

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id **797M** Component **Diesel Engine** Fluid

PETRO CANADA DURON SHP 15W40 (36 QTS)

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

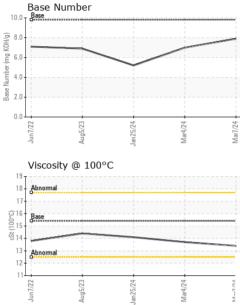
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0104249	GFL0104288	GFL0110053
Sample Date		Client Info		07 Mar 2024	04 Mar 2024	25 Jan 2024
Machine Age	hrs	Client Info		6379	6363	6287
Oil Age	hrs	Client Info		300	600	600
Oil Changed		Client Info		Changed	Changed	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	>90	11	15	29
Chromium	ppm	ASTM D5185m	>20	0	<1	1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	<1	2
Lead	ppm	ASTM D5185m	>40	0	0	2
Copper	ppm	ASTM D5185m	>330	0	0	<1
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium		ACTM DE10Em		•	0	0
Gaumum	ppm	ASTM D5185m		0	0	0
ADDITIVES	ppm	method	limit/base	0 current	0 history1	0 history2
	ppm		limit/base		-	-
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 0	history1 <1	history2 0
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current 0 0	history1 <1 0 57 0	history2 0 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 0 0 56	history1 <1 0 57	history2 0 0 52
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	ourrent 0 0 56 0	history1 <1 0 57 0	history2 0 0 52 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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 0 0 56 0 875	history1 <1 0 57 0 913 974 1009	history2 0 52 <1 885 950 965
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	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	Current 0 0 56 0 875 947	history1 <1 0 57 0 913 974	history2 0 52 <1 885 950 965 1177
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 0 56 0 875 947 810	history1 <1 0 57 0 913 974 1009	history2 0 52 <1 885 950 965
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	Current 0 56 0 875 947 810 1062	history1 <1 0 57 0 913 974 1009 1196	history2 0 52 <1 885 950 965 1177
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 0 1010 1070 1150 1270 2060	Current 0 56 0 875 947 810 1062 2491	history1 <1 0 57 0 913 974 1009 1196 2669	history2 0 0 52 <1 885 950 965 1177 2404
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	Current 0 56 0 875 947 810 1062 2491 Current	history1 <1 0 57 0 913 974 1009 1196 2669 history1	history2 0 0 52 <1 885 950 965 1177 2404 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 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	current 0 0 56 0 875 947 810 1062 2491 current 3	history1 <1 0 57 0 913 974 1009 1196 2669 history1 4	history2 0 0 52 <1 885 950 965 1177 2404 history2 4
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 0 1010 1070 1150 1270 2060 kimit/base >25	current 0 0 56 0 875 947 810 1062 2491 current 3 10	history1 <1 0 57 0 913 974 1009 1196 2669 history1 4 6	history2 0 0 52 <1 885 950 965 1177 2404 history2 4 7
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	current 0 0 56 0 875 947 810 1062 2491 current 3 10 0	history1 <1 0 57 0 913 974 1009 1196 2669 history1 4 6 0	history2 0 0 52 <1 885 950 965 1177 2404 history2 4 7 <1
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 0 0 56 0 875 947 810 1062 2491 Current 3 10 0 Current	history1 <1 0 57 0 913 974 1009 1196 2669 history1 4 6 0 history1	history2 0 0 52 <1 885 950 965 1177 2404 history2 4 7 <1 history2 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 0 0 56 0 875 947 810 1062 2491 current 3 10 0 current 0 current 0.3	history1 <1 0 57 0 913 974 1009 1196 2669 history1 4 6 0 history1 0 0.4	history2 0 0 52 <1 885 950 965 1177 2404 history2 4 7 <1 history2 0 0.7
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 0 0 56 0 875 947 810 1062 2491 current 3 10 0 current 3 10 0 current 0.3 7.9	history1 <1 0 57 0 913 974 1009 1196 2669 history1 4 6 0 history1 0 history1 9.8	history2 0 0 52 <1 885 950 965 1177 2404 history2 4 7 <1 history2 0 0.7 13.1
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 0 0 56 0 875 947 810 1062 2491 current 3 10 0 current 0 current 0.3 7.9 19.0	history1 <1 0 57 0 913 974 1009 1196 2669 history1 4 6 0 history1 0.4 9.8 20.3	history2 0 0 52 <1 885 950 965 1177 2404 history2 4 7 <1 history2 0.7 13.1 25.3



OIL ANALYSIS REPORT

VISUAL



JAR	Laboratory Sample No. Lab Number	: WearCheck USA - 5 : GFL0104249 : 06113862	Recei	Madison Ave., Cary, NC 27513 GFL Enviro Received : 11 Mar 2024 Tested : 12 Mar 2024 Diagnosed : 12 Mar 2024 - Wes Davis ce at 1-800-237-1369.				nmental - 410 - Michigan We 39000 Van Born F Wayne, N US 4818 Contact: Belal Dgheis bdgheish@gflenv.co	
		12 11 22/LnuL	Jan25/24	Mar4/24 +	0.0		Jan 25/24	Mar4/24 +	
		13 Abnormal			(b)HOX HOX Bun Jack Winn Pack Base Minn Action Base 2.0				
		6016 Base 15 73 14			⁶ 6.0 		\checkmark		
		17-			6.0 (B/HOX			/	
		18 - Abnormal			10.0				
		Viscosity @ 100 ^c	°C		10.0	Base Number			
		Jun7/22 Aug5/23	Jan 25/24	Mar4/24	Mar7/24				
		1/22 0	5/24	124	/24				
		2-							
		4							
		6 -							
		8 - tin							
		الم Non-ferrous Met		Ma	Ma				
		Jun7/22	Jan 25/24	Mar4/24	Mar7/24				
		5 -							
		10-			<u> </u>				
		20 - 톱 15 -							
Jan 25/24	ма:4/24 л.с. сл	25 - nickel		<					
		Ferrous Alloys							
		GRAPHS							
		Visc @ 100°C	cSt	ASTM D445	15.4	13.4	13.7	14.1	
		FLUID PROP	ERTIES	method	limit/base	current	history1	history2	
		Emulsified Water Free Water	scalar scalar	*Visual *Visual	>0.2	NEG NEG	NEG NEG	NEG NEG	
Jan	W W	Odor	scalar	*Visual	NORML	NORML	NORML	NORML	
Jan 25/24 -	Mar4/24 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML	
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE	
		Silt Debris	scalar scalar	*Visual *Visual	NONE NONE	NONE NONE	NONE	NONE NONE	
		Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE	
		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE	