

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 920075-205329

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 INFOR	MATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		GFL0083412	GFL0074152	GFL0054369
Sample Date		Client Info		27 Jun 2023	17 Apr 2023	23 Sep 2022
Machine Age	hrs	Client Info		25786	124448	101131
Oil Age	hrs	Client Info		25786	124448	12525
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history 1	history 2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>100	14	23	61
Chromium	ppm	ASTM D5185m	>20	<1	1	2
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	2	4	9
Lead	ppm	ASTM D5185m	>40	0	0	2
Copper	ppm	ASTM D5185m	>330	<1	0	1
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	2
Cadmium	ppm	ASTM D5185m		0	0	0
			11 11 11			
ADDITIVES		method	limit/base	current	history 1	history 2
ADDITIVES Boron	ppm	ASTM D5185m	limit/base	current 2	history 1 1	history 2 0
	ppm ppm					
Boron		ASTM D5185m	0	2	1	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	2 0	1 0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 61	1 0 58	0 0 59
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 61 <1	1 0 58 <1	0 0 59 2
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 0 61 <1 972	1 0 58 <1 944	0 0 59 2 961
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	2 0 61 <1 972 1071	1 0 58 <1 944 1068	0 0 59 2 961 1056
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	2 0 61 <1 972 1071 1064	1 0 58 <1 944 1068 988	0 0 59 2 961 1056 1011
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	2 0 61 <1 972 1071 1064 1304	1 0 58 <1 944 1068 988 1243	0 0 59 2 961 1056 1011 1213
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	2 0 61 <1 972 1071 1064 1304 3816	1 0 58 <1 944 1068 988 1243 3324	0 0 59 2 961 1056 1011 1213 3165
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	2 0 61 <1 972 1071 1064 1304 3816 current	1 0 58 <1 944 1068 988 1243 3324 history 1	0 0 59 2 961 1056 1011 1213 3165 history 2
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	2 0 61 <1 972 1071 1064 1304 3816 current 3	1 0 58 <1 944 1068 988 1243 3324 history 1 4	0 0 59 2 961 1056 1011 1213 3165 history 2 9
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 >25	2 0 61 <1 972 1071 1064 1304 3816 <u>current</u> 3 3	1 0 58 <1 944 1068 988 1243 3324 history 1 4 1	0 0 59 2 961 1056 1011 1213 3165 history 2 9 5
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 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25	2 0 61 <1 972 1071 1064 1304 3816 current 3 3 6	1 0 58 <1 944 1068 988 1243 3324 history 1 4 1 13	0 0 59 2 961 1056 1011 1213 3165 history 2 9 5 24
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 limit/base >25	2 0 61 <1 972 1071 1064 1304 3816 <u>current</u> 3 3 6 <u>current</u>	1 0 58 <1 944 1068 988 1243 3324 history 1 4 1 13 history 1	0 0 59 2 961 1056 1011 1213 3165 history 2 9 5 24 24 history 2
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 >25 >20 limit/base >3	2 0 61 <1 972 1071 1064 1304 3816 <u>current</u> 3 3 6 <u>current</u> 0.8	1 0 58 <1 944 1068 988 1243 3324 history 1 4 1 13 history 1 1	0 0 59 2 961 1056 1011 1213 3165 history 2 9 5 24 history 2 1.4
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> >25 >20 <i>limit/base</i> >3 >20	2 0 61 <1 972 1071 1064 1304 3816 <i>current</i> 3 3 6 <i>current</i> 0.8 9.2	1 0 58 <1 944 1068 988 1243 3324 history 1 4 1 13 history 1 1 9.4	0 0 59 2 961 1056 1011 1213 3165 history 2 9 5 24 9 5 24 history 2 1.4 11.3
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 >25 imit/base >3 >20	2 0 61 <1 972 1071 1064 1304 3816 <u>current</u> 3 3 6 <u>current</u> 0.8 9.2 21.2	1 0 58 <1 944 1068 988 1243 3324 history 1 4 1 13 history 1 1 9.4 21.5	0 0 59 2 961 1056 1011 1213 3165 history 2 9 5 24 history 2 1.4 1.3 23.3
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 ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 2260 225 220 220 imit/base >3 >20 >30 3 imit/base	2 0 61 <1 972 1071 1064 1304 3816 current 3 3 3 6 current 0.8 9.2 21.2 current	1 0 58 <1 944 1068 988 1243 3324 history 1 4 1 13 history 1 1 9.4 21.5 history 1	0 0 59 2 961 1056 1011 1213 3165 history 2 9 5 24 history 2 1.4 11.3 23.3 history 2



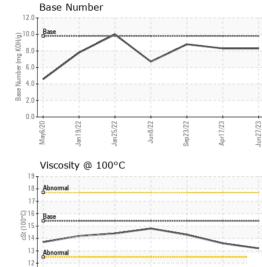
11 May6/20 -

Jan 19/22

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OIL ANALYSIS REPORT

VISUAL



Jun8/22

Sen23/22

	VISUAL		method	limit/base	current	nistory i	nistory 2				
	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				
1/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML				
Apr17/23 . Jun27/23 .	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	history 1	history 2				
	Visc @ 100°C	cSt	ASTM D445	15.4	13.2	13.6	14.3				
	GRAPHS										
	Ferrous Alloys										
	70 iron		1 1								
Apr17/23	60 - chromium	1									
	50	1	$\langle \rangle$								
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	⁻ 30		\sim								
	20										
	10										
		CRARKEN CONTRACTOR									
	May6/20 Jan 19/22 Jan 25/22	Jun8/22	Sep 23/22 Apr 17/23	Jun27/23							
	Janj	ηη	Sep	runf							
	Non-ferrous Meta	ls									
	10 copper										
	8 - testeresting lead										
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	May6/20 - Jan 19,22 - Jan 25,22 -	Jun8/22 -	Sep23/22 - Apr17/23 -	7/23 -							
	May6/20 Jan19/22 Jan25/22	վսո	Sep 23/22 Apr 17/23	Jun27/23							
	Viscosity @ 100°C Base Number										
	¹⁹			12.							
	18 - Abnormal			10.	0 Base						
	17			(B/H							
	Co ¹⁶ Base			Dy 8.	0						
	0015 314			u ge	0						
	³ 14			.8 Base Number (mg KOH/g)	0						
	13 Abnormal			Base							
	12			2.							
		- 2	3 5			2	- m				
	May6/20 Jan 19/22 Jan 25/22	Jun8/22	Sep23/22 Apr17/23	Jun27/23	May6/20 Jan 19/22	Jan 25/22 Jun 8/22	Apr17/23				
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mple No.		Receive		Jul 2023		213 East Mount					
b Number		Diagnos		Jul 2023			Houston, T				
iauo Numbor	· 10545808	Diagnos		e Davie			119 770				



Test Package : FLEET Certificate L2367 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)

Diagnostician

: Wes Davis

Unique Number : 10545808

Submitted By: TECHNICIAN ACCOUNT

US 77050

T:

F:

Contact: Saul Castillo

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