

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id **727146** Component **Diesel Engine** Fluid

PETRO CANADA DURON SHP 15W40 (--- GAL)

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

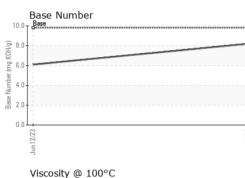
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

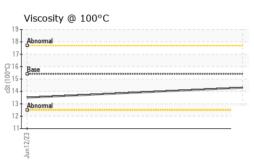
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0084833	GFL0084845	
Sample Date		Client Info		04 Aug 2023	12 Jun 2023	
Machine Age	hrs	Client Info		15935	15152	
Oil Age	hrs	Client Info		15152	600	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	SEVERE	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	20	56	
Chromium	ppm	ASTM D5185m	>5	<1	2	
Nickel	ppm	ASTM D5185m	>2	0	1	
Titanium	ppm	ASTM D5185m		<1	<1	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>30	1	3	
Lead	ppm	ASTM D5185m	>30	0	<1	
Copper	ppm	ASTM D5185m	>150	<1	2	
Tin	ppm	ASTM D5185m	>5	<1	<1	
Vanadium	ppm	ASTM D5185m		<1	0	
Cadmium	ppm	ASTM D5185m		0	0	
			12 . 1. 0			le la transition
ADDITIVES		method				history2
Boron	ppm	ASTM D5185m	limit/base	current 3	history1 5	nistory2
	ppm ppm					
Boron		ASTM D5185m	0	3	5	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	3 0	5 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 56	5 0 63	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 56 <1	5 0 63 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	3 0 56 <1 1011	5 0 63 <1 992	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	3 0 56 <1 1011 1146	5 0 63 <1 992 1188	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	3 0 56 <1 1011 1146 1012	5 0 63 <1 992 1188 1058	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	3 0 56 <1 1011 1146 1012 1317	5 0 63 <1 992 1188 1058 1316	
Boron Barium 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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	3 0 56 <1 1011 1146 1012 1317 3649	5 0 63 <1 992 1188 1058 1316 3186	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	3 0 56 <1 1011 1146 1012 1317 3649 current	5 0 63 <1 992 1188 1058 1316 3186 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 60 1010 1070 1150 1270 2060	3 0 56 <1 1011 1146 1012 1317 3649 current 17	5 0 63 <1 992 1188 1058 1316 3186 history1 • 76	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	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 kimit/base >20	3 0 56 <1 1011 1146 1012 1317 3649 <u>current</u> 17 8	5 0 63 <1 992 1188 1058 1316 3186 history1 ◆ 76 12	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20	3 0 56 <1 1011 1146 1012 1317 3649 current 17 8 2	5 0 63 <1 992 1188 1058 1316 3186 history1 ◆ 76 12 4	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >20 limit/base	3 0 56 <1 1011 1146 1012 1317 3649 current 17 8 2 2	5 0 63 <1 992 1188 1058 1316 3186 ► history1 • 76 12 4 ¥	 history2 history2
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	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 >20 limit/base >20	3 0 56 <1 1011 1146 1012 1317 3649 <u>current</u> 17 8 2 2 <u>current</u> 0.6	5 0 63 <1 992 1188 1058 1316 3186 history1 € 76 12 4 4 history1 1.2	 history2 history2 history2
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >20 <i>limit/base</i> >20	3 0 56 <1 1011 1146 1012 1317 3649 <i>current</i> 17 8 2 2 <i>current</i> 0.6 9.4	5 0 63 <1 992 1188 1058 1316 3186 history1 ↑76 12 4 history1 1.2 1.2 12.4	 history2 history2
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 200 200 200 320 320 33 200 230	3 0 56 <1 1011 1146 1012 1317 3649 <u>current</u> 17 8 2 2 <u>current</u> 0.6 9.4 20.3	5 0 63 <1 992 1188 1058 1316 3186 history1 € 76 12 4 history1 1.2 4 history1 1.2 4	 history2 history2 history2
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	ASTM D5185m ASTM D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 2060 2060 200 200 200 200 200 200	3 0 56 <1 1011 1146 1012 1317 3649 <i>current</i> 17 8 2 <i>current</i> 0.6 9.4 20.3 <i>current</i>	5 0 63 <1 992 1188 1058 1316 3186 history1 ◆ 76 12 4 ◆ 76 12 4 ◆ 12 4 ↓ 12 4 ↓ 12 4 ↓ 12 4 ↓ 12 4 ↓ 12 4	 history2 history2 history2 history2



OIL ANALYSIS REPORT

VISUAL





	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
	Precipitate		*Visual	NONE	NONE	NONE	
	Silt					NONE	
			*Visual	NONE	NONE		
	Debris		*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Aug 4/23	Appearance	scalar	*Visual	NORML	NORML	NORML	
Au	Odor	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	
	FLUID PROPE		method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	14.3	13.5	
	GRAPHS						
	Ferrous Alloys						
	iron						
	50 - chromium						
	40-						
	<u>특</u> 30 -						
	20 -			/			
	10-						
	12/23			Aug4/23			
	un r			Aug			
	Non-ferrous Meta	ls					
	¹⁰ T						
	copper						
	nonnannan lead						
	8						
	8 - English - En						
	8						
	8 - English - En						
	8 - English - En						
	8 - English - En						
	8			23			
	8			40-4/23			
	B B C C C C C C C C C C C C C C C C C C			Aug4/23			
	Viscosity @ 100°C		******	Aug4/23	Base Number		
	Viscosity @ 100°C		*****	27th Bind H			
	Viscosity @ 100°C			10.0	Base		
	Viscosity @ 100°C	2		10.0	Base		
	Viscosity @ 100°C			10.0	Base		
	Viscosity @ 100°C			10.0	Base		
	Viscosity @ 100°C			10.0	Base		
	Base Viscosity @ 100°C Base Abnomal Base Base Base			10.0 (6)(H0) (0)(H0) (0)(H0) (0)(H0) (0)(H0) (0)(H0) (0)(H0) (0)(H0)(H0)(H0)(H0)(H0)(H0)(H0)(H0)(H0)(Base		
	B Coopulation B B Coopulation B B B B B B B B B B B B B			0.0 0.8 0.0 0.0 0.0 0.0 0.0	Base		
	B C C C C C C C C C C C C C			10.0 (CHO) 8.0 (CHO) 6.0 (CHO) 900 (CHO) 900 (Base		
	B B C C C C C C C C C C C C C			10.0 (0)HOX HOX HOX HOX HOX HOX HOX HOX HOX HOX	Base		
	B C C C C C C C C C C C C C			10.0 (CHO) 8.0 (CHO) 6.0 (CHO) 900 (CHO) 900 (Base		
Laboratory Sample No. Lab Number Unique Number Test Package	Uiscosity @ 100°C	501 Madisc Received Diagnosed Diagnostic	:10/ d :11/ cian :Wes	10.0 (h) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b	Base E2721un	Contac	cunningham I Urbana, US 618 t: Kristine Tyr
Sample No. Lab Number Unique Number	Viscosity @ 100°C Viscosity @ 100°C Ahnormal Control of the second se	501 Madiso Received Diagnosed Diagnostic	:10/ d :11/ cian :Wes	10.0 (9)(10) 9 (9)(10) 9 (10)	Base E2721un	4808 Contac	cunningham Urbana US 618

Report Id: GFL959A [WUSCAR] 05921031 (Generated: 08/11/2023 09:37:47) Rev: 1

Submitted By: Also GFL959E - Kristine Tyron