PROBLEM SUMMARY



Sample Rating Trend

Machine Id **TB103** Component Hydraulic System Fluid PETRO CANADA HYDREX MV 46 (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	ABNORMAL	
Particles >4µm	ASTM D7647	>5000	6 54248	▲ 36065	
Particles >6µm	ASTM D7647	>1300	4 9457	6 351	
Particles >14µm	ASTM D7647	>160	<u> </u>	52	
Particles >21µm	ASTM D7647	>40	🔺 126	5	
Oil Cleanliness	ISO 4406 (c)	>19/17/14	e 23/20/16	A 22/20/13	

Customer Id: GFL286 Sample No.: PC0043710 Lab Number: 02524165 Test Package: IND 2



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To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

To change component or sample information: Gloria Gonzalez +1 (289)291-4643 x4643 gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS							
Action	Status	Date	Done By	Description			
Change Filter			?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.			
Resample			?	Resample in 30-45 days to monitor this situation.			
Information Required			?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.			
Check Breathers			?	The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather.			
Check Dirt Access			?	We advise that you check all areas where contaminants can enter the system.			
Filter Fluid			?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.			

HISTORICAL DIAGNOSIS

23 Apr 2020 Diag: Kevin Marson



The filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. Particles >4µm are abnormally high. Particles >6µm are abnormally high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.





OIL ANALYSIS REPORT



Machine Id TB103 Component **Hydraulic System** PETRO CANADA HYDREX MV 46 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

All component wear rates are normal.

Contamination

Oil Cleanliness are severely high. Particles >4µm are severely high. Particles >6µm are abnormally high. Particles >14 μ m are abnormally high. Particles >21µm are abnormally high.

Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PC0043710	PC0022633	
Sample Date		Client Info		14 Nov 2022	23 Apr 2020	
Machine Age	hrs	Client Info		7211	5600	
Oil Age	hrs	Client Info		0	0	
Oil Changed		Client Info		Not Changd	Changed	
Sample Status				SEVERE	ABNORMAL	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	2	2	
Chromium	ppm	ASTM D5185(m)	>10	0	<1	
Nickel	ppm	ASTM D5185(m)	>10	0	0	
Titanium	ppm	ASTM D5185(m)		0	<1	
Silver	ppm	ASTM D5185(m)		0	<1	
Aluminum	ppm	ASTM D5185(m)	>10	<1	<1	
Lead	ppm	ASTM D5185(m)	>10	<1	<1	
Copper	ppm	ASTM D5185(m)	>75	<1	1	
Tin	ppm	ASTM D5185(m)	>10	0	0	
Antimony	ppm	ASTM D5185(m)		0	<1	
Vanadium	ppm	ASTM D5185(m)		0	0	
Beryllium	ppm	ASTM D5185(m)		0	0	
Cadmium	ppm	ASTM D5185(m)		0	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	<1	<1	
Barium	ppm	ASTM D5185(m)	0	0	<1	
Molybdenum	ppm	ASTM D5185(m)	0	0	0	
Manganese	ppm	ASTM D5185(m)	1	0	<1	
Magnesium	ppm	ASTM D5185(m)	0	<1	1	
Calcium	ppm	ASTM D5185(m)	50	7	52	
Phosphorus						
	ppm	ASTM D5185(m)	330	575	319	
Zinc	ppm ppm	ASTM D5185(m) ASTM D5185(m)	330 430	575 58	319 405	
Zinc Sulfur	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	330430760	575 58 1267	319 405 815	
Zinc Sulfur Lithium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	330 430 760	575 58 1267 <1	319 405 815 <1	
Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm TS	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) method	330 430 760 limit/base	575 58 1267 <1 current	319 405 815 <1 history1	 history2
Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm ppm ppm TS	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) method ASTM D5185(m)	330 430 760 limit/base >20	575 58 1267 <1 current 3	319 405 815 <1 history1 7	 history2
Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm ppm ppm ppm TS ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m)	330 430 760 limit/base >20	575 58 1267 <1 <u>current</u> 3 <1	319 405 815 <1 history1 7 0	 history2
Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	330 430 760 limit/base >20 >20	575 58 1267 <1 <u>current</u> 3 <1 <1	319 405 815 <1 history1 7 0 <1	 history2
Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANI	ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) Method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	330 430 760 Iimit/base >20 S20 Iimit/base	575 58 1267 <1 current 3 <1 <1 <1 current	319 405 815 <1 history1 7 0 <1 history1	 history2 history2
Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANI Particles >4µm	ppm ppm ppm TS ppm ppm ppm LINESS	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7647	330 430 760 imit/base >20 >20 limit/base >5000	575 58 1267 <1 current 3 <1 <1 <1 current \$4248	319 405 815 <1 <u>history1</u> 7 0 <1 history1 ▲ 36065	 history2 history2 history2
Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANI Particles >4µm Particles >6µm	ppm ppm ppm TS ppm ppm ppm LINESS	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7647	330 430 760 imit/base >20 >20 imit/base >5000 >1300	575 58 1267 <1 current 3 <1 <1 <1 current € 54248 ▲ 9457	319 405 815 <1 history1 7 0 <1 + 1 history1 ▲ 36065 ▲ 6351	 history2 history2
Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANI Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm TS ppm ppm ppm _INESS	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647	330 430 760 limit/base >20 >20 limit/base >5000 >1300 >160	575 58 1267 <1 current 3 <1 <1 <1 current € 54248 ▲ 9457 ▲ 364	319 405 815 <1 history1 7 0 <1 //>	 history2 history2 history2
Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANI Particles >4µm Particles >6µm Particles >14µm Particles >21µm	ppm ppm ppm TS ppm ppm ppm LINESS	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	330 430 760 limit/base >20 limit/base >5000 >1300 >160 >40	575 58 1267 <1 current 3 <1 <1 <1 current € 54248 \$9457 \$364 \$126	319 405 815 <1 history1 7 0 <1 × 1 × 36065 ▲ 6351 52 5	 history2 history2 history2
Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANI Particles >4µm Particles >6µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm TS ppm ppm ppm LINESS	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	330 430 760 20 >20 20 <u>limit/base</u> >20 <u>limit/base</u> >5000 >1300 >160 >40 >10	575 58 1267 <1 current 3 <1 <1 <1 current € 54248 9457 364 126 8	319 405 815 <1 history1 7 0 <1 istory1 ▲ 36065 ▲ 6351 52 5 5 0	 history2 history2 history2
Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Potassium Particles >4µm Particles >4µm Particles >14µm Particles >21µm Particles >38µm Particles >71µm	ppm ppm ppm TS ppm ppm ppm LINESS	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	330 430 760 limit/base >20 limit/base >5000 >1300 >160 >40 >10 >3	575 58 1267 <1 current 3 <1 <1 <1 current 0 54248 ▲ 9457 ▲ 364 ▲ 126 8 1	319 405 815 <1 7 0 <1 1 history1 6351 52 5 0 0 0 0	history2 history2
Zinc Sulfur Lithium CONTAMINAN Solicon Sodium Potassium Potassium Patticles >4µm Particles >4µm Particles >6µm Particles >14µm Particles >38µm Particles >71µm Oil Cleanliness	ppm ppm ppm TS ppm ppm ppm LINESS	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ISO 4406 (c)	330 430 760 limit/base >20 20 limit/base >20 limit/base >20 20 20 20 20 20 20 20 20 20 20 20 20 2	575 58 1267 <1 Current 3 <1 <1 <1 Current 54248 ▲ 9457 ▲ 364 ▲ 126 8 1 1 € 23/20/16	319 405 815 <1 history1 7 0 <1 405 815 7 0 52 5 0 0 0 22/20/13 	history2 history2
Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANI Particles >4µm Particles >6µm Particles >6µm Particles >14µm Particles >21µm Particles >38µm Particles >71µm Oil Cleanliness	ppm ppm ppm TS ppm ppm ppm LINESS	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ISO 4406 (c) method	330 430 760 limit/base >20 >20 limit/base >5000 >1300 >160 >10 >10 >3 >19/17/14 limit/base	575 58 1267 <1 <1 3 <1 <1 <1 <1 € 0urrent \$54248 9457 364 126 8 1 126 8 1 1 \$23/20/16	319 405 815 <1 //////////////////////////////////	 history2 history2

Report Id: GFL286 [WCAMIS] 02524165 (Generated: 10/26/2023 10:13:59) Rev: 1

Contact/Location: Bill Acton - GFL286



OIL ANALYSIS REPORT







VISUAL		method	limit/base	current	history1	history2
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	VLITE	
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	
Appearance	scalar	Visual*	NORML	NORML	NORML	
Odor	scalar	Visual*	NORML	NORML	NORML	
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG	
Free Water	scalar	Visual*		NEG	NEG	
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	45.4	42.5	44.9	
Visc @ 100°C	cSt	ASTM D7279(m)	8.06	7.5	6.9	
Viscosity Index (VI)	Scale	ASTM D2270*	151	143	109	
SAMPLE IMAG	ES	method	limit/base	current	history1	history2
Color						no image
Bottom						no image
GRAPHS						
Ferrous Alloys			491 520	Particle Coun	t	-26
8 iron			101,520			20
6 - nickel			122,880	Severe		-24
2			30,720	- No		-22
°L			7,680	Abnormal		-20 2
23/20			14/22 ar 1 ml	· /:		10 440
Apr			Nov les (pe		`	+10 5
Non-ferrous Metal	S		otpued 480		1	-16 6
copper			ja 120	+		-14 E
6 - tin			E 30			-12 8
4						
			8	†		10
23/20			4/22			
Apr2			Nov1			
Viscosity @ 40°C				بم مرفع Acid Number	14μ Ζ1μ	30µ /1µ
Abnormal			(^B H0.80	Base		
0 + 0 Base			¥ 0.60			
			ම 0.40 දි			
Abnormal			N 0.20			
3/20			4/22 +	3/20		1/22
Apr2:			Jov14	Apr2:		Vov14

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Green Infrastructure and Partners Inc (GIPI) - 286 - Shoring & Foundations : PC0043710 Received : 22 Nov 2022 151 Ram Forest Rd, Stouffville, ON : 02524165 Diagnosed : 23 Nov 2022 Accredited Laboratory Unique Number : 5489146 Diagnostician : Wes Davis CA L4A 2G8 Test Package : IND 2 (Additional Tests: KV100, VI) Contact: Bill Acton To discuss this sample report, contact Customer Service at 1-800-268-2131. bacton@gipi.com Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: F:

Validity of results and interpretation are based on the sample and information as supplied.