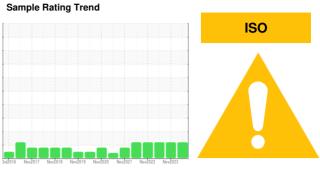


OIL ANALYSIS REPORT

AGING COOLER STROETER 23 - AGING COOLER (S/N 202004-0146)

Gearbox

PETRO CANADA PURITY FG SYN GEAR ISO 220 (5 LTR)



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is a high amount of silt (particulates < 14 microns in size) present in the oil.

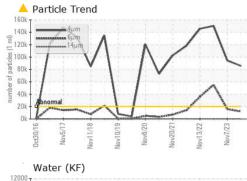
Fluid Condition

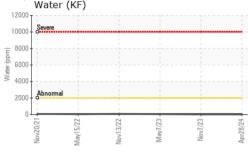
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

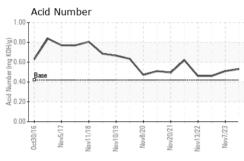
Sample Date Client Info 28 Apr 2024 07 Nov 2023 07 May 202 Machine Age mths Client Info 0 0 8 Oil Age mths Client Info 0 0 8 Oil Changed Client Info N/A N/A Not Change Sample Status ABNORMAL ABNORMAL ABNORMAL ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >200 13 11 36 Chromium ppm ASTM D5185m >215 <1 <1 <1 Nickel ppm ASTM D5185m >15 <1 <1 <1 <1 Nickel ppm ASTM D5185m >10 <1 <0 <1 <0 <1 <0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age miths	Sample Number		Client Info		USP0012468	USP0003878	USP249652
Machine Age miths			Client Info		28 Apr 2024	07 Nov 2023	07 May 2023
Dil Changed Dil Changed Dil Changed Satus Client Info N/A N/A Not Changed	Machine Age	mths	Client Info		-	0	
Dil Changed Client Info N/A ABNORMAL ASTMOBISS >200 13 11 36 36 36 36 36 36		mths	Client Info		0		
Bample Status method limit/base current history1 ABNORMAL VWEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >200 13 11 36 Chromium ppm ASTM D5185m >15 <1	-						Not Change
WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >200 13 11 36 Chromium ppm ASTM D5185m >15 <1	-						ABNORMAL
Chromium ppm ASTM D5185m >1.5 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1<	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >15 0 <1 <1 Colorada Colorada	ron	ppm	ASTM D5185m	>200	13	11	36
Distribution	Chromium	ppm	ASTM D5185m	>15	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>15	0	<1	<1
Silver	Titanium		ASTM D5185m		0	<1	0
All							
Lead ppm ASTM D5185m >100 0 0 0 Copper ppm ASTM D5185m >200 0 <1 0 Fin ppm ASTM D5185m >25 <1 <1 <1 Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 ADITIVES method limit/base current history1 history2 Barium ppm ASTM D5185m 0 0 3 3 Barium ppm ASTM D5185m 0 <1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td></td> <td></td> <td></td> <td>>25</td> <td></td> <td></td> <td></td>				>25			
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Tin					-		
Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Borron ppm ASTM D5185m 0 0 3 Borron ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 Magnesium ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 0 1 0 0 <1 <1 0 Calcium ppm ASTM D5185m 0 1 0 0 0 0 0 Phosphorus ppm ASTM D5185m 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0					_		-
Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 3 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 0 <1 <1 <1 0 Calcium ppm ASTM D5185m 0 1 0 0 Phosphorus ppm ASTM D5185m 0 0 0 0 0 Zinc ppm ASTM D5185m 0 0 0 0 0 Sulfur ppm ASTM D5185m 0 0 0 0 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 <t< td=""><td></td><td></td><td></td><td>720</td><td></td><td></td><td></td></t<>				720			
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 3 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 <1					-		
Boron ppm ASTM D5185m 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		ррпп					
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 <1 0 Manganese ppm ASTM D5185m 0 <1 <1 Magnesium ppm ASTM D5185m <1 <1 0 Calcium ppm ASTM D5185m 0 1 0 Phosphorus ppm ASTM D5185m 0 0 0 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 1013 1206 1917 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 23 2 2 Sodium ppm ASTM D5185m <1 0 <1 0 Potassium ppm ASTM D5185m <20 <1 1 2 Water % ASTM D5185m <20 <1 1 2 Vater % ASTM D5185m <20 <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td></td> <td></td> <td>3</td>	Boron	ppm	ASTM D5185m				3
Manganese ppm ASTM D5185m 0 <1 <1 Magnesium ppm ASTM D5185m <1 <1 0 Calcium ppm ASTM D5185m 0 1 0 Phosphorus ppm ASTM D5185m 0 0 0 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 0 0 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 23 2 2 Sodium ppm ASTM D5185m >50 23 2 2 Sodium ppm ASTM D5185m >20 <1 1 2 Vater % ASTM D5185m >20 <1 1 2 Water % ASTM D6304 >0.2 0.001 0.001 0.005 Particles >4µm ASTM D7647 >200		ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m <1 <1 0 Calcium ppm ASTM D5185m 0 1 0 Phosphorus ppm ASTM D5185m 431 431 436 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 1013 1206 1917 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 23 2 2 Sodium ppm ASTM D5185m >20 <1	Molybdenum	ppm	ASTM D5185m		0		0
Calcium ppm ASTM D5185m 0 1 0 Phosphorus ppm ASTM D5185m 431 431 436 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 1013 1206 1917 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 23 2 2 Sodium ppm ASTM D5185m >50 23 2 2 Potassium ppm ASTM D5185m >20 <1	Manganese	ppm	ASTM D5185m		0	<1	<1
Phosphorus ppm ASTM D5185m 431 431 436 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 1013 1206 1917 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 23 2 2 Sodium ppm ASTM D5185m >20 <1	Magnesium	ppm	ASTM D5185m		<1	<1	0
Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 1013 1206 1917 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 23 2 2 Sodium ppm ASTM D5185m >50 23 2 2 Potassium ppm ASTM D5185m >20 <1 0 <1 Potassium ppm ASTM D5185m >20 <1 1 2 Water % ASTM D6304 >0.2 0.001 0.001 0.005 Popm Water ppm ASTM D6304 >2000 6 13 59.2 FLUID CLEANLINESS method limit/base current history1 history2 Particles > 4µm ASTM D7647 >20000 85646 94315 150310 Particles > 51µm ASTM D7647 >640 111 51 <t< td=""><td>Calcium</td><td>ppm</td><td>ASTM D5185m</td><td></td><td>0</td><td>1</td><td>0</td></t<>	Calcium	ppm	ASTM D5185m		0	1	0
Sulfur ppm ASTM D5185m 1013 1206 1917 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 23 2 2 Sodium ppm ASTM D5185m >20 <1	Phosphorus	ppm	ASTM D5185m		431	431	436
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 23 2 2 Sodium ppm ASTM D5185m >20 <1	Zinc	ppm	ASTM D5185m		0	0	0
Silicon ppm ASTM D5185m >50 23 2 2 Sodium ppm ASTM D5185m >20 <1 0 0 <1 Potassium ppm ASTM D5185m >20 <1 1 2 Water % ASTM D6304 >0.2 0.001 0.001 0.005 ppm Water ppm ASTM D6304 >2000 6 13 59.2 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >20000 ▲ 85646 ▲ 94315 ▲ 150310 Particles >6μm ASTM D7647 >5000 ▲ 12189 ▲ 15762 ▲ 55045 Particles >14μm ASTM D7647 >640 111 51 40 Particles >21μm ASTM D7647 >160 15 9 5 Particles >38μm ASTM D7647 >40 2 0 0 Particles >71μm ASTM D7647 >10 1 0 0 Oil Cleanliness ISO 4406 (c) >21/19/16 ▲ 24/21/14 ▲ 24/21/13 ▲ 24/23/12 FLUID DEGRADATION method limit/base current history1 history2	Sulfur	ppm	ASTM D5185m		1013	1206	1917
Sodium ppm ASTM D5185m <1 0 <1	CONTAMINANTS	}	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1 1 2 Water % ASTM D6304 >0.2 0.001 0.001 0.005 opm Water ppm ASTM D6304 >2000 6 13 59.2 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >20000 ▲ 85646 ▲ 94315 ▲ 150310 Particles >6μm ASTM D7647 >5000 ▲ 12189 ▲ 15762 ▲ 55045 Particles >14μm ASTM D7647 >640 111 51 40 Particles >21μm ASTM D7647 >160 15 9 5 Particles >38μm ASTM D7647 >40 2 0 0 Particles >71μm ASTM D7647 >10 1 0 0 Particles >71μm ASTM D7647 >10 1 0 0 Particles >71μm ASTM D7647 >10 1 0 0	Silicon	ppm	ASTM D5185m	>50	23	2	2
Water % ASTM D6304 >0.2 0.001 0.001 0.005 opm Water ppm ASTM D6304 >2000 6 13 59.2 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >20000 ♣ 85646 ♠ 94315 ♠ 150310 Particles >6μm ASTM D7647 >5000 ♠ 12189 ♠ 15762 ♠ 55045 Particles >14μm ASTM D7647 >640 111 51 40 Particles >21μm ASTM D7647 >160 15 9 5 Particles >38μm ASTM D7647 >40 2 0 0 Particles >71μm ASTM D7647 >10 1 0 0 Oil Cleanliness ISO 4406 (c) >21/19/16 ▲ 24/21/14 ▲ 24/21/13 ▲ 24/23/12 FLUID DEGRADATION method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		<1	0	<1
Opm Water ppm ASTM D6304 >2000 6 13 59.2 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >20000 ▲ 85646 ▲ 94315 ▲ 150310 Particles >6μm ASTM D7647 >5000 ▲ 12189 ▲ 15762 ▲ 55045 Particles >14μm ASTM D7647 >640 111 51 40 Particles >21μm ASTM D7647 >160 15 9 5 Particles >38μm ASTM D7647 >40 2 0 0 Particles >71μm ASTM D7647 >10 1 0 0 Particles >71μm <td< td=""><td>Potassium</td><td>ppm</td><td>ASTM D5185m</td><td>>20</td><td><1</td><td>1</td><td>2</td></td<>	Potassium	ppm	ASTM D5185m	>20	<1	1	2
Opm Water ppm ASTM D6304 >2000 6 13 59.2 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >20000 ▲ 85646 ▲ 94315 ▲ 150310 Particles >6μm ASTM D7647 >5000 ▲ 12189 ▲ 15762 ▲ 55045 Particles >14μm ASTM D7647 >640 111 51 40 Particles >21μm ASTM D7647 >160 15 9 5 Particles >38μm ASTM D7647 >40 2 0 0 Particles >71μm ASTM D7647 >10 1 0 0 Particles >71μm <td< td=""><td>Water</td><td>%</td><td>ASTM D6304</td><td>>0.2</td><td>0.001</td><td>0.001</td><td>0.005</td></td<>	Water	%	ASTM D6304	>0.2	0.001	0.001	0.005
Particles >4μm ASTM D7647 >20000 ▲ 85646 ▲ 94315 ▲ 150310 Particles >6μm ASTM D7647 >5000 ▲ 12189 ▲ 15762 ▲ 55045 Particles >14μm ASTM D7647 >640 111 51 40 Particles >21μm ASTM D7647 >160 15 9 5 Particles >38μm ASTM D7647 >40 2 0 0 Particles >71μm ASTM D7647 >10 1 0 0 Oil Cleanliness ISO 4406 (c) >21/19/16 24/21/14 24/21/13 24/23/12 FLUID DEGRADATION method limit/base current history1 history2	opm Water		ASTM D6304	>2000	6	13	59.2
Particles >6μm ASTM D7647 >5000 ▲ 12189 ▲ 15762 ▲ 55045 Particles >14μm ASTM D7647 >640 111 51 40 Particles >21μm ASTM D7647 >160 15 9 5 Particles >38μm ASTM D7647 >40 2 0 0 Particles >71μm ASTM D7647 >10 1 0 0 Poil Cleanliness ISO 4406 (c) >21/19/16 Δ 24/21/14 Δ 24/21/13 Δ 24/23/12 FLUID DEGRADATION method limit/base current history1 history2	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
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Particles >14μm ASTM D7647 >640 111 51 40 Particles >21μm ASTM D7647 >160 15 9 5 Particles >38μm ASTM D7647 >40 2 0 0 Particles >71μm ASTM D7647 >10 1 0 0 Dil Cleanliness ISO 4406 (c) >21/19/16 24/21/14 24/21/13 24/23/12 FLUID DEGRADATION method limit/base current history1 history2			ASTM D7647	>5000	12189	<u>▲</u> 15762	<u></u> 55045
Particles >21μm ASTM D7647 >160 15 9 5 Particles >38μm ASTM D7647 >40 2 0 0 Particles >71μm ASTM D7647 >10 1 0 0 Dil Cleanliness ISO 4406 (c) >21/19/16 24/21/14 24/21/13 24/23/12 FLUID DEGRADATION method limit/base current history1 history2	Particles >6µm						
Particles >38μm ASTM D7647 >40 2 0 0 Particles >71μm ASTM D7647 >10 1 0 0 Dil Cleanliness ISO 4406 (c) >21/19/16 Δ 24/21/14 Δ 24/21/13 Δ 24/23/12 FLUID DEGRADATION method limit/base current history1 history2			ASTIVI D/04/				
Particles >71μm ASTM D7647 >10 1 0 0 Oil Cleanliness ISO 4406 (c) >21/19/16 ▲ 24/21/14 ▲ 24/21/13 ▲ 24/23/12 FLUID DEGRADATION method limit/base current history1 history2	Particles >14µm				15	9	5
Oil Cleanliness ISO 4406 (c) >21/19/16 ▲ 24/21/14 ▲ 24/21/13 ▲ 24/23/12 FLUID DEGRADATION method limit/base current history1 history2	Particles >14μm Particles >21μm		ASTM D7647	>160			
	Particles >14µm Particles >21µm Particles >38µm		ASTM D7647 ASTM D7647	>160 >40	2	0	0
	Particles >6µm Particles >14µm Particles >21µm Particles >38µm Particles >71µm Oil Cleanliness		ASTM D7647 ASTM D7647 ASTM D7647	>160 >40 >10	2	0	0
	Particles >14µm Particles >21µm Particles >38µm Particles >71µm Oil Cleanliness	TION	ASTM D7647 ASTM D7647 ASTM D7647 ISO 4406 (c)	>160 >40 >10 >21/19/16	2 1 ^ 24/21/14	0 0 \$\triangle 24/21/13\$	0 0 \$\triangle 24/23/12\$

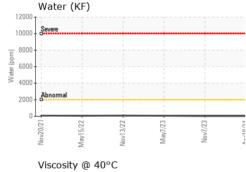


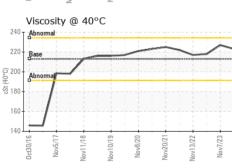
OIL ANALYSIS REPORT



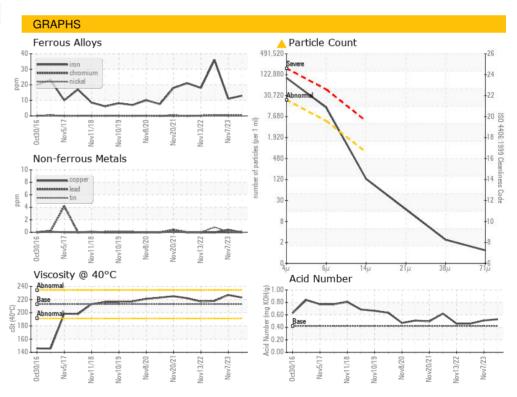








VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	TES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	213	223	227	218
SAMPLE IMAGES	3	method	limit/base	current	history1	history2
Color						







Certificate 12367

Laboratory Sample No.

Lab Number : 06202794 Unique Number : 11070255 Test Package : IND 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : USP0012468 Received : 07 Jun 2024

Tested : 11 Jun 2024 Diagnosed

: 11 Jun 2024 - Doug Bogart

Contact: DAVE BILLUPS dbillups@smartchicken.com T: (402)786-1000

333 SOUTH 3RD ST

TECUMSEH, NE

F: (402)335-2502

US 68450

TYSON - SMART CHICKEN MBA

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.

Bottom

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