

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 4671M Component Diesel Engine

PETRO CANADA DURON SHP 15W40 (5 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.

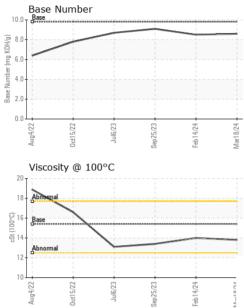
Fluid Condition

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		GFL0115176	GFL0106679	GFL0087318	
Sample Date		Client Info		18 Mar 2024	14 Feb 2024	25 Sep 2023	
Machine Age	hrs	Client Info		16224	16218	15382	
Oil Age	hrs	Client Info		842	300	419	
Oil Changed	nged Client Info			Changed	N/A	Changed	
Sample Status				NORMAL	NORMAL	NORMAL	
CONTAMINAT	ION	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 METAL	S	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>75	10	9	13	
Chromium	ppm	ASTM D5185m	>5	1	<1	<1	
Nickel	ppm	ASTM D5185m	>4	<1	0	0	
Titanium	ppm	ASTM D5185m	>2	<1	0	0	
Silver	ppm	ASTM D5185m	>2	0	0	0	
Aluminum	ppm	ASTM D5185m	>15	2	2	<1	
Lead	ppm	ASTM D5185m	>25	<1	0	0	
Copper	ppm	ASTM D5185m	>100	<1	0	<1	
Tin	ppm	ASTM D5185m	>4	<1	<1	0	
Vanadium	ppm	ASTM D5185m		<1	0	0	
Cadmium					<u>^</u>	0	
Gaumum	ppm	ASTM D5185m		<1	0	0	
ADDITIVES	ppm	method	limit/base	<1 current	0 history1	0 history2	
	ppm ppm		limit/base			-	
ADDITIVES		method ASTM D5185m		current	history1	history2	
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 2	history1 2	history2	
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0 0 60	current 2 <1	history1 2 0	history2 11 0	
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 2 <1 59	history1 2 0 57	history2 11 0 49	
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 2 <1 59 <1	history1 2 0 57 <1	history2 11 0 49 <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 2 <1 59 <1 941	history1 2 0 57 <1 936	history2 11 0 49 <1 828	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current 2 <1 59 <1 941 1072	history1 2 0 57 <1 936 971	history2 11 0 49 <1 828 1196	
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	0 0 60 0 1010 1070 1150	Current 2 <1 59 <1 941 1072 1095	history1 2 0 57 <1 936 971 1054	history2 11 0 49 <1 828 1196 997	
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 2 <1 59 <1 941 1072 1095 1227	history1 2 0 57 <1 936 971 1054 1253	history2 11 0 49 <1 828 1196 997 1210	
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 2 <1 59 <1 941 1072 1095 1227 3201	history1 2 0 57 <1 936 971 1054 1253 3069	history2 11 0 49 <1 828 1196 997 1210 2946	
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 2 <1 59 <1 941 1072 1095 1227 3201 current	history1 2 0 57 <1 936 971 1054 1253 3069 history1	history2 11 0 49 <1 828 1196 997 1210 2946 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 0 1010 1070 1150 1270 2060 limit/base >25	current 2 <1 59 <1 941 1072 1095 1227 3201 current 6	history1 2 0 57 <1 936 971 1054 1253 3069 history1 2	history2 11 0 49 <1 828 1196 997 1210 2946 history2 10	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current 2 <1 59 <1 941 1072 1095 1227 3201 current 6 2	history1 2 0 57 <1 936 971 1054 1253 3069 history1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	history2 11 0 49 <1 828 1196 997 1210 2946 history2 10 6	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20	current 2 <1 59 <1 941 1072 1095 1227 3201 current 6 2 1	history1 2 0 57 <1 936 971 1054 1253 3069 history1 2 2 1	history2 11 0 49 <1 828 1196 997 1210 2946 history2 10 6 0 0	
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 Limit/base >20	current 2 <1 59 <1 941 1072 1095 1227 3201 current 6 2 1 current 6 2 1 current	history1 2 0 57 <1 936 971 1054 1253 3069 history1 2 2 1 2 2 2 1 1 1 3 1 2 2 3 4 1 1 1 1 1 2 2 2 2 3 3 4 4 4 4 4 4 4 4 4 4 4	history2 11 0 49 <1 828 1196 997 1210 2946 history2 10 6 0 history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN 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 Limit/base >20	current 2 <1 59 <1 941 1072 1095 1227 3201 current 6 2 1 current 0.2	history1 2 0 57 <1 936 971 1054 1253 3069 history1 2 2 1 2 2 2 1 0.1	history2 11 0 49 <1 828 1196 997 1210 2946 history2 10 6 0 history2 0.3	
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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 imit/base >20 imit/base >20	current 2 <1 59 <1 941 1072 1095 1227 3201 current 6 2 1 current 0.2 6.2	history1 2 0 57 <1 936 971 1054 1253 3069 history1 2 2 1 0.1 5.4	history2 11 0 49 <1 828 1196 997 1210 2946 history2 10 6 0 history2 0.3 7.8	
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 ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 <u>imit/base</u> >6 >20 20	current 2 <1 59 <1 941 1072 1095 1227 3201 current 6 2 1 current 0.2 6.2 18.0	history1 2 0 57 <1 936 971 1054 1253 3069 history1 2 2 - 0.1 5.4 18.1	history2 11 0 49 <1 828 1196 997 1210 2946 history2 10 6 0 history2 0.3 7.8 19.9	



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			
	Sep25/23	Feb14/24 Mar18/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML			
	Sep	Mai Mai	000	scalar	*Visual	NORML	NORML	NORML	NORML			
			Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG			
			Free Water	scalar	*Visual		NEG	NEG	NEG			
			FLUID PROP		method	limit/base	current	history1	history2			
			Visc @ 100°C	cSt	ASTM D445	15.4	13.8	14.0	13.4			
			GRAPHS									
			Ferrous Alloys									
	Sep25/23 -	Feb14/24 -	30 - iron	$\overline{)}$								
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			11			0.0						
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,		Laboratory	: WearCheck USA -	501 Madiso	n Ave Carv	. NC 27513	GFL En	vironmental - 4	05 - Arbor Hill			
	Sample No.		. : GFL0115176	Rece	ived : 22	2 Mar 2024		Environmental - 405 - Arbor Hil 7400 Napier F				
	Lab Number		er : 06126935	Teste	e d : 20	6 Mar 2024		NC	ORTHVILLE, N			
Lannini LAI		Unique Numb Test Packag	er :10941086 19 : FLEET	Diagr	nosed : 26	6 Mar 2024 - W	les Davis	Cont	US 4816			
	te L2367			: FLEET Contact: John Nah contact Customer Service at 1-800-237-1369. jnahal@gflenv.co								
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