

OIL ANALYSIS REPORT

Sample Rating Trend



814021 Component Diesel Engine Fluid

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

SAMPLE INFORMATION method

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Machine Id

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		GFL0078302	GFL0078312	GFL0078298
Sample Date		Client Info		20 May 2024	16 Apr 2024	12 Feb 2024
Machine Age	hrs	Client Info		801	608	151
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				NORMAL	ATTENTION	ABNORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	0.4
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	11	43	21
Chromium	ppm	ASTM D5185m	>20	1	2	1
Nickel	ppm	ASTM D5185m	>5	3	12	3
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	2	<1	<1
Aluminum	ppm	ASTM D5185m	>20	2	7	5
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	57	199	11
Tin	ppm	ASTM D5185m	>15	2	4	3
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		<1	<1	<1
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 10	history1 160	history2 425
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 0 0	current 10 0	history1 160 2	history2 425 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60	current 10 0 70	history1 160 2 123	history2 425 0 125
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0	current 10 0 70 1	history1 160 2 123 6	history2 425 0 125 5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010	current 10 0 70 1 938	history1 160 2 123 6 687	history2 425 0 125 5 656
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 60 0 1010 1070	Current 10 0 70 1 938 1141	history1 160 2 123 6 687 1398	history2 425 0 125 5 656 1379
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 60 0 1010 1070 1150	current 10 0 70 1 938 1141 954	history1 160 2 123 6 687 1398 667	history2 425 0 125 5 656 1379 686
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 60 0 1010 1070 1150 1270	current 10 0 70 1 938 1141 954 1235	history1 160 2 123 6 687 1398 667 837	history2 425 0 125 5 656 1379 686 779
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 0 60 0 1010 1070 1150 1270 2060	current 10 0 70 1 938 1141 954 1235 3217	history1 160 2 123 6 687 1398 667 837 2271	history2 425 0 125 5 656 1379 686 779 2676
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 60 0 1010 1070 1150 1270 2060	current 10 0 70 1 938 1141 954 1235 3217 current	history1 160 2 123 6 687 1398 667 837 2271 history1	history2 425 0 125 5 656 1379 686 779 2676 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	method ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current 10 0 70 1 938 1141 954 1235 3217 current 10	history1 160 2 123 6 687 1398 667 837 2271 history1 68	history2 425 0 125 5 656 1379 686 779 2676 history2 88
ADDITIVES Boron Barium Molybdenum Magnese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	method ASTM D5185m	limit/base 0 0 0 0 0 1010 1070 1150 1270 2060 limit/base >25	current 10 0 70 1 938 1141 954 1235 3217 current 10 2	history1 160 2 123 6 687 1398 667 837 2271 history1 68 4	history2 425 0 125 5 656 1379 686 779 2676 history2 88 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 4 ppm 4 ppm 2 ppm 4 ppm 4	method ASTM D5185m	limit/base 0 60 1010 1070 1150 1270 2060 >25 >25	current 10 0 70 1 938 1141 954 1235 3217 current 10 2 3	history1 160 2 123 6 687 1398 667 837 2271 history1 68 4 7	history2 425 0 125 5 656 1379 686 779 2676 history2 88 0 7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 0 60 1010 1070 1150 1270 2060 limit/base 220 limit/base	current 10 0 70 1 938 1141 954 1235 3217 current 10 2 3 current	history1 160 2 123 6 687 1398 667 837 2271 history1 68 4 7 history1	history2 425 0 125 5 656 1379 686 779 2676 history2 ▲ 88 0 7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm i ppm i	method ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 imit/base >4	current 10 0 70 1 938 1141 954 1235 3217 current 10 2 3 current 0.7	history1 160 2 123 6 687 1398 667 837 2271 history1 68 4 7 history1 0.5	history2 425 0 125 5 656 1379 686 779 2676 history2 88 0 7 history2 0.1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ррт ррт ррт ррт ррт ррт ррт ррт	method ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 limit/base >20	current 10 0 70 1 938 1141 954 1235 3217 current 10 2 3 current 0.7 12.8	history1 160 2 123 6 687 1398 667 837 2271 history1 68 4 7 history1 0.5 10.6	 history2 425 0 125 5 656 1379 686 779 2676 history2 88 0 7 history2 0.1 6.9
ADDITIVES 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 TS ppm ppm ppm ppm ppm 4bs/1mm	method ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 limit/base >20 >30	current 10 0 70 1 938 1141 954 1235 3217 current 10 2 3 current 0.7 12.8 27.3	history1 160 2 123 6 687 1398 667 837 2271 history1 68 4 7 history1 0.5 10.6 24.5	history2 425 0 125 5 656 1379 686 779 2676 history2 history2 0 7 0.1 6.9 26.0
ADDITIVES 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	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415 method	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 limit/base >4 >20 >30	current 10 0 70 1 938 1141 954 1235 3217 current 10 2 3 current 0.7 12.8 27.3 current	history1 160 2 123 6 687 1398 667 837 2271 history1 68 4 7 history1 0.5 10.6 24.5 history1	history2 425 0 125 5 656 1379 686 779 2676 history2 • 88 0 7 • 0.1 6.9 26.0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm Abs/cm Abs/.1mm	method ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7415 method *ASTM D7414	limit/base 0 0 60 0 1010 1070 1150 2260 limit/base >20 limit/base >20 limit/base >20 limit/base >20 limit/base >20 limit/base >20 20 limit/base >20 >20 >20	current 10 0 70 1 938 1141 954 1235 3217 current 10 2 3 current 0.7 12.8 27.3 current	history1 160 2 123 6 687 1398 667 837 2271 history1 68 4 7 history1 0.5 10.6 24.5 history1 23.1	history2 425 0 125 5 656 1379 686 779 2676 history2 ▲ 88 0 7 history2 0.1 6.9 26.0 history2



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Feb12/24

Abno

OIL ANALYSIS REPORT



Apr16/24

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	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.2	0.0	9.4
GRAPHS						





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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)

Certificate 12367

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