

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **428039-402371** Component

Diesel Engine

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

SAMPLE INFORMATION method





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 Number Sample Date Machine Age	hrs	Client Info Client Info Client Info		GFL0103502 26 Dec 2023 14525	GFL0100435 06 Dec 2023 14412	GFL0071668 16 Nov 2023 14279
Oil Age Oil Changed Sample Status	nrs	Client Info		Changed NORMAL	920 N/A NORMAL	/8/ N/A NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
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	7	6	3
Chromium	ppm	ASTM D5185m	>20	<1	0	0
Nickel	ppm	ASTM D5185m	>5	<1	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	2	1	<1
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 4	history1 2	history2 3
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 0 0	current 4 0	history1 2 0	history2 3 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60	current 4 0 64	history1 2 0 61	history2 3 0 62
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 4 0 64 <1	history1 2 0 61 0	history2 3 0 62 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010	current 4 0 64 <1 954	history1 2 0 61 0 921	history2 3 0 62 0 917
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 4 0 64 <1 954 1006	history1 2 0 61 0 921 1011	history2 3 0 62 0 917 1049
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 4 0 64 <1 954 1006 1050	history1 2 0 61 0 921 1011 934	history2 3 0 62 0 917 1049 999
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185m	limit/base 0 60 0 1010 1070 1150 1270	current 4 0 64 <1 954 1006 1050 1291	history1 2 0 61 0 921 1011 934 1180	history2 3 0 62 0 917 1049 999 1198
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 4 0 64 <1 954 1006 1050 1291 2912	history1 2 0 61 0 921 1011 934 1180 2859	history2 3 0 62 0 917 1049 999 1198 2903
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 4 0 64 <1 954 1006 1050 1291 2912 current	history1 2 0 61 0 921 1011 934 1180 2859 history1	history2 3 0 62 0 917 1049 999 1198 2903 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current 4 0 64 <1 954 1006 1050 1291 2912 current 4	history1 2 0 61 0 921 1011 934 1180 2859 history1 4	history2 3 0 62 0 917 1049 999 1198 2903 history2 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	methodASTM D5185mASTM D5185m	limit/base 0 0 0 1010 1070 1150 1270 2060 limit/base >25	current 4 0 64 <1 954 1006 1050 1291 2912 current 4 4	history1 2 0 61 0 921 1011 934 1180 2859 history1 4 3	history2 3 0 62 0 917 1049 999 1198 2903 history2 4 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	method ASTM D5185m	limit/base 0 0 0 1010 1010 1150 1270 2060 limit/base >25	current 4 0 64 <1 954 1006 1050 1291 2912 current 4 4 4 4 4 4 4 4 4 4 4 4	history1 2 0 61 0 921 1011 934 1180 2859 history1 4 3 0	history2 3 0 62 0 917 1049 999 1198 2903 history2 4 4 4 4 4 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm	method ASTM D5185m	limit/base 0 0 0 1010 1070 1150 1270 2060 limit/base >20 limit/base	current 4 0 64 <1 954 1006 1050 1291 2912 current 4 4 4 4 4 4 5 current	history1 2 0 61 0 921 1011 934 1180 2859 history1 4 3 0 history1	history2 3 0 62 0 917 1049 999 1198 2903 history2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 5 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	method ASTM D5185m	limit/base 0 0 0 1010 1070 1150 1270 2060 limit/base >25 -20 limit/base	current 4 0 64 <1 954 1006 1050 1291 2912 current 4 4 4 0 0.3	history1 2 0 61 0 921 1011 934 1180 2859 history1 4 3 0 history1 0 0.3	history2 3 0 62 0 917 1049 999 1198 2903 history2 4 4 4 4 0 0.2
ADDITIVES 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	method ASTM D5185m	limit/base 0 0 0 1010 1070 1150 1270 2060 limit/base >25 -20 limit/base >4 >20	current 4 0 64 <1 954 1006 1050 1291 2912 current 4 4 4 0.3 8.7	history1 2 0 61 0 921 1011 934 1180 2859 history1 4 3 0 history1 0.3 7.8	history2 3 0 62 0 917 1049 999 1198 2903 history2 4 4 4 0.2 6.8
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 t ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7624	limit/base 0 0 1010 1010 1070 1150 1270 2060 limit/base >25 limit/base >20 limit/base >4 >20 >30	current 4 0 64 <1 954 1006 1050 1291 2912 current 4 4 4 0.3 8.7 19.7	history1 2 0 61 0 921 1011 934 1180 2859 history1 4 3 0 history1 0 7.8 19.0	history2 3 0 62 0 917 1049 999 1198 2903 history2 4 4 4 0.2 6.8 18.4
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	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 limit/base >20 30	current 4 0 64 <1 954 1006 1050 1291 2912 current 4 4 0.3 8.7 19.7 current	history1 2 0 61 0 921 1011 934 1180 2859 history1 4 3 0 history1 0.3 7.8 19.0 history1	history2 3 0 62 0 917 1049 999 1198 2903 history2 4 4 4 0.2 6.8 18.4
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 ppm	method ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7414	<pre>limit/base 0 0 60 1010 1070 1150 1270 2060 2060 225 20 limit/base >20 limit/base >30 limit/base</pre>	current 4 0 64 <1 954 1006 1050 1291 2912 current 4 4 0.3 8.7 19.7 current 16.2	history1 2 0 61 0 921 1011 934 1180 2859 history1 4 3 0 history1 0.3 7.8 19.0 history1 15.4	history2 3 0 62 0 917 1049 999 1198 2903 history2 4 4 4 0.2 6.8 18.4 history2 14.5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD Oxidation Base Number (BN)	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414 ASTM D2896	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 limit/base >30 >25 9.8	current 4 0 64 <1 954 1006 1050 1291 2912 current 4 4 0.3 8.7 19.7 current 16.2 6.2	history1 2 0 61 0 921 1011 934 1180 2859 history1 4 3 0 history1 0.3 7.8 19.0 history1 15.4 7.2	history2 3 0 62 0 917 1049 999 1198 2903 history2 4 4 4 0.2 6.8 18.4 history2 14.5 7.7



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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	13.4	13.4	13.3
GRAPHS						





 Certificate L2367
 Test Package
 : FLEET
 Control

 To discuss this sample report, contact Customer Service at 1-800-237-1369.
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 * - 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)
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