

OIL ANALYSIS REPORT

Sample Rating Trend





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.

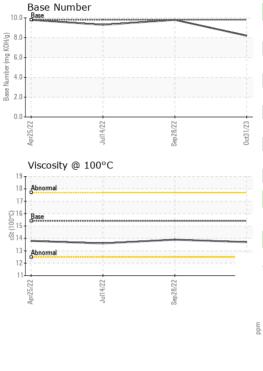
Fluid Condition

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

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0084923	GFL0052103	GFL0052080
Sample Date		Client Info		31 Oct 2023	28 Sep 2022	14 Jul 2022
Machine Age	mls	Client Info		331843	303199	278320
Oil Age	mls	Client Info		28644	303199	278320
Oil Changed		Client Info		N/A	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	c	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	4	8	6
Chromium	ppm	ASTM D5185m		0	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m		2	2	2
Lead	ppm	ASTM D5185m	>30	<1	0	<1
Copper	ppm	ASTM D5185m		3	2	2
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		ام م مالدم میں	limit/base		1.	biotory 0
ADDITIVES		method	iimii/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	3	history1 2	4
	ppm ppm					
Boron		ASTM D5185m	0	3	2	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	3 0	2 2	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 58	2 2 63	4 0 54
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 58 <1	2 2 63 <1	4 0 54 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	3 0 58 <1 979	2 2 63 <1 917	4 0 54 <1 838
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 58 <1 979 1062	2 2 63 <1 917 1093	4 0 54 <1 838 1021
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 58 <1 979 1062 1032	2 2 63 <1 917 1093 990	4 0 54 <1 838 1021 901
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 58 <1 979 1062 1032 1293	2 2 63 <1 917 1093 990 1220	4 0 54 <1 838 1021 901 1103
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 58 <1 979 1062 1032 1293 3112	2 2 63 <1 917 1093 990 1220 3391	4 0 54 <1 838 1021 901 1103 3226
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	3 0 58 <1 979 1062 1032 1293 3112 current	2 2 63 <1 917 1093 990 1220 3391 history1	4 0 54 <1 838 1021 901 1103 3226 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	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 58 <1 979 1062 1032 1293 3112 current 4	2 2 63 <1 917 1093 990 1220 3391 history1 4	4 0 54 <1 838 1021 901 1103 3226 history2 4
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 >30	3 0 58 <1 979 1062 1032 1293 3112 current 4 3	2 2 63 <1 917 1093 990 1220 3391 history1 4 0	4 0 54 <1 838 1021 901 1103 3226 history2 4 <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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30 >20	3 0 58 <1 979 1062 1032 1293 3112 current 4 3 <1 current	2 2 63 <1 917 1093 990 1220 3391 history1 4 0 1 history1	4 0 54 <1 838 1021 901 1103 3226 history2 4 <1 0 history2
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 Imit/base >30 >20 Imit/base	3 0 58 <1 979 1062 1032 1293 3112 current 4 3 <1 current 0.3	2 2 63 <1 917 1093 990 1220 3391 history1 4 0 1 1 <u>history1</u> 0.5	4 0 54 <1 838 1021 901 1103 3226 history2 4 <1 0 history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 >20 Imit/base	3 0 58 <1 979 1062 1032 1293 3112 current 4 3 <1 current	2 2 63 <1 917 1093 990 1220 3391 history1 4 0 1 history1	4 0 54 <1 838 1021 901 1103 3226 history2 4 <1 0 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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 imit/base >3 20	3 0 58 <1 979 1062 1032 1293 3112 current 4 3 <1 current 0.3 7.5 18.4	2 2 63 <1 917 1093 990 1220 3391 history1 4 0 1 history1 0.5 7.4 20.5	4 0 54 <1 838 1021 901 1103 3226 history2 4 <1 0 history2 0.3 6.3 20.5
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 2060 2060 2060 2060 2	3 0 58 <1 979 1062 1032 1293 3112 <i>current</i> 4 3 <1 <i>current</i> 0.3 7.5 18.4 <i>current</i>	2 2 63 <1 917 1093 990 1220 3391 history1 4 0 1 history1 0.5 7.4 20.5 history1	4 0 54 <1 838 1021 901 1103 3226 history2 4 <1 0 0 history2 0.3 6.3 20.5 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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 imit/base >3 20	3 0 58 <1 979 1062 1032 1293 3112 current 4 3 <1 current 0.3 7.5 18.4	2 2 63 <1 917 1093 990 1220 3391 history1 4 0 1 history1 0.5 7.4 20.5	4 0 54 <1 838 1021 901 1103 3226 history2 4 <1 0 history2 0.3 6.3 20.5



OIL ANALYSIS REPORT



						history
VISUAL		method	limit/base	current	history1	TIIStory
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	limit/base	current	history1	history
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	13.9	13.6
GRAPHS						
Ferrous Alloys						
10 iron						
8 - chromium						
шdd						
4						
2 -						
-						
			200 C			
			ct31/23			
Apr25/22 Jul14/22	-	Sep 28/22	0ct31/23			
	S	Sep 28/22	0ct31/23			
Non-ferrous Metals	5	Sep28/72	0ct31/23			
Non-ferrous Metals	5	Sep 28/22	1538.888.99 17 17 19 19 19 19 19 19 19 19 19 19 19 19 19			
Non-ferrous Metals	S	Sep28/22	15356666 27 1619 10			
Non-ferrous Metals	S	Sep28/22				
Non-ferrous Metals	5	Sep28/22				
Non-ferrous Metals	5	Sep28/22	00000000000000000000000000000000000000			
CZUSQUAR Non-ferrous Metals						
Non-ferrous Metals	S					
Non-ferrous Metals			0et31/23			
ZUSZUAR Non-ferrous Metals				Base Number		
Non-ferrous Metals			0ct31/23	Base Number		
Non-ferrous Metals			27 27 27 29 0 10.0			
Non-ferrous Metals			27 27 27 29 0 10.0			
CZUSZUGY Non-ferrous Metals			27 27 27 29 0 10.0			
ZUSZIAH Non-ferrous Metals			27 27 27 29 0 10.0			
Non-ferrous Metals			27 27 27 29 0 10.0			
Non-ferrous Metals			0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
Non-ferrous Metals			10.0 (0,H0) Bul Jaquiny Bul Ja	Base		
Non-ferrous Metals			10.0 00531/23	Base		Sep28/22



Lab Number : 06002791 Diagnosed : 10 Nov 2023 Wayne, MI Unique Number : 10736553 Diagnostician : Wes Davis US 48184 Test Package : FLEET Contact: Belal Dgheish To discuss this sample report, contact Customer Service at 1-800-237-1369. bdgheish@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (734)714-2340 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367

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