

OIL ANALYSIS REPORT

Sample Rating Trend

DIRT



Machine Id GZJ00403 Component

Biogas Engine

PETRO CANADA SENTRON CG 40 (--- GAL)

Sample Number Client Info WC0699085 WC0699080 WC0699080 WC0699080 Sample Date hrs Client Info 21 Feb 2023 13 Feb 2023 06 Feb 2023 Machine Age hrs Client Info 767 575 411 Oil Age Lient Info N/A N/A N/A Sample Status Client Info N/A N/A ABNORMAL ABNORMAL ABNORMAL CONTAMINATION method Imit/base current history1 history1 Water WC Method 0.1 NEG NEG NEG Water WC Method 0.1 NEG NEG NEG Wickel ppm ASTM05185m >2 <1 1 1 Nickel ppm ASTM05185m >2 <1 1 1 Nickel ppm ASTM05185m >5 0 0 2 1 2 Irin oppm ASTM05185m >5 2 3 2	RON CG 40 (y2022 Jun20	22 Jul2022 Aug2022	Sep2022 Oct2022 Dec2022	Jan2023		
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Oil Age hrs Client Info 767 575 411 Oil Changed Client Info N/A N/A N/A Sample Status Imit Dase current history1 history2 Water WC Method >0.1 NEG NEG NEG Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185m >2 <1	Sample Date		Client Info		21 Feb 2023	13 Feb 2023	06 Feb 2023	
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Sulfur ppm ASTM D5185m 2575 3683 3638 3824 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >200 ▲ 398 ▲ 308 ▲ 239 Sodium ppm ASTM D5185m >200 ▲ 398 ▲ 308 ▲ 239 Sodium ppm ASTM D5185m >20 0 <1	Manganese Magnesium Calcium	ppm ppm	ASTM D5185m ASTM D5185m	1 9	<1 21 2958	2 <1 17 2966	<1 16 2934	
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Silicon ppm ASTM D5185m >200 ▲ 398 ▲ 308 ▲ 239 Sodium ppm ASTM D5185m 2 1 <1	Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 9 2712 292	<1 21 2958 280	2 <1 17 2966 303	<1 16 2934 284	
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Potassium ppm ASTM D5185m >20 0 <1 0 Fuel % ASTM D3524 >4.0 0.3 0.3 0.4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 5.2 4.9 4.6 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 18.5 17.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 10.7 9.7 8.9 Acid Number (AN) mg KOH/g ASTM D8045 0.98 0.99 1.01 0.575	Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 9 2712 292 342 2575	<1 21 2958 280 348 3683	2 <1 17 2966 303 359 3638	<1 16 2934 284 328 3824	
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Acid Number (AN) mg KOH/g ASTM D8045 0.98 0.99 1.01 0.575	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185m ASTM D51854 *ASTM D7844	1 9 2712 292 342 2575 limit/base >200 >20 >4.0 limit/base	<1 21 2958 280 348 3683 current 398 2 0 0.3 current 0.1 5.2	2 <1 17 2966 303 359 3638 history1 ▲ 308 1 <1 <1 0.3 history1 0.1 4.9	<1 16 2934 284 328 3824 history2 ▲ 239 <1 0 0.4 history2 0.1 4.6	
Acid Number (AN) mg KOH/g ASTM D8045 0.98 0.99 1.01 0.575	Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185m ASTM D51854 *ASTM D7844 *ASTM D7624	1 9 2712 292 342 2575 Iimit/base >200 >20 >4.0 Iimit/base	<1 21 2958 280 348 3683 current 398 2 0 0 0.3 current 0.1 5.2 19.9	2 <1 17 2966 303 359 3638 history1 ▲ 308 1 <1 0.3 0.1 4.9 18.5	<1 16 2934 284 328 3824 history2 ▲ 239 <1 0 0.4 history2 0.1 4.6 17.1	
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm 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 D5185m ASTM D3524 Method *ASTM D7844 *ASTM D7624 *ASTM D7415	1 9 2712 292 342 2575 imit/base >200 >20 >20 >4.0 imit/base >20 >30 imit/base	<1 21 2958 280 348 3683 current 398 2 0 0 0.3 current 0.1 5.2 19.9 current	2 <1 17 2966 303 359 3638 history1 ▲ 308 1 <1 <1 0.3 history1 0.1 4.9 18.5 history1	<1 16 2934 284 328 3824 history2 ▲ 239 <1 0 0.1 4.6 17.1 history2	
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7644 *ASTM D7614	1 9 2712 292 342 2575 imit/base >200 >20 >4.0 imit/base >20 >30 imit/base	<1 21 2958 280 348 3683 current 398 2 0 0 0.3 current 0.1 5.2 19.9 current 10.7	2 <1 17 2966 303 359 3638 history1 ▲ 308 1 <1 <1 0.3 history1 0.1 4.9 18.5 history1 9.7	<1 16 2934 284 328 3824 istory2 239 <1 0 0.1 4.6 17.1 history2 8.9	

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor. (Customer Sample Comment: Total oil added 53 gal)

Fluid

Wear

All component wear rates are normal.

Contamination

Fuel content negligible. Elemental level of silicon (Si) above normal.

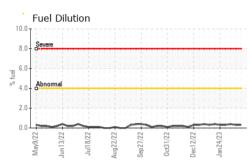
Fluid Condition

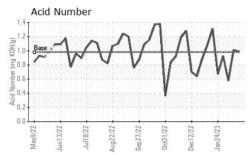
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

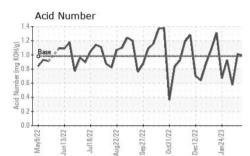
Submitted By: Blain Middleton

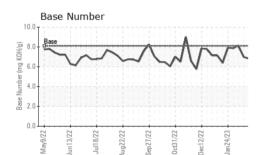


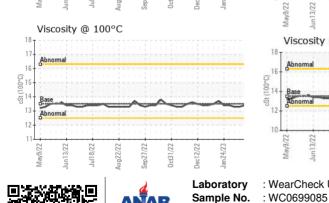
OIL ANALYSIS REPORT



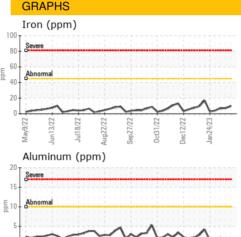


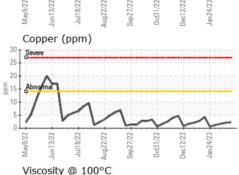






VISUAL method limit/base history1 history2 current NONE NONE White Metal *Visual NONE NONE scalar Yellow Metal NONE NONE NONE NONE scalar *Visual Precipitate scalar *Visua NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Debris *Visual NONE NONE NONE scalar NONE Sand/Dirt scalar *Visual NONE NONE NONE NORML Appearance *Visual NORML NORML NORML scalar Odor NORML NORML NORML scalar *Visual NORML *Visual **Emulsified Water** scalar >0.1 NEG NFG NEG Free Water scalar *Visual NEG NEG NEG FLUID PROPERTIES method limit/base current history history2 Visc @ 100°C cSt ASTM D445 13.5 13.4 13.3 13.3



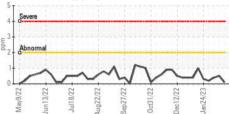


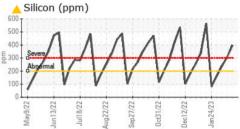
Sep27/22

Aun 22/23

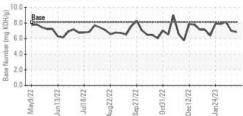


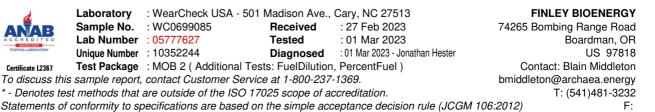






Base Number





Jan24/23

Dec12/22

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

18

10

Lab Number

Unique Number : 10352244

Mav9/22

: 05777627

Jun 13/22 CC/811

Certificate L2367