

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 728027

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.

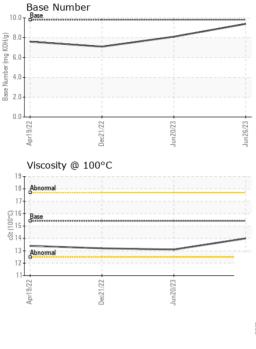
Fluid Condition

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

SAMPLE INFORI	MATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		GFL0082741	GFL0082773	GFL0063326
Sample Date		Client Info		26 Jun 2023	20 Jun 2023	21 Dec 2022
Machine Age	hrs	Client Info		10611	10562	9961
Oil Age	hrs	Client Info		600	600	600
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 METAL	S	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>110	3	10	9
Chromium	ppm	ASTM D5185m	>4	0	<1	0
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>25	<1	6	4
Lead	ppm	ASTM D5185m	>45	0	1	0
Copper	ppm	ASTM D5185m	>85	<1	1	<1
Tin	ppm	ASTM D5185m	>4	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		and the second	Parel II de la cale		In the American Market	biotom, O
ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	limit/base	3	anistory 1 3	4
	ppm ppm					
Boron		ASTM D5185m	0	3	3	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	3 0	3 4	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 58	3 4 61	4 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 58 <1	3 4 61 <1	4 0 60 0
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 <1 910	3 4 61 <1 1009	4 0 60 0 943
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 <1 910 1092	3 4 61 <1 1009 1134	4 0 60 0 943 1180
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 <1 910 1092 1025	3 4 61 <1 1009 1134 1089	4 0 60 0 943 1180 986
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 <1 910 1092 1025 1231	3 4 61 <1 1009 1134 1089 1315	4 0 60 0 943 1180 986 1274
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 0 1010 1070 1150 1270 2060	3 0 58 <1 910 1092 1025 1231 3329	3 4 61 <1 1009 1134 1089 1315 3800	4 0 60 943 1180 986 1274 3275
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	3 0 58 <1 910 1092 1025 1231 3329 current	3 4 61 <1 1009 1134 1089 1315 3800 history 1	4 0 60 943 1180 986 1274 3275 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 method	0 0 60 1010 1070 1150 1270 2060	3 0 58 <1 910 1092 1025 1231 3329 current 2	3 4 61 <1 1009 1134 1089 1315 3800 history 1 3	4 0 60 943 1180 986 1274 3275 history 2 2
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 method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 Limit/base >30	3 0 58 <1 910 1092 1025 1231 3329 current 2 0	3 4 61 <1 1009 1134 1089 1315 3800 history 1 3 2	4 0 60 943 1180 986 1274 3275 history 2 2 <1
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 limit/base >30	3 0 58 <1 910 1092 1025 1231 3329 current 2 0 3	3 4 61 <1 1009 1134 1089 1315 3800 history 1 3 2 6	4 0 60 0 943 1180 986 1274 3275 history 2 2 2 <1 4
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 >20 limit/base	3 0 58 <1 910 1092 1025 1231 3329 current 2 0 3 3	3 4 61 <1 1009 1134 1089 1315 3800 history 1 3 2 6 history 1	4 0 60 943 1180 986 1274 3275 history 2 2 <1 4 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 60 0 1010 1070 1150 1270 2060 limit/base >30 >20 limit/base >33	3 0 58 <1 910 1092 1025 1231 3329 <u>current</u> 2 0 3 <u>current</u> 0.1	3 4 61 <1 1009 1134 1089 1315 3800 history 1 3 2 6 history 1 0.2	4 0 60 943 1180 986 1274 3275 history 2 2 <1 4 history 2 0.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc 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 imit/base >30 220 imit/base >3 >20	3 0 58 <1 910 1092 1025 1231 3329 current 2 0 3 current 0.1 5.4	3 4 61 <1 1009 1134 1089 1315 3800 history 1 3 2 6 history 1 0.2 8.2	4 0 60 943 1180 986 1274 3275 history 2 2 <1 4 history 2 0.6 10.6
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 >30 imit/base >3 20	3 0 58 <1 910 1092 1025 1231 3329 current 2 0 3 3 current 0.1 5.4 18.2	3 4 61 <1 1009 1134 1089 1315 3800 history 1 3 2 6 <u>history 1</u> 0.2 8.2 19.1	4 0 60 943 1180 986 1274 3275 history 2 2 <1 4 history 2 0.6 10.6 23.1
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 D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 2060 2060 200 200 200 200 20	3 0 58 <1 910 1092 1025 1231 3329 current 2 0 3 current 0.1 5.4 18.2 current	3 4 61 <1 1009 1134 1089 1315 3800 history 1 3 2 6 history 1 0.2 8.2 19.1 history 1	4 0 60 943 1180 986 1274 3275 history 2 2 <1 4 history 2 0.6 10.6 23.1 history 2



OIL ANALYSIS REPORT



		VISUAL		method	limit/base	current	history 1	history 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	
60.00	Jun20/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
-	unn inn	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
		Free Water	scalar	*Visual		NEG	NEG	NEG
		FLUID PROPI	ERTIES	method	limit/base	current	history 1	history 2
		Visc @ 100°C	cSt	ASTM D445	15.4	14.0	13.1	13.2
		GRAPHS						
		Ferrous Alloys						
600		iron		_				
C	27/07UDC	8-						
		Ē 6-						
		d						
					1			
		2						
		¹ 23 [−] 0		123	/23			
		Apr19/22 Dec21/22		Jun 20/23	Jun26/23			
		Non-ferrous Meta	als					
		10 copper						
		8 - lead						
		6						
		u dd						
		4						
		2						
			AND DESCRIPTION OF THE OWNER OF T					
		Apr19/22		un 20/23	un 26/23			
		ح Viscosity @ 100°	c	ĥ	٦٢			
		viscosity @ 100	C			Paco Numbor		
		¹⁹	с		10.0	Base Number		
		19 18 - Abnormal				Base Number		
		19 18 Abnormal 17				Base Number		
		19 18 Abnormal 17				Base Number		
		19 18 - Abnormal 17 -				Base Number		
		Abnormal 17 Gold Base 3 14 14			(6, HO) (6, HO) (6, O) (6, O)	Base Number		
		Abnormal Abnormal 17 6 16 8 8 8 17 17 16 15 15 14			0.8 0.0 0.0 KOH(8) pec	Base Number		
		Abnormal Abnormal Base Base Abnormal Abnormal Abnormal			6.0 buy KOH(0) Base Miniber Base View Base 2.0 0.0	Base		
		Abnormal Abnormal Base Base Abnormal Abnormal Abnormal		20/23	6.0 buy KOH(0) Base Miniber Base View Base 2.0 0.0	Base	21/22	
		Abnormal Base 3 14 13 Abnormal		Jun20/23	(B)(HO) (B)(HO	Base	Dec21/22 Jun20/23	
	Laboratory Sample No. Lab Number	Abnormal Abnormal Base Confission Base Confission	501 Madia Received Diagnose	son Ave., Ca 1 : 29 J ed : 02 J	ry, NC 27513 Jun 2023 Jun 2023	Base	Environmental -	465 - Pontia 888 Baldwi Pontiac, M
	Laboratory Sample No. Lab Number Unique Number Test Package	Abnormal Abnormal Base Abnormal Abnormal County Base County Co	501 Madia Received Diagnost	son Ave., Ca 1 : 29 c ed : 02 c ician : Wes	(0,400) (0,	Base	Environmental - Contact: F	465 - Pontia 888 Baldwi

Submitted By: Ricky Matthews

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