

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 811066

Fluid

Component Diesel Engine

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.

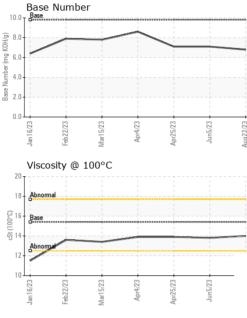
Fluid Condition

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	history1	history2
Sample Number		Client Info		GFL0089527	GFL0067940	GFL0067889
Sample Date		Client Info		22 Aug 2023	05 Jun 2023	25 Apr 2023
Machine Age	hrs	Client Info		4472	3448	3448
Oil Age	hrs	Client Info		543	3191	3191
Oil Changed		Client Info		Changed	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method	>0.0	NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	17	11	5
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	<1	<1
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	2	2	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
			11 11 11			la la tamu O
ADDITIVES		method				history2
Boron	maa					
Boron	ppm mag	ASTM D5185m	0	5	3	6
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	5 0	3 0	6 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	5 0 66	3 0 61	6 0 64
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	5 0 66 <1	3 0 61 <1	6 0 64 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	5 0 66 <1 1046	3 0 61 <1 978	6 0 64 <1 1059
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	5 0 66 <1 1046 1167	3 0 61 <1 978 1120	6 0 64 <1 1059 1180
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	5 0 66 <1 1046 1167 1071	3 0 61 <1 978 1120 944	6 0 64 <1 1059 1180 1072
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	5 0 66 <1 1046 1167 1071 1361	3 0 61 <1 978 1120 944 1251	6 0 64 <1 1059 1180 1072 1349
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	5 0 66 <1 1046 1167 1071 1361 3412	3 0 61 <1 978 1120 944 1251 3217	6 0 64 <1 1059 1180 1072 1349 3513
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	5 0 66 <1 1046 1167 1071 1361 3412 current	3 0 61 <1 978 1120 944 1251 3217 history1	6 0 64 <1 1059 1180 1072 1349 3513 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm	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	5 0 66 <1 1046 1167 1071 1361 3412 current 5	3 0 61 <1 978 1120 944 1251 3217 history1 3	6 0 64 <1 1059 1180 1072 1349 3513 history2 3
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	5 0 66 <1 1046 1167 1071 1361 3412 current	3 0 61 <1 978 1120 944 1251 3217 history1	6 0 64 <1 1059 1180 1072 1349 3513 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	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	5 0 66 <1 1046 1167 1071 1361 3412 current 5	3 0 61 <1 978 1120 944 1251 3217 history1 3	6 0 64 <1 1059 1180 1072 1349 3513 history2 3
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 0 1010 1070 1150 1270 2060 kimit/base >25	5 0 66 <1 1046 1167 1071 1361 3412 <u>current</u> 5 4	3 0 61 <1 978 1120 944 1251 3217 history1 3 3 3	6 0 64 <1 1059 1180 1072 1349 3513 history2 3 2
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 >25 >20	5 0 66 <1 1046 1167 1071 1361 3412 current 5 4 4 <1	3 0 61 <1 978 1120 944 1251 3217 history1 3 3 3 0	6 0 64 <1 1059 1180 1072 1349 3513 history2 3 2 0
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 2060 225 >25 >20 Limit/base >20	5 0 66 <1 1046 1167 1071 1361 3412 current 5 4 <1 current	3 0 61 <1 978 1120 944 1251 3217 history1 3 3 0 bistory1	6 0 64 <1 1059 1180 1072 1349 3513 history2 3 2 0 history2
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 2060 225 >25 >20 Limit/base >20	5 0 66 <1 1046 1167 1071 1361 3412 current 5 4 <1 current 0.7	3 0 61 <1 978 1120 944 1251 3217 history1 3 3 0 history1 0.5	6 0 64 <1 1059 1180 1072 1349 3513 history2 3 2 0 history2 0.3
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> >4 >20	5 0 66 <1 1046 1167 1071 1361 3412 <u>current</u> 5 4 <1 <u>current</u> 0.7 8.6	3 0 61 <1 978 1120 944 1251 3217 history1 3 3 0 history1 0.5 8.2	6 0 64 <1 1059 1180 1072 1349 3513 history2 3 2 0 history2 0.3 6.1
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 ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	5 0 66 <1 1046 1167 1071 3412 current 5 4 <1 current 0.7 8.6 20.6 current	3 0 61 <1 978 1120 944 1251 3217 history1 3 3 3 0 history1 0.5 8.2 20.3 history1	6 0 64 <1 1059 1180 1072 1349 3513 history2 3 2 0 history2 0.3 6.1 17.0 history2
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 2060 225 20 225 20 imit/base >4 20 20	5 0 66 <1 1046 1167 1071 1361 3412 <u>current</u> 5 4 <1 <u>current</u> 0.7 8.6 20.6	3 0 61 <1 978 1120 944 1251 3217 history1 3 3 0 history1 0.5 8.2 20.3	6 0 64 <1 1059 1180 1072 1349 3513 history2 3 2 0 history2 0.3 6.1 17.0



OIL ANALYSIS REPORT



								a sector way of		history?
	1	UAL		method	limit/base	current		history1		history2
		Metal	scalar	*Visual	NONE	NONE	N	ONE	ľ	NONE
	Yellov	v Metal	scalar	*Visual	NONE	NONE	N	ONE	1	NONE
	Precip	pitate	scalar	*Visual	NONE	NONE	N	ONE	ľ	NONE
	Silt		scalar	*Visual	NONE	NONE	N	ONE	1	NONE
	Debris	S	scalar	*Visual	NONE	NONE	N	ONE	١	NONE
	Sand/	'Dirt	scalar	*Visual	NONE	NONE	N	ONE	1	NONE
. 22/cunr	Appea Odor	arance	scalar	*Visual	NORML	NORML	N	ORML	ľ	NORML
ur ,	Odor		scalar	*Visual	NORML	NORML	N	ORML	1	NORML
	Emuls	sified Water	scalar	*Visual	>0.2	NEG	N	EG	ľ	NEG
	Free \	Water	scalar	*Visual		NEG	N	EG	ľ	NEG
	FLU	JID PROPE	ERTIES	method	limit/base	current	l	history1		history2
	Visc @	@ 100°C	cSt	ASTM D445	15.4	14.0	13	3.8	1	13.9
	GR	APHS								
	Ferr	ous Alloys								
0/73	30 -	iron chromium								
62/cunc	25 -	mmm nickel								
	20									
	20 ع 15	\mathbf{X}			-					
	10									
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	0	3 3	2	13 13						
			Apr4/23 -							
	Jan16/23	Feb22/23 Mar15/23	Apr4/23	Apr25/23	Aug22/23					
	Jan 16/23									
	Non	-ferrous Meta								
	Jan 16/23	-ferrous Meta								
	Non	-ferrous Meta								
	Non	-ferrous Meta								
	Non 25 20 Ed 15	-ferrous Meta								
	Non	-ferrous Meta								
	Non 25 20 Ed 15	-ferrous Meta								
	Non 25 20 Ea 15 10	-ferrous Meta	lls	Api25/23	Aug22/23					
	Non 20 Eg 15 10 5 0	-ferrous Meta	lls	Apr25/23	Aug22/23					
	Non	-ferrous Meta		Apr25/23	Aug22/23					
	Non	-ferrous Meta	lls	Apr25/23	Aug22/23	Base Num	ner			
	Non	-ferrous Meta Lead tin Warl2V33 Warl2V3 Warl2V33 Warl2V3 Wa	lls	Apr25/23	Aug22/23 H Aug22/23	Base Numb	per			
	Non	-ferrous Meta Lead tin Warl2V33 Warl2V3 Warl2V33 Warl2V3 Wa	lls	Apr25/23	Aug22/23	Base Numb	per			
	Non 30 25 20 4 10 5 0 5 5 0 5 5 0 5 5 0 5 5 5 5 5 5 5	-ferrous Meta Lead tin Warl2V33 Warl2V3 W	lls	Apr25/23	Aug22/23	Base Numb	ber			
	Non 30 20 10 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 15 0 5 0 15 0 10 10 10 10 10 10 10 10 10	-ferrous Meta Lead tin Warl2V33 Warl2V3 W	lls	Apr25/23	Aug22/23	Base Numb	ber			
	Non 30 20 10 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 15 0 5 0 15 0 10 10 10 10 10 10 10 10 10	-ferrous Meta Lead tin Warl2V33 Warl2V3 W	lls	Apr25/23	Aug22/23	Base Numb	ber			
	Non 30 25 20 4 15 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 15 15 15 15 15 15 15 15 15 15	-ferrous Meta	lls	Apr25/23	Aug22/23	Base Numb	ber			
	Non 30 20 10 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 15 0 5 0 15 0 10 10 10 10 10 10 10 10 10	-ferrous Meta	lls	Apr25/23	Aug22/23 H Aug2/22/23 H Aug22/23	Base Numb	Der			
	Non 30 25 20 10 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0	-ferrous Meta	lls	Apr25/23	Aug22/23	Base Numb	Der			
	Non 30 25 20 10 5 0 EZigi uer Visc 19 18 Abno 12 10 14 13 14 14 15 10 15 10 15 15 16 16 16 16 16 16 16 16 16 16	-ferrous Meta Meta tin tin tin tin tin tin tin tin tin tin	lls	Apr25/23 Apr	Aug22223 Aug222 Aug2223 Aug222 Aug222 Aug222 Aug222 Aug222 Aug222 Aug222 Aug222 Aug222 Aug222 Aug222 Aug222 Aug222 Aug222 Aug22 Aug222 Aug222 Aug22 Au	Base				
	Non 30 25 20 10 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0	-ferrous Meta	lls	Apr25/23	400 200 888 200 800 100 100 100 100 100 100 100 100 1	Base Numl Base	Der.	April23	Apr25/23	Jun5/23



 Certificate L2367
 Test Package
 : FLEET

 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)

Received

Diagnosed

Diagnostician

: 24 Aug 2023

: 25 Aug 2023

: Wes Davis

: GFL0089527

: 05934123

Sample No.

Lab Number

Unique Number : 10619394

Submitted By: TECHNICIAN ACCOUNT

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US 23112

T:

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