

OIL ANALYSIS REPORT

Sample Rating Trend

ISO

Machine Id Or1984 Component Hydraulic System Fluid PETRO CANADA DURATRAN (115 LTR)

DIAGNOSIS

Recommendation

Check seals and/or filters for points of contaminant entry. 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. The filter change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation.

Wear

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

Additive levels indicate the addition of a different brand, or type of oil. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0113406	GFL0113298	
Sample Date		Client Info		01 Apr 2024	20 Mar 2024	
Machine Age	hrs	Client Info		11666	0	
Oil Age	hrs	Client Info		11666	0	
Oil Changed		Client Info		Changed	N/A	
Sample Status				SEVERE	SEVERE	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>65	35	34	
Chromium	ppm	ASTM D5185(m)	>6	0	0	
Nickel	ppm	ASTM D5185(m)	>10	0	<1	
Titanium	ppm	ASTM D5185(m)		0	0	
Silver	ppm	ASTM D5185(m)		0	0	
Aluminum	ppm	ASTM D5185(m)	>5	<1	0	
Lead	ppm	ASTM D5185(m)	>45	0	0	
Copper	ppm	ASTM D5185(m)	>120	2	3	
Tin	ppm	ASTM D5185(m)	>4	0	0	
Antimony	ppm	ASTM D5185(m)		0	0	
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
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base	current 98	history1	history2
	ppm ppm					
Boron		ASTM D5185(m)	110	98	105	
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	110 0.0 0.0	98 0	0 105	
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	110 0.0 0.0	98 0 0	 105 0 0 	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	110 0.0 0.0 1 13	98 0 0 0	 105 0 0 0 	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	110 0.0 0.0 1 13	98 0 0 0 15	 105 0 0 0 12 	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	110 0.0 0.0 1 13 3610	98 0 0 0 15 3354	 105 0 0 0 12 3364 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	110 0.0 1. 3610 1192	98 0 0 15 3354 732	 105 0 0 0 12 3364 705 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	110 0.0 1. 13 3610 1192 1455	98 0 0 15 3354 732 180	 105 0 0 0 12 3364 705 61 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	110 0.0 1. 13 3610 1192 1455	98 0 0 15 3354 732 180 2639	 105 0 0 0 12 3364 705 61 2692 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	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)	110 0.0 1 13 3610 1192 1455 2641	98 0 0 15 3354 732 180 2639 <1	 105 0 0 0 12 3364 705 61 2692 <1 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	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 D5185(m)	110 0.0 10 13 3610 1192 1455 2641 Jimit/base	98 0 0 15 3354 732 180 2639 <1 current	 105 0 0 12 3364 705 61 2692 <1 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	110 0.0 10.0 13 3610 1192 1455 2641 limit/base	98 0 0 15 3354 732 180 2639 <1 current 7	 105 0 0 12 3364 705 61 2692 <1 history1 7 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	110 0.0 10.0 13 3610 1192 1455 2641 limit/base	98 0 0 15 3354 732 180 2639 <1 <i>current</i> 7 2	 105 0 0 12 3364 705 61 2692 <1 history1 7 2 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	110 0.0 10 13 3610 1192 1455 2641 limit/base >25	98 0 0 15 3354 732 180 2639 <1 <i>current</i> 7 2 2 2	 105 0 0 12 3364 705 61 2692 <1 history1 7 2 <1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANI	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	110 0.0 1. 13 3610 1192 1455 2641 limit/base >25 >20	98 0 0 15 3354 732 180 2639 <1 <i>current</i> 7 2 2 2	 105 0 0 12 3364 705 61 2692 <1 Nistory1 7 2 <1 Nistory1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANI Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	110 0.0 1. 13 3610 1192 1455 2641 imit/base >25 imit/base >5000	98 0 0 15 3354 732 180 2639 <1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	 105 0 0 12 3364 705 61 2692 <1 7 2 <1 7 2 <1 6 6 6 6 6 10	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANI Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	110 0.0 1.0 13 3610 1192 1455 2641 2641 2641 255 264 20 20 20 100 25000 21300 21300 2160	98 0 0 10 15 3354 732 180 2639 <1	 105 0 0 12 3364 705 61 2692 <1 7 2 <1 7 2 <1 Nistory1 Nistory1 69385 < 5743	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Potassium Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647	110 0.0 1.0 13 3610 1192 1455 2641 2641 2641 255 264 20 20 20 100 25000 21300 21300 2160	98 0 0 15 3354 732 180 2639 <1 2639 <1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	 105 0 0 12 3364 705 61 2692 <1 history1 7 2 <1 history1 69385 5743 13 	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Potassium Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	110 0.0 1. 13 3610 1192 1455 2641 imit/base >25 20 imit/base >5000 >1300 >160 >40 >10	98 0 0 15 3354 732 180 2639 <1 2639 <1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	 105 0 0 12 3364 705 61 2692 <1 history1 7 2 <1 69385 5743 13 2 	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Potassium Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	110 0.0 1. 13 3610 1192 1455 2641 imit/base >25 20 imit/base >5000 >1300 >160 >40 >10	98 0 0 15 3354 732 180 2639 <1 Current 2 2 2 Current 2 2 2 Current 4 125014 4 514 79 23 3	 105 0 0 12 3364 705 61 2692 <1 Nistory1 7 2 <1 history1 69385 5743 13 2 1 	history2 history2 history2



140k € 120k

r of particles 80 60k umber 40k 20k Abnorm 0k Mar20/74

OIL ANALYSIS REPORT

4µm 6µm 14µm Abnomet Ho Ho Ho Ho Ho Ho Ho Ho Ho Ho Ho Ho Ho	White Meta Yellow Met Precipitate Silt Debris Sand/Dirt Appearanc Odor Emulsified Free Water	al scalar scalar scalar scalar scalar scalar	Visual* Visual* Visual* Visual* Visual* Visual* Visual*	NONE NONE NONE NONE NONE	NONE NONE NONE NONE NONE	NONE NONE NONE NONE	
Abnormal Additives	Precipitate Silt Debris Sand/Dirt Appearanc Odor Emulsified	scalar scalar scalar scalar scalar scalar	Visual* Visual* Visual* Visual*	NONE NONE NONE	NONE NONE	NONE NONE	
Additives	Precipitate Silt Debris Sand/Dirt Appearanc Odor Emulsified	scalar scalar scalar scalar scalar scalar	Visual* Visual* Visual* Visual*	NONE NONE NONE	NONE NONE	NONE NONE	
Additives	Silt Debris Sand/Dirt Appearanc Odor Emulsified	scalar scalar scalar scalar scalar	Visual* Visual* Visual*	NONE NONE	NONE	NONE	
Additives	Debris Sand/Dirt Appearanc Odor Emulsified	scalar scalar scalar	Visual* Visual*	NONE			
Additives	Band/Dirt Appearanc Odor Emulsified	scalar scalar	Visual*			NONE	
Additives	Appearanc Odor Emulsified	e scalar			NONE	NONE	
Additives	Emulsified			NORML	NORML	NORML	
Additives	Emulsified	Scalai		NORML	NORML	NORML	
calcium		Water scalar	Visual*	>0.1	NEG	NEG	
	Free water			>0.1	NEG	NEG	
			Visual*		NEG	NEG	
zinc		PROPERTIES		limit/base	current	history1	history2
	Visc @ 40°	C cSt	ASTM D7279(m)	55.14	55.5	▲ 55.4	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	SAMPL	E IMAGES	method	limit/base	current	history1	history2
Ma20/24	42/1/Jabe						no image
Viscosity @ 40°C Abnormal	Bottom						no image
Base	GRAPH	S					
	Ferrous A	lloys			Particle Cour	nt	
Abnormal	40	1.		491,520	¹ T		T ²¹
	30 - 30 -	mium		122,880			-24
Mar20/24	5 20 -	(el			Severe		
Mar	10			30,720	1.		-2
Additives				7.680	Abnormal		-2
	5	*****		24 ml)	Contonna		
calcium	Mar20/24			Apr1/24 (per 1 ml)			-11
zinc							1
	10 T	ous Metals		of barticles			-20 -18 -18 -14
	8 coj			9 120)-	(-1
	E 6+						
				30	1		T.
9 9	2				3-		-11
Mar20/24							
W	, Mar20/24			Apr1/24	2-		
	Mar2			Ap			6
	Viscosity	@ 40°C			4μ 6μ	14μ 21μ	38µ 71µ
	65 -	<u> </u>					
	Abnormal 60 -						
	D Base						
	(0.00) (0.00) 55 - Base Base			*****			
	50 Abnormal						
	45						
	:0/24			Apr1/24			
	Mar20/24			Api			
		004475 0					
CALA Laborat		C8-1175 Appleb		igton, ON L7I 3 Apr 2024	_ 5H9 GFL En	vironmental - 720 - L	Lafleche - Land Lafleche Roa

Accredited Unique Number : 5759597 Diagnosed : 05 Apr 2024 - Kevin Marson Laboratory Test Package : MOB 1 (Additional Tests: PrtCount) To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

CA KOC 1W0 Contact: Charles Bergeron cbergeron@gflenv.com T: (613)538-4853 F:

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