wachine Age hrs Client Info Wachine Age hrs Client Info Wage Washine Age hrs Client Info Wage Washine Age hrs Client Info Wage Washine Age Washine Age	SAMPLE INFO	ORMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 4099 3388 3105	Sample Number		Client Info		GFL0101281	GFL0091749	GFL0091814
Machine Age hrs Client Info 4099 3388 3105	•		Client Info		03 Feb 2024	03 Nov 2023	29 Sep 2023
Oil Age hrs Client Info 3388 3388 3105 Oil Changed Sample Status Client Info Not Changd NoRMAL 1.0 1.0 1.0 1.0	•	hrs	Client Info		4099	3388	
Not Changed Sample Status						3388	3105
NORMAL NORMAL NORMAL CONTAMINATION method imit/base current history1 history2	•						
Fuel			Olioni iilio				
Fuel	•	ATION	method	limit/base			
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 5 11 4 Chromium ppm ASTM D5185m >20 <1		TION					
WEAR METALS							
WEAR METALS				>0.2	-		
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1	WEAR META	ALS	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	5	11	4
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 <1 2 <1 Lead ppm ASTM D5185m >40 0 <1 <1 Copper ppm ASTM D5185m >330 <1 2 1 Tin ppm ASTM D5185m >15 1 <1 <1 <1 Vanadium ppm ASTM D5185m >15 1 <1 <1 <1 <1 <0 0 Cadmium ppm ASTM D5185m 0 <1 2 5 5 Boron ppm ASTM D5185m 0 0 5 0 0 Barium ppm ASTM D5185m 0 0 5 0 0 Boron ppm ASTM D5185m 0 0 5 0 6 6 6 6 6 6 6 6 6 6 <td>Nickel</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>5</td> <th><1</th> <td>1</td> <td>0</td>	Nickel	ppm	ASTM D5185m	>5	<1	1	0
Aluminum ppm ASTM D5185m >20 <1 2 <1 Lead ppm ASTM D5185m >40 0 <1	Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Lead	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >330 <1 2 1 Tin ppm ASTM D5185m >15 1 <1	Aluminum	ppm	ASTM D5185m	>20	<1	2	<1
Tin	Lead	ppm	ASTM D5185m	>40	0	<1	<1
Tin	Copper	ppm	ASTM D5185m	>330	<1	2	1
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 2 5 Barium ppm ASTM D5185m 0 0 5 0 Molybdenum ppm ASTM D5185m 60 59 62 68 Manganese ppm ASTM D5185m 0 <1 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 993 940 1162 Calcium ppm ASTM D5185m 1070 1057 1081 1209 Phosphorus ppm ASTM D5185m 1270 1271 1221 1512 Sulfur ppm ASTM D5185m 2060 3163 2976 3829 CONTAMINANTS method limit/base current <	• •			>15	1		<1
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Boron	Cadmium		ASTM D5185m		0		
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Molybdenum ppm ASTM D5185m 60 59 62 68 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 993 940 1162 Calcium ppm ASTM D5185m 1070 1057 1081 1209 Phosphorus ppm ASTM D5185m 1150 1043 1001 1237 Zinc ppm ASTM D5185m 1270 1271 1221 1512 Sulfur ppm ASTM D5185m 2060 3163 2976 3829 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 6 Sodium ppm ASTM D5185m >20 <1 4 2 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4	Boron	ppm	ASTM D5185m	0	1	2	5
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 993 940 1162 Calcium ppm ASTM D5185m 1070 1057 1081 1209 Phosphorus ppm ASTM D5185m 1150 1043 1001 1237 Zinc ppm ASTM D5185m 1270 1271 1221 1512 Sulfur ppm ASTM D5185m 2060 3163 2976 3829 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 6 Sodium ppm ASTM D5185m 3 0 3 Potassium ppm ASTM D5185m >20 <1	Barium	ppm	ASTM D5185m	0	0	5	0
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 993 940 1162 Calcium ppm ASTM D5185m 1070 1057 1081 1209 Phosphorus ppm ASTM D5185m 1150 1043 1001 1237 Zinc ppm ASTM D5185m 1270 1271 1221 1512 Sulfur ppm ASTM D5185m 2060 3163 2976 3829 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 6 Sodium ppm ASTM D5185m 3 0 3 Potassium ppm ASTM D5185m >20 <1	Molybdenum	ppm	ASTM D5185m	60	59	62	68
Magnesium ppm ASTM D5185m 1010 993 940 1162 Calcium ppm ASTM D5185m 1070 1057 1081 1209 Phosphorus ppm ASTM D5185m 1150 1043 1001 1237 Zinc ppm ASTM D5185m 1270 1271 1221 1512 Sulfur ppm ASTM D5185m 2060 3163 2976 3829 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 6 Sodium ppm ASTM D5185m >20 <1 4 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.5 0.2 Nitration Abs/:nm *ASTM D7624 >20 6.7 7.1 5.2 Sulfation Abs/:nm *ASTM D	-		ASTM D5185m	0	<1	<1	<1
Calcium ppm ASTM D5185m 1070 1057 1081 1209 Phosphorus ppm ASTM D5185m 1150 1043 1001 1237 Zinc ppm ASTM D5185m 1270 1271 1221 1512 Sulfur ppm ASTM D5185m 2060 3163 2976 3829 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 6 Sodium ppm ASTM D5185m >20 <1	•				993	940	1162
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Zinc ppm ASTM D5185m 1270 1271 1221 1512 Sulfur ppm ASTM D5185m 2060 3163 2976 3829 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 6 Sodium ppm ASTM D5185m 3 0 3 Potassium ppm ASTM D5185m >20 <1							
Sulfur ppm ASTM D5185m 2060 3163 2976 3829 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 6 Sodium ppm ASTM D5185m 3 0 3 Potassium ppm ASTM D5185m >20 <1							
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 6 Sodium ppm ASTM D5185m 3 0 3 Potassium ppm ASTM D5185m >20 <1							
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Potassium ppm ASTM D5185m >20 <1 4 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.4 0.5 0.2 Nitration Abs/cm *ASTM D7624 >20 6.7 7.1 5.2 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 19.3 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.9 13.1							
INFRA-RED				>20			
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Nitration Abs/cm *ASTM D7624 >20 6.7 7.1 5.2 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 19.3 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.9 13.1		0/				•	
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FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.9 13.1							
Oxidation Abs/.1mm *ASTM D7414 >25 14.7 14.9 13.1			^ASTM D7415	>30	18.9	19.3	1/.4
	FLUID DEGR	RADATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.6 8.4 8.7	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.7	14.9	13.1
	Base Number (BN	V) mg KOH/g	ASTM D2896	9.8	8.6	8.4	8.7



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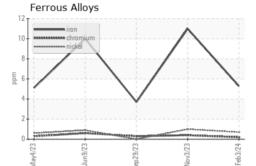


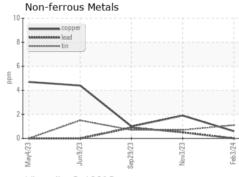


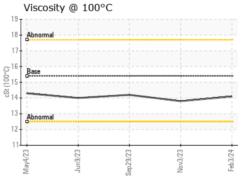
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

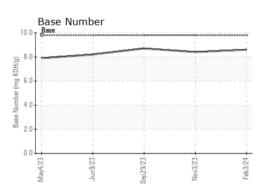
FLUID PROPE	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	13.8	14.2

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number : 06084184 Unique Number: 10871629

Test Package : FLEET

: GFL0101281

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

Received **Tested** Diagnosed

: 08 Feb 2024 : 09 Feb 2024

: 09 Feb 2024 - Wes Davis

GFL Environmental - 654 - Richmond Hauling

11800 Lewis Road Chester, VA US 23831

Contact: Jimmy Mayes

jmayes@gflenv.com T:

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)

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