

OIL ANALYSIS REPORT

Sample Rating Trend





Component Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (33 QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a components first oil change.

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.

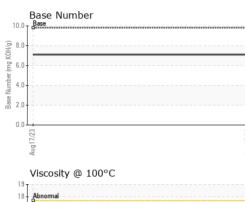
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0084872		
Sample Date		Client Info		17 Aug 2023		
Machine Age	hrs	Client Info		1585		
Oil Age	hrs	Client Info		1585		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
CONTAMINATIO	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0		
Glycol		WC Method		NEG		
WEAR METALS	6	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	15		
Chromium	ppm	ASTM D5185m	>20	<1		
Nickel	ppm	ASTM D5185m	>5	<1		
Titanium	ppm		>2	<1		
Silver	ppm	ASTM D5185m	>2	<1		
Aluminum	ppm	ASTM D5185m	>20	4		
Lead	ppm	ASTM D5185m	>40	0		
Copper	ppm	ASTM D5185m	>330	65		
Tin	ppm		>15	<1		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	1		
Barium	ppm	ASTM D5185m	0	0		
Molybdenum	ppm	ASTM D5185m	60	63		
Manganese	ppm	ASTM D5185m	0	1		
Magnesium	ppm	ASTM D5185m	1010	1015		
Calcium						
	DDIII	ASTM D5185m				
Phosphorus	ppm ppm	ASTM D5185m ASTM D5185m	1070 1150	1169 1027		
	ppm	ASTM D5185m	1070 1150	1169		
			1070	1169 1027		
Zinc	ppm ppm ppm	ASTM D5185m ASTM D5185m	1070 1150 1270	1169 1027 1295		
Zinc Sulfur CONTAMINANT	ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base	1169 1027 1295 3082		
Zinc Sulfur CONTAMINANT Silicon	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method	1070 1150 1270 2060 limit/base	1169 1027 1295 3082 current	 history1	
Zinc Sulfur CONTAMINANT Silicon Sodium	ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	1070 1150 1270 2060 limit/base	1169 1027 1295 3082 current 6	 history1	 history2
Zinc Sulfur CONTAMINANT Silicon Sodium	ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base >25	1169 1027 1295 3082 current 6 4	 history1 	 history2
Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED	ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base >25 >20	1169 1027 1295 3082 current 6 4 17 current	 history1 	 history2
Zinc Sulfur CONTAMINANT Silicon Sodium Potassium	ppm ppm ppm FS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844	1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4	1169 1027 1295 3082 current 6 4 17 current 0.3	 history1 history1	 history2 history2
CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4	1169 1027 1295 3082 current 6 4 17 current	 history1 history1 	 history2 history2 history2
Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm FS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7624	1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20	1169 1027 1295 3082 current 6 4 17 current 0.3 8.0	 history1 history1 history1	 history2 history2 history2
Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm FS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844	1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >4 >20 >30	1169 1027 1295 3082 current 6 4 17 current 0.3 8.0 19.9	 history1 history1 history1 	 history2 history2 history2



17 () 10.00 15. 14. Base

13 Abnormal 12 11 Aug17/23

OIL ANALYSIS REPORT



	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
Aug 17/23	Appearance	scalar	*Visual	NORML	NORML		
Igua	Odor	scalar	*Visual	NORML	NORML		
°C	Emulsified Water	scalar	*Visual	>0.2	NEG		
C	Free Water	scalar	*Visual		NEG		
	FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	13.4		
	GRAPHS						
	Ferrous Alloys						
	¹⁶ T						
	14- iron chromium						
	12 - nickel						
	10						
	<u> </u>						
	6						
	4						
	2-						
	Aug17/23			Aug17/23			
	Aug			Bny			
	Non-ferrous Meta	ls					
	Copper						
	60 - management lead						
	50 - 50 - 50 - 50 - 50 - 50 - 50 - 50 -						
	= 40						
	ق ، 30 -						
	20-						
	10						
	23 23		*****				
	Aug17/23			Aug17/23			
	⊲ Viscosity @ 100°	_		A			
	19 _T				Base Number		
	18 - Abnormal						
	17			Base Number (mg KOH/g)	8.0 -		
	c 16			KOH			
	() 16 Base () 15 () 15 () 15			E C	6.0 -		
	ts 14				4.0		
	13			ase N			
	Abnormal			° 2	2.0		
	11			(0.0		
	7/23			7/23	7/23		7/23
	Aug17/23			Aug17/23	Aug17/23		Aug17/23
Laboratory Sample No. Lab Number Unique Number Test Package To discuss this sample report, * - Denotes test methods that	e : FLEET , contact Customer Serv are outside of the ISO :	Received Diagnos Diagnos vice at 1-8 17025 sco	d : 21 / ed : 21 / tician : We 800-237-1368 ope of accred	Aug 2023 Aug 2023 s Davis 9. Iitation.		3900 Contact bdgheis T:	- Michigan West 10 Van Born Rd Wayne, MI US 48184 : Belal Dgheish sh@gflenv.com (734)714-2340 F:
Certificate L2367 To discuss this sample report,	: WearCheck USA - : GFL0084872 : 05929181 r : 10609128 : FLEET , contact Customer Serv are outside of the ISO 3	Received Diagnos Diagnos vice at 1-8 17025 sco	d : 21 / ed : 21 / tician : We 800-237-1368 ope of accred	rry, NC 2751 Aug 2023 Aug 2023 s Davis 9. <i>Iitation.</i>	13 GFL Envi	3900 Contact bdgheis T:	0 Van Born Wayne, US 481 : Belal Dghe sh@gflenv.c



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Submitted By: Belal Dgheish Page 2 of 2