

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id **712029** Component **Diesel Engine** Fluid

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

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

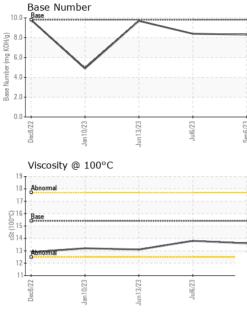
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		GFL0086866	GFL0072520	GFL0072525	
Sample Date		Client Info		06 Sep 2023	06 Jul 2023	13 Jun 2023	
Machine Age	hrs	Client Info		2926	2926	2926	
Oil Age	hrs	Client Info		2926	2926	2926	
Oil Changed		Client Info		Changed	Changed	N/A	
Sample Status				NORMAL	NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2	
Fuel		WC Method	>5	<1.0	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>80	12	24	7	
Chromium	ppm	ASTM D5185m		<1	<1	<1	
Nickel	ppm	ASTM D5185m	>2	0	<1	0	
Titanium	ppm	ASTM D5185m	~_	0	0	0	
Silver	ppm	ASTM D5185m	>3	0	0	0	
Aluminum	ppm	ASTM D5185m		<1	3	<1	
Lead	ppm	ASTM D5185m	>30	0	0	0	
Copper	ppm	ASTM D5185m		۰ <1	<1	<1	
Tin	ppm	ASTM D5185m	>5	<1	<1	0	
Vanadium	ppm	ASTM D5185m	>5	<1	<1	0	
Cadmium	ppm	ASTM D5185m		0	0	0	
	ррш	AGTIM DJTOJII		U	-	-	
ADDITIVES		method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	0	3	4	18	
Boron Barium	ppm ppm						
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	0	3	4	18 0 52	
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0	4 0 62 <1	18 0 52 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	3 0 61	4 0 62 <1 1015	18 0 52 <1 855	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 61 <1	4 0 62 <1 1015 1393	18 0 52 <1 855 1264	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	3 0 61 <1 995 1183 1021	4 0 62 <1 1015 1393 1169	18 0 52 <1 855 1264 964	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	3 0 61 <1 995 1183	4 0 62 <1 1015 1393	18 0 52 <1 855 1264 964 1178	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	3 0 61 <1 995 1183 1021	4 0 62 <1 1015 1393 1169	18 0 52 <1 855 1264 964	
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	0 0 60 0 1010 1070 1150 1270	3 0 61 <1 995 1183 1021 1287	4 0 62 <1 1015 1393 1169 1418	18 0 52 <1 855 1264 964 1178	
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	0 0 60 1010 1070 1150 1270 2060	3 0 61 <1 995 1183 1021 1287 3597	4 0 62 <1 1015 1393 1169 1418 4157	18 0 52 <1 855 1264 964 1178 3562	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm 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 1010 1070 1150 1270 2060	3 0 61 <1 995 1183 1021 1287 3597 current	4 0 62 <1 1015 1393 1169 1418 4157 history1	18 0 52 <1 855 1264 964 1178 3562 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 60 1010 1070 1150 1270 2060	3 0 61 <1 995 1183 1021 1287 3597 current 4	4 0 62 <1 1015 1393 1169 1418 4157 history1 4	18 0 52 <1 855 1264 964 1178 3562 history2 5	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >20	3 0 61 <1 995 1183 1021 1287 3597 current 4 4	4 0 62 <1 1015 1393 1169 1418 4157 history1 4 5	18 0 52 <1 855 1264 964 1178 3562 history2 5 2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >20	3 0 61 <1 995 1183 1021 1287 3597 current 4 4 3	4 0 62 <1 1015 1393 1169 1418 4157 history1 4 5 5 5	18 0 52 <1 855 1264 964 1178 3562 history2 5 2 2 <1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 2060 200 200 200 200 200 200	3 0 61 <1 995 1183 1021 1287 3597 current 4 4 3 3 5 vurrent	4 0 62 <1 1015 1393 1169 1418 4157 history1 4 5 5 5 history1	18 0 52 <1 855 1264 964 1178 3562 history2 5 2 <1 **********************************	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >20 20 limit/base >20	3 0 61 <1 995 1183 1021 1287 3597 current 4 4 3 3 current 0.4	4 0 62 <1 1015 1393 1169 1418 4157 history1 4 5 5 5 history1 0.7	18 0 52 <1 855 1264 964 1178 3562 history2 5 2 <1 2 <1 history2 0.2	
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >20 <i>limit/base</i> >20	3 0 61 <1 995 1183 1021 1287 3597 current 4 4 3 3 current 0.4 7.5	4 0 62 <1 1015 1393 1169 1418 4157 history1 4 5 5 5 history1 0.7 9.4	18 0 52 <1 855 1264 964 1178 3562 history2 5 2 5 2 <1 history2 0.2 5.5	
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	ASTM D5185m ASTM D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 2060 2060 200 200 200 200 200 200	3 0 61 <1 995 1183 1021 1287 3597 current 4 4 3 0 current 0.4 7.5 18.8 current	4 0 62 <1 1015 1393 1169 1418 4157 history1 4 5 5 5 history1 0.7 9.4 20.6 history1	18 0 52 <1 855 1264 964 1178 3562 history2 5 2 <1 5 2 <1 history2 0.2 5.5 19.3 history2	
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >20 imit/base >3 >20	3 0 61 <1 995 1183 1021 1287 3597 current 4 4 3 3 current 0.4 7.5 18.8	4 0 62 <1 1015 1393 1169 1418 4157 history1 4 5 5 5 <u>history1</u> 0.7 9.4 20.6	18 0 52 <1 855 1264 964 1178 3562 history2 5 2 <1 bistory2 0.2 5.5 19.3	



OIL ANALYSIS REPORT

VISUAL



Laboratory Sample No. Lab Numbe Unique Numb Certificate 12367 To discuss this sample report		: WearCheck USA : GFL0086866 : 05949854 : 10645813 : FLEET contact Customer Se	Received Diagnose Diagnost	l : 13 ed : 15 ician : We	Sep 2023 Sep 2023 Is Davis	3 GFL Env	GFL Environmental - 419 - Metro Saginav 6950 N Michigar Saginaw, M US 48604 Contact: Jeremy Hines jhines@gflenv.com		
		14 13 12 11 12 11 12 12 12 12 12 12	Jun 13/23	Jul6/23	4. 4. 888 Winnie 8366 Manuel 800 C	0 -	Jun13/23	Jul6/23 +	San6.772
		177 G 16 15 3 14			.6 Base Number (mg F				
		19 18 - Abnormal	I I I	 	10.				,
		Viscosity @ 100				Base Number			
		Dec8/22 Jan10/23	Jun 13/23	Jul6/23	Sep6/23				
		2							
		6							
		10 E 8							
		12							
				1					
		Decention Decent	Jun13/23	Jul	Sep				
		an 10/23	=Z/2	Jul6/23	Sep6/23				
		60 40							
		80							
Jun13/23		140							
//23	Jul6/23	180 iron iron							
		GRAPHS Ferrous Alloys							
		Visc @ 100°C	cSt	ASTM D445	15.4	13.6	13.8	13.1	
		FLUID PROP	PERTIES	method	limit/base	current	history1	histo	ory2
		Free Water	scalar	*Visual		NEG	NEG	NEG	
۳۲	, o	Odor Emulsified Water	scalar scalar	*Visual *Visual	NORML >0.2	NORML NEG	NORML NEG	NOR	ЛL
Jun 13/23	Jul6/23 Sep6/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NOR	
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE	Ξ
		Debris	scalar	*Visual	NONE	NONE	NONE	NONE	
		Precipitate Silt	scalar scalar	*Visual *Visual	NONE NONE	NONE NONE	NONE NONE	NONE	
		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
						NONE	NONE		

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Submitted By: Colton Kitts Page 2 of 2

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