

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **Hurricane Creek 3** Component

Natural Gas Engine

PETRO CANADA SENTRON LD 3000 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Tests indicate that there is no fuel present in the oil. 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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

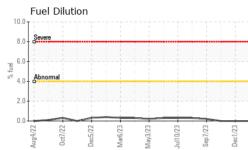


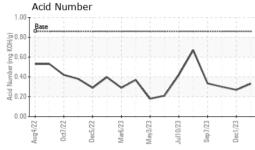


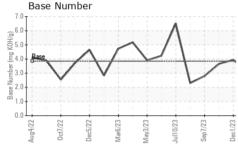
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0091328	PCA0091326	PCA0103477
Sample Date		Client Info		02 Jan 2024	01 Dec 2023	07 Nov 2023
Machine Age	hrs	Client Info		142385	141610	141029
Oil Age	hrs	Client Info		0	2225	1144
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	<1	0	0
Chromium	ppm	ASTM D5185m	>4	0	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	_	0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	2	<1	<1
Lead	ppm	ASTM D5185m	>30	0	0	0
Copper	ppm	ASTM D5185m	>35	۰ <1	0	0
Tin	ppm	ASTM D5185m	>4	0	0	<1
Vanadium	ppm	ASTM D5185m	24	0	0	0
Cadmium		ASTM D5185m		0	0	0
	ppm			-	-	-
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	5	0	0	<1
Barium	ppm ppm	ASTM D5185m	1	0	0	0
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	1 2	0 <1	0 0	0 0
Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1 2 1	0 <1 0	0 0 0	0 0 0
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 2 1 5	0 <1 0 10	0 0 0 11	0 0 0 8
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 2 1 5 1220	0 <1 0 10 1300	0 0 0 11 1263	0 0 0 8 1248
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 2 1 5 1220 298	0 <1 0 10 1300 312	0 0 11 1263 279	0 0 0 8 1248 278
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 2 1 5 1220	0 <1 0 10 1300	0 0 0 11 1263	0 0 0 8 1248
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	1 2 1 5 1220 298	0 <1 0 10 1300 312	0 0 11 1263 279	0 0 0 8 1248 278
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 ASTM D5185m	1 2 1 5 1220 298 350	0 <1 0 10 1300 312 338	0 0 11 1263 279 351 2369 history1	0 0 8 1248 278 338
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	1 2 1 5 1220 298 350 1995	0 <1 0 10 1300 312 338 2362	0 0 11 1263 279 351 2369	0 0 8 1248 278 338 2376
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	1 2 1 5 1220 298 350 1995 limit/base	0 <1 0 10 1300 312 338 2362 current	0 0 11 1263 279 351 2369 history1	0 0 8 1248 278 338 2376 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	1 2 1 5 1220 298 350 1995 limit/base	0 <1 0 10 1300 312 338 2362 current 2	0 0 11 1263 279 351 2369 history1 2 0 0	0 0 8 1248 278 338 2376 history2 2 0 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	1 2 1 5 1220 298 350 1995 <i>limit/base</i> >+100	0 <1 0 10 1300 312 338 2362 <u>current</u> 2 0	0 0 11 1263 279 351 2369 history1 2 0	0 0 8 1248 278 338 2376 history2 2 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm 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 ASTM D5185m	1 2 1 5 1220 298 350 1995 <i>limit/base</i> >+100 >20	0 <1 0 10 1300 312 338 2362 <u>current</u> 2 0 2	0 0 11 1263 279 351 2369 history1 2 0 0	0 0 8 1248 278 338 2376 history2 2 0 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	1 2 1 5 1220 298 350 1995 limit/base >+100 >20 >20 >4.0	0 <1 0 10 1300 312 338 2362 current 2 0 2 0 2 0.0	0 0 11 1263 279 351 2369 history1 2 0 0 0 0	0 0 8 1248 278 338 2376 history2 2 0 0 0 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	1 2 1 5 1220 298 350 1995 limit/base >+100 >20 >4.0	0 <1 0 10 1300 312 338 2362 current 2 0 2 0 2 0.0 2 0.0	0 0 11 1263 279 351 2369 history1 2 0 0 0 0.0	0 0 8 1248 278 338 2376 history2 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	1 2 1 5 1220 298 350 1995 limit/base >+100 >20 >4.0	0 <1 0 10 1300 312 338 2362 <u>current</u> 2 0 2 0 0 2 0.0 2 0.0	0 0 11 1263 279 351 2369 history1 2 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 8 1248 278 338 2376 history2 2 0 0 0 0 0 0 0 0 0 0 0 0 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5824 ASTM D3524	1 2 1 5 1220 298 350 1995 limit/base >+100 	0 <1 0 10 1300 312 338 2362 <u>current</u> 2 0 2 0 2 0.0 2 0.0 2 0.0 3.5	0 0 11 1263 279 351 2369 history1 2 0 0 0 0.0 0 0.0 0 0.0 0 3.4	0 0 0 8 1248 278 338 2376 history2 2 0 0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	1 2 1 5 1220 298 350 1995 Imit/base >+100 >20 >4.0 Imit/base >20 >30 Imit/base	0 <1 0 10 1300 312 338 2362 current 2 0 2 0 2 0.0 2 0.0 0 2 0.0 1 3.5 13.9 current	0 0 11 1263 279 351 2369 history1 2 0 0 0 0.0 history1 0 3.4 14.0 history1	0 0 8 1248 278 338 2376 history2 2 0 0 0 0 0.0 history2 0 3.5 14.1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7614	1 2 1 5 1220 298 350 1995 <i>limit/base</i> >+100 >20 >4.0 <i>limit/base</i> >20 >30 <i>limit/base</i>	0 <1 0 10 1300 312 338 2362 current 2 0 2 0.0 2 0.0 2 0.0 2 0.0 3.5 13.9 3.5 13.9	0 0 11 1263 279 351 2369 history1 2 0 0 0 0 0.0 history1 0 3.4 14.0 history1 7.8	0 0 8 1248 278 338 2376 history2 2 0 0 0 0.0 history2 0 3.5 14.1 history2 7.8
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D3524 ASTM D3524 ASTM D78444 *ASTM D7624 *ASTM D7415	1 2 1 5 1220 298 350 1995 Imit/base >+100 >20 >4.0 Imit/base >20 >30 Imit/base	0 <1 0 10 1300 312 338 2362 current 2 0 2 0 2 0.0 2 0.0 0 2 0.0 1 3.5 13.9 current	0 0 11 1263 279 351 2369 history1 2 0 0 0 0.0 history1 0 3.4 14.0 history1	0 0 8 1248 278 338 2376 history2 2 0 0 0 0 0.0 history2 0 3.5 14.1

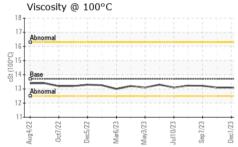


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	VISUAL		method	limit/base	current	history1	history2	
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE	
	Silt	scalar	*Visual	NONE	NONE	NONE	NONE	
Debris		scalar	*Visual	NONE	NONE	NONE	NONE	
Sand/Dirt		scalar	*Visual	NONE	NONE	NONE	NONE	
		scalar	*Visual	NORML	NORML	NORML	NORML	
Sep7/23 Dec1/23	Odor	scalar	*Visual	NORML	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	NEG	
	FLUID PROPE	RTIES	method	limit/base	e current	history1	history2	
\wedge	Visc @ 100°C	cSt	ASTM D445	13.7	13.0	13.1	13.1	
\smile	GRAPHS							
	Iron (ppm)				Lead (ppm)			
23 23	Severe				50 -			
Sep7/23 Dec1/23	co.				40			
	Automa			udd				
	20-				20-			
	0				0			
	Aug4/22 - 0ct7/22 - Dec5/22 -	May3/23	Jul10/23 Sep7/23	Dec1/23	Aug4/22 Oct7/22	Mar6/23 May3/23	Sep 7/23 Dec 1/23	
	Aug De Ma	Ma	Sey	De	Aug	Wa Wa	Sel	
1/	Aluminum (ppm)				Chromium (ppm)		
~	20				⁸			
	15 - Severe				6 - Severe		-	
52 52	and the second s				Abnormal			
Sep7/23 Dec1/23	5				2			
		$\sqrt{1}$						
	Aug4/22 - 0ct7/22 - 0ct7/22 - 0ct7/22 - 0	May3/23 -	Jul10/23 - Sep7/23 -	Dec1/23 -	Aug4/22 - 0ct7/22 -	Mar6/23 - May3/23 -	Sep7/23 -	
	Aug Oct Dec	May	Jul1 Sep	Dec	Aug Oct	May	Sep	
	Copper (ppm)				Silicon (ppm)		
	Severe							
	60-				50			
	E 40 - Abnormal			<u>ة</u> 1	00 - Abnormal			
	20 -				50			
Sep7/23 Dec1/23	0				0			
S 0	Aug4/22 0ct7/22 Dec5/22 Mar6/23	May3/23	Jul10/23 Sep7/23	Dec1/23	Aug4/22 - 0ct7/22 -	Mar6/23 May3/23	Sep 7/23 Dec 1/23	
		Ma	Ju Se	Ď			n s a	
	Viscosity @ 100°C				Base Number			
	Abnormal	1		Base Number (mg KOH/g)				
i de la compañía de la	2 ¹⁶ -			y Buu	6.0-	\sim		
	14 Base Abnormal			mber	4.0 - Hase	$\sqrt{-2}$	1	
	12			se Nur	2.0-			
	10			(0.0			
	Aug4/22 - 0ct7/22 - Dec5/22 -	May3/23	Jul10/23 Sep7/23	Dec1/23	Aug4/22 0ct7/22	Mar6/23 May3/23	Sep7/23 Sep7/23 Dec1/23	
	Au Mi	Ma	Se	õ	Au 0	W W	n Se	
Laboratory Sample No. Lab Number Unique Number	: 06057451	01 Madia Recieved Diagnose Diagnost	l :10 ed :12	ary, NC 275 ⁻ Jan 2024 Jan 2024 es Davis	13 ENER	V EST OPERATIN 2830 LAUREL B		
Test Package	: MOB 2 (Additional ⁻	Tests: Fu)	Contact: S	ervice Manager	

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)

Certificate L2367

Contact/Location: Service Manager - ENEVANH