

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 927090 Component

Fluid

Diesel Engine

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.

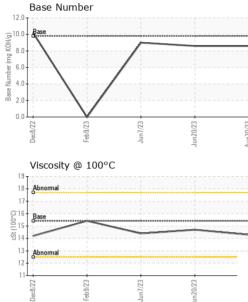
Fluid Condition

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

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0072541	GFL0072557	GFL0068317
Sample Date		Client Info		30 Aug 2023	20 Jun 2023	07 Jun 2023
Machine Age	hrs	Client Info		21319	21319	600
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Not Changd	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	21	39	35
Chromium	ppm	ASTM D5185m	>5	<1	3	3
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	3	1	2
Lead	ppm	ASTM D5185m	>30	<1	1	<1
Copper	ppm	ASTM D5185m	>150	<1	<1	<1
Tin	ppm	ASTM D5185m	>5	0	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
			11			history.0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current 3	history1 4	nistory∠ 5
	ppm ppm		0		· · · · · · · · · · · · · · · · · · ·	
Boron		ASTM D5185m	0	3	4	5
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	3 0	4	5 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 58	4 0 60	5 0 62
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 58 <1	4 0 60 <1	5 0 62 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	3 0 58 <1 940	4 0 60 <1 907	5 0 62 <1 936
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	3 0 58 <1 940 1110 951 1195	4 0 60 <1 907 1077	5 0 62 <1 936 1085
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 58 <1 940 1110 951	4 0 60 <1 907 1077 976	5 0 62 <1 936 1085 1016
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 58 <1 940 1110 951 1195	4 0 60 <1 907 1077 976 1193	5 0 62 <1 936 1085 1016 1219
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 1010 1070 1150 1270 2060	3 0 58 <1 940 1110 951 1195 3421	4 0 60 <1 907 1077 976 1193 3296	5 0 62 <1 936 1085 1016 1219 3567
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	0 0 60 1010 1070 1150 1270 2060	3 0 58 <1 940 1110 951 1195 3421 current	4 0 60 <1 907 1077 976 1193 3296 history1	5 0 62 <1 936 1085 1016 1219 3567 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 method	0 0 60 1010 1070 1150 1270 2060 kimit/base	3 0 58 <1 940 1110 951 1195 3421 current 7	4 0 60 <1 907 1077 976 1193 3296 history1 12	5 0 62 <1 936 1085 1016 1219 3567 history2 13
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	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 kimit/base	3 0 58 <1 940 1110 951 1195 3421 current 7 2	4 0 60 <1 907 1077 976 1193 3296 history1 12 4	5 0 62 <1 936 1085 1016 1219 3567 history2 13 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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	3 0 58 <1 940 1110 951 1195 3421 current 7 2 2 <1	4 0 60 <1 907 1077 976 1193 3296 history1 12 4 2	5 0 62 <1 936 1085 1016 1219 3567 history2 13 2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	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	3 0 58 <1 940 1110 951 1195 3421 current 7 2 <1 2 <1	4 0 60 <1 907 1077 976 1193 3296 history1 12 4 2 history1	5 0 62 <1 936 1085 1016 1219 3567 history2 13 2 2 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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >20 limit/base >3	3 0 58 <1 940 1110 951 1195 3421 <i>current</i> 7 2 <1 <i>current</i> 2.3	4 0 60 <1 907 1077 976 1193 3296 history1 12 4 2 history1 2.8	5 0 62 <1 936 1085 1016 1219 3567 history2 13 2 2 history2 1.9
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 limit/base >20 limit/base >20	3 0 58 <1 940 1110 951 1195 3421 <i>current</i> 7 2 <1 <i>current</i> 2.3 7.4	4 0 60 <1 907 1077 976 1193 3296 history1 12 4 2 history1 2.8 8.3	5 0 62 <1 936 1085 1016 1219 3567 history2 13 2 2 history2 1.9 6.7
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 imit/base >20 imit/base >3 >20 >30	3 0 58 <1 940 1110 951 1195 3421 <i>current</i> 7 2 <1 <i>current</i> 2.3 7.4 21.1	4 0 60 <1 907 1077 976 1193 3296 history1 12 4 2 history1 2.8 8.3 23.0	5 0 62 <1 936 1085 1016 1219 3567 history2 13 2 2 history2 1.9 6.7 20.7
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 /////////////////////////////////	3 0 58 <1 940 1110 951 1195 3421 <i>current</i> 7 2 2 <1 <i>current</i> 2.3 7.4 21.1 <i>current</i>	4 0 60 <1 907 1077 976 1193 3296 history1 12 4 2 history1 2.8 8.3 23.0 history1	5 0 62 <1 936 1085 1016 1219 3567 history2 13 2 2 history2 1.9 6.7 20.7 history2



OIL ANALYSIS REPORT



	VISUAL		method				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
Jun20/23 Aug30/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Junž	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	14.3	14.7	14.4
	GRAPHS						
	Ferrous Alloys						
0/23 +	iron						
Jun20/23	⁸⁰ nickel		1				
_	60						
E							
	40						
	20 -						
	THIS DOCTOR OF THE REAL PROPERTY NAMES OF THE PARTY OF T						
	33 53	23					
	Dec8/22 Feb9/23	Jun7/23	Jun20/23	Aug30/23			
	Non-ferrous Meta	ls	7	4			
	10 T		·				
	copper lead						
	encourse tin		I I				
	6 -						
	6 -						
	6 -						
	6 -						
	6						
		23	33	52 52			
		Jun7/23	in 2023	1030/23			
		C	Jun20/23	Aug30/23 1			
	Viscosity @ 100°C	-	Jun2023	62002 PMB 12.0	Base Number		
	Viscosity @ 100°C	-	Jun20/23	≪ 12.0			
	Uiscosity @ 100°C	-	Jun20/23	≪ 12.0	Base		
	Uiscosity @ 100°C	-	Jun20/23	≪ 12.0	8ase		
	Uiscosity @ 100°C	-	Jun2023	≪ 12.0	- Base		
	Viscosity @ 100°C	-	Jun2023	≪ 12.0	- Base		
	Viscosity @ 100°C	-	Jun20/23	حر 12.0 10.0 (0,H2) 8.0 سال الم موس	Base		
	Viscosity @ 100°C	-	Jun20/23	<	Base		
	Viscosity @ 100°C			≤t (0)HOX 000 HOX		1/23	023
	Viscosity @ 100°C	-	Jun20/23	<		Jun723	Jun20/23
	Uiscosity @ 100°C	C	Jun20/23 L	V 12.0 (0)HOX Bull Bull so 6.0 (0)HOX Bull Bull so 6.0 (0)HOX Bull So (0)HOX BU	Feb.9/23		
Laboratory	Viscosity @ 100°C	C EZ/Lunr 501 Madis	Son Ave., Ca	 I 12.0 I 12.0 I 10.0 I 10.0	Feb.9/23	ironmental - 419	- Metro Sagina
	Viscosity @ 100°C	C	son Ave., Ca	V 12.0 (0)HOX Bull Bull so 6.0 (0)HOX Bull Bull so 6.0 (0)HOX Bull So (0)HOX BU	Feb.9/23	ironmental - 419	
Laboratory Sample No.	Viscosity @ 100°C Viscosity @ 100°C	501 Madis Received	son Ave., Ca	 I 12.0 III.0 <l< td=""><td>Feb.9/23</td><td>ironmental - 419 69</td><td>- Metro Sagina 950 N Michiga</td></l<>	Feb.9/23	ironmental - 419 69	- Metro Sagina 950 N Michiga

 * - 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)

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