

## **OIL ANALYSIS REPORT**

Sample Rating Trend



# STERLING 107

#### Component Diesel Engine Fluid PETRO CANADA 10W30 (--- 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.

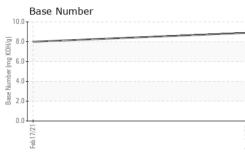
SAMPLE INFORM	MATION	method				history2
Sample Number		Client Info		PCA0069429	PCA0027511	
Sample Date		Client Info		14 Sep 2023	17 Feb 2021	
Machine Age	mls	Client Info		72132	62973	
Oil Age	mls	Client Info		5000	3000	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINATI	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method	20.L	NEG	NEG	
-	-			-		
WEAR METAL	5	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	21	13	
Chromium	ppm	ASTM D5185m	>20	2	1	
Nickel	ppm	ASTM D5185m	>4	<1	<1	
Titanium	ppm	ASTM D5185m		<1	<1	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	2	2	
Lead	ppm	ASTM D5185m	>40	<1	4	
Copper	ppm	ASTM D5185m	>330	1	<1	
Tin	ppm	ASTM D5185m	>15	<1	0	
Antimony	ppm	ASTM D5185m			0	
Vanadium	ppm	ASTM D5185m		0	1	
Cadmium	ppm	ASTM D5185m		<1	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		3	92	
Barium	ppm	ASTM D5185m		12	0	
Molybdenum	ppm	ASTM D5185m		66	36	
				4	4	
Manganese	ppm	ASTM D5185m		<1	<1	
Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m		<1 1006	664	
•						
Magnesium Calcium	ppm	ASTM D5185m		1006	664	
Magnesium	ppm ppm	ASTM D5185m ASTM D5185m		1006 1111	664 1459	
Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		1006 1111 1105	664 1459 634	
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	1006 1111 1105 1290	664 1459 634 773	
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >25	1006 1111 1105 1290 3422	664 1459 634 773 2414	
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method		1006 1111 1105 1290 3422 current	664 1459 634 773 2414 history1	   history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		1006 1111 1105 1290 3422 current 9	664 1459 634 773 2414 history1 5	   history2 
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>25	1006 1111 1105 1290 3422 current 9 0	664 1459 634 773 2414 history1 5 3	   history2 
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>25 >20	1006 1111 1105 1290 3422 current 9 0 2	664 1459 634 773 2414 history1 5 3 0	   history2  
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>25 >20 limit/base >3	1006 1111 1105 1290 3422 current 9 0 2 2 current 0.8	664 1459 634 773 2414 history1 5 3 0 history1 0.7	   history2   history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>25 >20 limit/base	1006 1111 1105 1290 3422 current 9 0 2 2 current	664 1459 634 773 2414 history1 5 3 0 history1	   history2   history2 
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 D51854	>25 >20 limit/base >3 >20	1006 1111 1105 1290 3422 current 9 0 2 2 current 0.8 5.6	664 1459 634 773 2414 history1 5 3 0 history1 0.7 7.3	   history2   history2  history2
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	>25 >20 limit/base >3 >20 >30	1006 1111 1105 1290 3422 current 9 0 2 2 current 0.8 5.6 18.2 current	664 1459 634 773 2414 history1 5 3 0 history1 0.7 7.3 19.2	   history2   history2  history2 
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Solicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7615	>25 >20 limit/base >3 >20 >30 limit/base	1006 1111 1105 1290 3422 current 9 0 2 2 current 0.8 5.6 18.2	664 1459 634 773 2414 history1 5 3 0 history1 0.7 7.3 19.2 history1	   history2   history2    history2

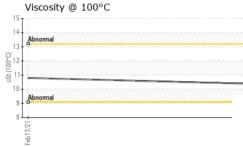
Contact/Location: MATT BARTHEL - CITMONMN



# **OIL ANALYSIS REPORT**

VISUAL





	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
	Precipitate	scalar	*Visual	NONE	NONE	NONE	
	Silt	scalar	*Visual	NONE	NONE	NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
4/23	Appearance	scalar	*Visual	NORML	NORML	NORML	
Sep 14/23	Odor	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	
	FLUID PROPE		method	limit/bas	e current	history1	history2
	Visc @ 100°C	cSt	ASTM D445		10.4	10.8	
	GRAPHS						
	Ferrous Alloys						
	25 iron						
	20 - nickel						
	15						
	und 10						
	10-						
	5 -						
	1/2/1			1/23			
	Feb17/2			Sep 14/23			
	Non-ferrous Meta	ls					
	<sup>10</sup> T						
	8+ copper						
	tin						
	6-						
	udd						
	A LOUIS CONTRACT OF THE R. P. LOUIS CO. LOUIS CO. L.						
	2-	In the state of th	The state of the s				
	0		Contractive a laboration of	THE REAL PROPERTY OF			
				ł/23 -			
	Feb17/21			Sep 14/23			
	Viscosity @ 100°	2					
	15 T				Base Number		
	14				8.0		
	Abnormal			(0)	۶.0 <b>-</b>		
i	Q 12			KO	6.0		
	(2012 -001) zz 11-			er (m	5.0		
	1			Mum	4.0		
	10			e e e e e e e e e e e e e e e e e e e	7.0 6.0 5.0 4.0 3.0 2.0		
	9 Abnormal				1.0		
	84			en .	0.0		
	Feb17/2			Sep 14/23	Feb 17/2		Sep 14/23
	E			Sel	2		Ser
aboratory.	: WearCheck USA -	501 Madis	son Ave., C	ary, NC 275	513	CITY OF	MONTICELLO
Sample No.	: PCA0069429	Recieved	<b>d</b> :15	Dec 2023		909 GOL	F COURSE RE
ab Number	: 06036632	Diagnos		Dec 2023		MO	NTICELLO, MN
Inique Number	: 10791861 · ELEET	Diagnost	t <b>ician</b> : Do	on Baldridge	•		US 55362



Test Package : FLEET Certificate L2367 MATT.BARTHEL@CI.MONTICELLO.MN.US To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - 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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Contact: MATT BARTHEL