

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 741003-310092

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.

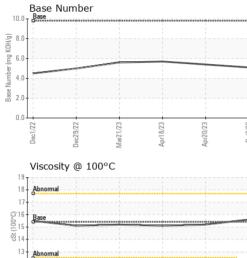
SAMPLE INFORM	NATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0084662	GFL0078102	GFL0078051
Sample Date		Client Info		03 Oct 2023	20 Apr 2023	18 Apr 2023
Machine Age	kms	Client Info		0	133185	132791
Oil Age	kms	Client Info		0	0	0
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	5	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	30	20	17
Chromium	ppm	ASTM D5185m	>4	3	2	2
Nickel	ppm	ASTM D5185m	>2	1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	7	2	1
Lead	ppm	ASTM D5185m	>45	2	1	1
Copper	ppm	ASTM D5185m	>85	2	1	1
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	18	17	25
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	78	68	65
Manganese	ppm	ASTM D5185m	0	1	1	<1
Magnesium	ppm	ASTM D5185m	1010	779	713	005
Calcium		No IIII Borooiii	1010	119	/13	685
Guidium	ppm		1070	2160	2029	1928
Phosphorus	ppm ppm					
		ASTM D5185m ASTM D5185m	1070	2160	2029	1928
Phosphorus	ppm	ASTM D5185m ASTM D5185m	1070 1150	2160 1074	2029 964	1928 906
Phosphorus Zinc	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270	2160 1074 1307	2029 964 1214	1928 906 1165
Phosphorus Zinc Sulfur	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base	2160 1074 1307 3180	2029 964 1214 2684	1928 906 1165 2978
Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1070 1150 1270 2060 limit/base	2160 1074 1307 3180 current	2029 964 1214 2684 history1	1928 906 1165 2978 history2
Phosphorus Zinc Sulfur CONTAMINAN ⁻ Silicon	ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	1070 1150 1270 2060 limit/base >30	2160 1074 1307 3180 current 8	2029 964 1214 2684 history1 7	1928 906 1165 2978 history2 7
Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium	ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base >30	2160 1074 1307 3180 current 8 9	2029 964 1214 2684 history1 7 8	1928 906 1165 2978 history2 7 8
Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium	ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 <i>limit/base</i> >30 >20	2160 1074 1307 3180 current 8 9 1	2029 964 1214 2684 history1 7 8 1	1928 906 1165 2978 history2 7 8 1
Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium INFRA-RED	ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 imit/base >30 >20 imit/base >3	2160 1074 1307 3180 current 8 9 1 1 current	2029 964 1214 2684 history1 7 8 1 1 history1	1928 906 1165 2978 history2 7 8 1 1 history2
Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 imit/base >30 >20 imit/base >3	2160 1074 1307 3180 current 8 9 1 1 current 0.1	2029 964 1214 2684 history1 7 8 1 1 history1 0	1928 906 1165 2978 history2 7 8 1 1 history2 0
Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7844	1070 1150 1270 2060 imit/base >30 >20 imit/base >3 >3 >20	2160 1074 1307 3180 current 8 9 1 2 current 0.1 12.6	2029 964 1214 2684 history1 7 8 1 1 history1 0 0 11.7	1928 906 1165 2978 history2 7 8 1 1 history2 0 0 10.6
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7844	1070 1150 1270 2060 Imit/base >30 >20 Imit/base >3 >20 >3	2160 1074 1307 3180 current 8 9 1 1 current 0.1 12.6 28.7	2029 964 1214 2684 history1 7 8 1 1 history1 0 0 11.7 26.5	1928 906 1165 2978 history2 7 8 1 1 history2 0 10.6 25.3



12

Dec1/22

OIL ANALYSIS REPORT



Mar21/23

Apr18/23

Dec29/22

	VISUAL		method		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
23 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Apr20/23 0ct3/23					-		
4	Odor	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	15.6	15.2	15.1
	GRAPHS						
	Ferrous Alloys						
23	iron						
Apr20/23	25 - chromium		/				
A	20						
1	§ 15						
ĩ							
	10						
	5						
			10055555500000000000000000000000000000	********			
		/23-	/23-	/23			
	Dec1/22 Dec29/22	Mar21/23 Apr18/23	Apr20/23	0ct3/23			
	Non-ferrous Met						
	10 _T						
	copper						
	8 - tin						
	6						
	E dd						
	4						
	2-		100000000000000000000000000000000000000	and a second as			
		in the second second		a a se a la factoria			
	0	of 33,8100.					
	0	1/23 +	0/23 -	3/23			
		Mar21/23	Apr20/23 -	0ct3/23			
	0		Apr20/23 -	0ct3/23	Da ee Numb		
	Dec1/22		Apr20/23 -		Base Number		
	Uiscosity @ 100		Apr20/23 -				
	Viscosity @ 100'		Apr20/23 -	10.0			
	Viscosity @ 100'		Api20/23 -	10.0			
	Viscosity @ 100'		Apr20/23 -	10.0			
1,000,01,0	Viscosity @ 100'		Apr20/23 -	10.0			
100001 roo	Viscosity @ 100'		Apr20/23	10.0			
194001 Prov	Viscosity @ 100'		Apr20/23	10.0 (Б)НОУ 6.0 рац			
1000UV P	Viscosity @ 100'		Apr20/23	10.0 (0)HOX HUX HUX HUX HUX HUX HUX HUX HUX HUX HU			
(AMOULT AS 1	Viscosity @ 100'	°C		10.0 (0,HOX Bu) Jaquin 4.0 Bage 2.0 0.0			23
	Viscosity @ 100'	°C		10.0 (0)HOX HUX HUX HUX HUX HUX HUX HUX HUX HUX HU			pr20/23
NAROVI A A	Viscosity @ 100'			10.0 (0,HOX Bu) Jaquin 4.0 Bage 2.0 0.0		Mai21/23	Apri20/23 Apri20/23
	Viscosity @ 100'	Apr18/23	Apr20/23	10.0 (0)HOX Buy Buy Buy Buy Buy Buy Buy Buy Buy Buy		Mar21/23	
aboratory	Viscosity @ 100'	Apr18/23	EZODZUGY Son Ave., Ca	10.0 (0)HOX Buy Buy Buy Buy Buy Buy Buy Buy Buy Buy		E2112 But 802 vironmental - 856	- Houston Sout
aboratory ample No.	Viscosity @ 100'	• C • C • C • C • C • C • C • C	son Ave., Ca 1 : 06 (ed : 09 (10.0 10.0		E2112 But 802 vironmental - 856	- Houston Sout ighway 6 Sout Houston, TX
aboratory ample No. ab Number nique Number	Viscosity @ 100'	°C EZUIZEM - 501 Madis Received	son Ave., Ca 1 : 06 (ed : 09 (10.0 10.0		EZU172200 vironmental - 856 8515 Hi	- Houston Sout ighway 6 Sout Houston, TX US 7708
aboratory ample No. ab Number nique Number est Package	Viscosity @ 100'	• C • C • C • C2011/2/2004 • C2011/2004 • C	son Ave., Ca d : 06 (ed : 09 (tician : Wes	10.0 10.0		EZU172200 vironmental - 856 8515 Hi	- Houston Sout ighway 6 Sout Houston, TX

To discuss this sample r * - 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)

Certificate L2367