

OIL ANALYSIS REPORT

Sample Rating Trend





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.

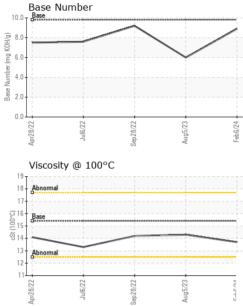
Fluid Condition

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		GFL0110034	GFL0085062	GFL0052102
Sample Date		Client Info		06 Feb 2024	05 Aug 2023	28 Sep 2022
Machine Age	hrs	Client Info		25043	25009	22370
Oil Age	hrs	Client Info		600	2639	22370
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	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		>200	21	22	13
Chromium	ppm	ASTM D5185m		<1	1	1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>30	13	6	3
Lead	ppm	ASTM D5185m	>30	<1	0	0
Copper	ppm	ASTM D5185m		1	3	2
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m	210	0	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES	pp	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	<1	0	5
D 1			0		0	0
Barium	ppm	ASTM D5185m	0	<1	0	2
Molybdenum	ppm	ASTM D5185m	60	54	61	61
Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m	60 0	54 <1	61 <1	61 <1
Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010	54 <1 839	61 <1 995	61 <1 885
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070	54 <1 839 995	61 <1 995 1135	61 <1 885 1068
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150	54 <1 839 995 973	61 <1 995 1135 1013	61 <1 885 1068 974
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270	54 <1 839 995 973 1135	61 <1 995 1135 1013 1354	61 <1 885 1068 974 1198
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	60 0 1010 1070 1150 1270 2060	54 <1 839 995 973 1135 3172	61 <1 995 1135 1013 1354 3221	61 <1 885 1068 974 1198 3222
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	60 0 1010 1070 1150 1270 2060 limit/base	54 <1 839 995 973 1135 3172 current	61 <1 995 1135 1013 1354 3221 history1	61 <1 885 1068 974 1198 3222 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060	54 <1 839 995 973 1135 3172 current 5	61 <1 995 1135 1013 1354 3221 history1 3	61 <1 885 1068 974 1198 3222 history2 4
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >30	54 <1 839 995 973 1135 3172 current 5 15	61 <1 995 1135 1013 1354 3221 history1 3 2	61 <1 885 1068 974 1198 3222 history2 4 25
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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	60 0 1010 1070 1150 1270 2060 limit/base >30	54 <1 839 995 973 1135 3172 current 5 15 3	61 <1 995 1135 1013 1354 3221 history1 3 2 1	61 <1 885 1068 974 1198 3222 history2 4 25 1
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >20 limit/base	54 <1 839 995 973 1135 3172 current 5 15 3 3 current	61 <1 995 1135 1013 1354 3221 history1 3 2 1 history1	61 <1 885 1068 974 1198 3222 history2 4 25 1 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >30 >20 limit/base >3	54 <1 839 995 973 1135 3172 current 5 15 3 3 current 0.8	61 <1 995 1135 1013 1354 3221 history1 3 2 1 1 history1 1.1	61 <1 885 1068 974 1198 3222 history2 4 25 1 1 history2 0.6
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >30 >20 limit/base >3 >20	54 <1 839 995 973 1135 3172 current 5 15 3 3 current 0.8 8.3	61 <1 995 1135 1013 1354 3221 history1 3 2 1 1 history1 1.1 1.1 10.1	61 <1 885 1068 974 1198 3222 history2 4 25 1 history2 0.6 8.9
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >30 >20 limit/base >3	54 <1 839 995 973 1135 3172 current 5 15 3 3 current 0.8	61 <1 995 1135 1013 1354 3221 history1 3 2 1 1 history1 1.1	61 <1 885 1068 974 1198 3222 history2 4 25 1 1 history2 0.6
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	60 0 1010 1070 1150 1270 2060 limit/base >30 >20 limit/base >3 >20	54 <1 839 995 973 1135 3172 current 5 15 3 3 current 0.8 8.3	61 <1 995 1135 1013 1354 3221 history1 3 2 1 1 history1 1.1 1.1 10.1	61 <1 885 1068 974 1198 3222 history2 4 25 1 history2 0.6 8.9
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	60 0 1010 1070 1150 1270 2060 imit/base >30 >20 imit/base >3 >20 >30	54 <1 839 995 973 1135 3172 current 5 15 3 current 0.8 8.3 19.5	61 <1 995 1135 1013 1354 3221 history1 3 2 1 history1 1.1 1.1 10.1 22.4	61 <1 885 1068 974 1198 3222 history2 4 25 1 history2 0.6 8.9 21.2



OIL ANALYSIS REPORT



	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
eb.6/2							NORML
ťĽ		scalar	*Visual	NORML	NORML		NORML
		scalar	*Visual	>0.2			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	13.7	14.3	14.2
	GRAPHS						
	Ferrous Alloys						
Regulation -	20 10 5	_					
	Non-ferrous Meta	Sep28/22	Aug5/23	Feb 6/24			
	0-1		15/23	5624 1			
	A	03	Aug	Fel			
	¹⁹		1	10.0			
	17 G 16 Base 3 14			0.8 8.0 (0.04)(0)).	\frown	
	13 Abnormal		· · · · · · · · · · · · · · · · · · ·	£2.0)-		
				0.0	, L		
	Jul6/22 +-	Sep28/22	Aug5/23	Feb6/24	Apr28/22 Jul6/22	Sep28/22	Aug5/23 -
		Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys Company Non-ferrous Meta Und Company Ferrous Meta Codor Company Com	Appearance scalar Odor scalar Emulsified Water scalar Free Water scalar Fluid PROPERTIES Visc @ 100°C cSt GRAPHS Ferrous Alloys Chomium Digital Control of the scalar Ferrous Alloys Non-ferrous Metals Uscosity @ 100°C	Appearance scalar *Visual Odor scalar *Visual Emulsified Water scalar *Visual Free Water scalar *Vi	Appearance scalar 'Visual NORML Odor scalar 'Visual NORML Emulsified Water scalar 'Visual >0.2 Free Water scalar 'Visual 'Stalar 'Visual 'Stalar '	Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NORML N	Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG Free Water scalar *Visual NORML

Submitted By: seel also GFL468 - Laura Wilson