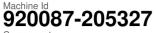


OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



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		GFL0083487	GFL0083415	GFL0054363
Sample Date		Client Info		31 Jul 2023	15 Jun 2023	15 Feb 2023
Machine Age	mls	Client Info		12090	152825	8523
Oil Age	mls	Client Info		0	152825	8523
Oil Changed		Client Info		Not Changd	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	95	31	13
Chromium	ppm	ASTM D5185m	>20	7	2	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	2	0
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	2	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
C a directoriza	000	ACTM DE10Em		0	0	0
Cadmium	ppm	ASTM D5185m		U	0	0
ADDITIVES	ppin	method	limit/base	current	history1	history2
	ppm		limit/base		-	-
ADDITIVES		method ASTM D5185m		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 3	history1 26	history2 0
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0 0 60	current 3 0	history1 26 0	history2 0 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 3 0 65	history1 26 0 45	history2 0 0 60
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	ourrent 3 0 65 2	history1 26 0 45 <1	history2 0 0 60 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 3 0 65 2 1061	history1 26 0 45 <1 698	history2 0 0 60 <1 881
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current 3 0 65 2 1061 1318	history1 26 0 45 <1 698 1503	history2 0 0 60 <1 881 1075
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	current 3 0 65 2 1061 1318 1099	history1 26 0 45 <1 698 1503 890	history2 0 0 60 <1 881 1075 989
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current 3 0 65 2 1061 1318 1099 1386	history1 26 0 45 <1 698 1503 890 1094	history2 0 0 60 <1 881 1075 989 1187
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	0 0 60 1010 1070 1150 1270 2060	Current 3 0 65 2 1061 1318 1099 1386 3755	history1 26 0 45 <1 698 1503 890 1094 3280	history2 0 0 60 <1 881 1075 989 1187 2973
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	0 0 60 1010 1070 1150 1270 2060	current 3 0 65 2 1061 1318 1099 1386 3755 current	history1 26 0 45 <1 698 1503 890 1094 3280 history1	history2 0 0 60 <1 881 1075 989 1187 2973 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	0 0 60 1010 1070 1150 1270 2060 imit/base >25	current 3 0 65 2 1061 1318 1099 1386 3755 current 12	history1 26 0 45 <1 698 1503 890 1094 3280 history1 7	history2 0 0 60 <1 881 1075 989 1187 2973 history2 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 imit/base >25	current 3 0 65 2 1061 1318 1099 1386 3755 current 12 6	history1 26 0 45 <1 698 1503 890 1094 3280 history1 7 2	history2 0 0 60 <1 881 1075 989 1187 2973 history2 2 0 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	Current 3 0 65 2 1061 1318 1099 1386 3755 current 12 6 3	history1 26 0 45 <1 698 1503 890 1094 3280 history1 7 2 2	history2 0 0 60 <1 881 1075 989 1187 2973 history2 2 0 3
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	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Imit/base >20	current 3 0 65 2 1061 1318 1099 1386 3755 current 12 6 3 current	history1 26 0 45 <1 698 1503 890 1094 3280 history1 7 2 2 history1	history2 0 0 60 <1 881 1075 989 1187 2973 history2 2 0 3 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Imit/base >20	current 3 0 65 2 1061 1318 1099 1386 3755 current 12 6 3 current 1	history1 26 0 45 <1 698 1503 890 1094 3280 history1 7 2 history1 0.6	history2 0 0 60 <1 881 1075 989 1187 2973 history2 2 0 3 history2 0.9
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 TS ppm ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	current 3 0 65 2 1061 1318 1099 1386 3755 current 12 6 3 current 1 1 1 14.2	history1 26 0 45 <1 698 1503 890 1094 3280 history1 7 2 history1 0.6 9.7	history2 0 0 60 <1 881 1075 989 1187 2973 history2 2 0 3 history2 0.9 7.6
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	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 3 20 20 3 3 20 20 3 3 20 20 20 3 3 20 20 20 20 20 20 20 20 20 20 20 20 20	Current 3 0 65 2 1061 1318 1099 1386 3755 current 12 6 3 current 1 14.2 28.7	history1 26 0 45 <1 698 1503 890 1094 3280 history1 7 2 history1 0.6 9.7 23.9	history2 0 0 60 <1 881 1075 989 1187 2973 history2 2 0 3 history2 0.9 7.6 19.6

6.2

Base Number (BN) mg KOH/g ASTM D2896 9.8

9.1

9.8

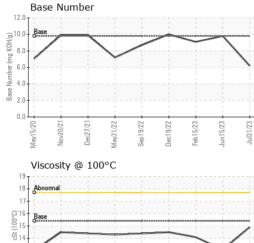


13 Abnorm 12 11 May15/20

Dec27/21 May31/22

Nov20/21

OIL ANALYSIS REPORT



					limit/base	current	history1	
		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
Sep19/22 Dec19/22	Feb15/23 Jun15/23 Jul31/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Sep	Jun Jun	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	14.9	13.1	14.1
	\sim	GRAPHS						
	×	Ferrous Alloys						
			Sep 19/22	E2	EZ			
		ZZ71EVeW Non-ferrous Metals	S	UBC13/12 Feb15/23	Jul31/23			
		Non-ferrous Metals	S					
		Non-ferrous Metals	S S S S S S S S S S S S S S S S S S S	Ueci 9/22 Feb 15/23 Jun 15/23	Jul31/23			
		Non-ferrous Metals	S S S S S S S S S S S S S S S S S S S			Base Number		
		Non-ferrous Metals	S S S S S S S S S S S S S S S S S S S		cz/tginf	T		
		Non-ferrous Metal	S S S S S S S S S S S S S S S S S S S		EZ/ EPT 7	Base		
		Non-ferrous Metal	S S S S S S S S S S S S S S S S S S S		EZ/ EPT 7	Base		
		Non-ferrous Metal	S S S S S S S S S S S S S S S S S S S		EZ/ EPP 7	Base		
		Non-ferrous Metals	S S S S S S S S S S S S S S S S S S S		EZ/ EPP 7	Base		
		Non-ferrous Metals	S S S S S S S S S S S S S S S S S S S		EZ/[EInn (0)HOX Bull 200 (0)HOX BULL 200 (0)HO	Base		
		Non-ferrous Metals	S S S S S S S S S S S S S S S S S S S		12.0 (0)HOJ ROU BUINT 12.0 10.0 (0)HOJ ROU 10.0 10.0 (0)HOJ ROU 10.0 10.0 (0)HOJ ROU 10.0 (0)HOJ ROU 10.0 (0)H	Base		
		Non-ferrous Metals	S	Feb 15/23	EZ/[EIIn] 12.0 (0)HOX Bull 36.0 2.0 0.0	Base		5/23
		Non-ferrous Metals	Sept 1972		12.0 (0)(HO)(N (0)) (0)(HO)(N (0)) (Base	May31/22 Sep 19/22 Dec 19/22	Feb15/23
	Laboratory Sample No. Lab Number Unique Number Test Package	Non-ferrous Metals	S apr 13/27/61 das	Ecosition Ave., Ca 1.17 / ed : 18 /	EZ/LEm (0)HOX Building Base Mumber CZ/LEm C CZ/LEm C CZ/LEm C	02/51/kew 12/12/02/00N GFL Envi	27161 - 27261	ast Mount Hauli

Submitted By: TECHNICIAN ACCOUNT