

OIL ANALYSI



Component **Front Differential**

PETRO CANADA TRAXON 80W90 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

A Wear

Gear wear is indicated. All other metal levels are typical for a new component breaking in.

Contamination

Moderate concentration of visible dirt/debris present in the oil.

Fluid Condition

The oil viscosity is lower than normal. This plus the additive levels indicates the addition of a different brand, or type of oil. Confirm oil type. The AN level is acceptable for this fluid.

SIS REPO	RT	Samp	le Rating Tre	end		WEAR
NC./OFF-RO	DAD					
				_		
)			Jul2023	0ct2023		
SAMPLE INFORM		method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0104375	PCA0090748	
Sample Date		Client Info		18 Oct 2023	03 Jul 2023	
Machine Age	hrs	Client Info		1145	778	
Oil Age	hrs	Client Info		1145	343	
Oil Changed		Client Info		N/A	N/A	
Sample Status				ABNORMAL	ABNORMAL	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>500	A 919	657	
Chromium	ppm	ASTM D5185m	>10	3	3	
Nickel	ppm	ASTM D5185m	>10	<1	0	
Titanium	ppm	ASTM D5185m		1	<1	
Silver	ppm	ASTM D5185m	0.5	0	0	
Aluminum	ppm	ASTM D5185m	>25	8	6	
Lead	ppm	ASTM D5185m	>25	<1	<	
Copper	ppm	ASTM D5185m	>100	29	46	
Vanadium	ppm	ASTM D5185m	>10	U 1	0	
Vallaululli	ppm	ASTIVI DOTODITI		<1	0	
Cadmium	nnm	ASTM D5185m		0	0	
	ppm	ASTM D5185m	limit/baco	0	0	
Cadmium ADDITIVES Descent	ppm	ASTM D5185m	limit/base	0 current	0 history1	history2
Cadmium ADDITIVES Boron Barium	ppm ppm	ASTM D5185m method ASTM D5185m	limit/base 243	0 current <1	0 history1 0	history2
Cadmium ADDITIVES Boron Barium Malubdonum	ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base 243 1	0 current <1 4	0 history1 0 5	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 243 1	0 current <1 4 14 10	0 history1 0 5 10 8	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 243 1	0 current <1 4 14 10 14	0 history1 0 5 10 8 11	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 243 1 2 6	0 current <1 4 14 10 14 3499	0 history1 0 5 10 8 11 3113	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 243 1 2 6 987	0 current <1 4 14 10 14 3499 1233	0 history1 0 5 10 8 11 3113 1064	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 243 1 2 6 987 1	0 current <1 4 14 10 14 3499 1233 1476	0 history1 0 5 10 8 11 3113 1064 1274	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 243 1 2 2 6 987 1 21530	0 current 4 14 10 14 3499 1233 1476 5640	0 history1 0 5 10 8 11 3113 1064 1274 4587	 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 243 1 2 6 987 1 21530 Limit/base	0 current <1 4 14 10 14 3499 1233 1476 5640 current	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1	 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	limit/base 243 1 2 2 6 987 1 21530 1 21530 21530	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10	 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	limit/base 243 1 2 6 987 1 21530 limit/base >75	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14 <1	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10 0	history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m	limit/base 243 1 2 6 987 1 21530 limit/base >75 >20	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14 <1 4	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10 0 2	history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 243 1 2 2 6 987 1 21530 1 21530 1 imit/base >20 limit/base	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14 <1 4 current	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10 0 2 history1	 history2 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID DEGRAE Acid Number (AN)	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base 243 1 2 6 987 1 21530 1 21530 21530 2 575 5 20 2 1 1.9	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14 <1 4 current 2.02	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10 0 2 history1 1.88	history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID DEGRAE Acid Number (AN) VISUAL	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base 243 1 2 2 6 987 1 21530 limit/base >75 >20 limit/base 1.9	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14 <1 4 current 2.02 current	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10 0 2 history1 1.88 history1	 history2 history2 history2 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID DEGRAE Acid Number (AN) VISUAL White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m XASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 243 1 2 6 987 1 21530 1 21530 1 imit/base 2.0 1.9 1.9 1.9	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14 <1 4 current 2.02 current NONE	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10 0 2 history1 1.88 history1 NONE	history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID DEGRAE Acid Number (AN) VISUAL White Metal Yellow Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m XASTM D5185m ASTM D518	limit/base 243 1 2 6 987 1 21530 1 21530 imit/base >75 >20 limit/base 1.9 1.9 NONE	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14 <14 <1 4 current 2.02 current NONE NONE	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10 0 2 history1 1.88 history1 1.88 history1 NONE NONE	history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID DEGRAD Acid Number (AN) VISUAL White Metal Yellow Metal Precipitate	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185	limit/base 243 1 243 2 3 2 6 987 1 2 1530 1 2 1530 2 1 3 2 1 5 20 1 2 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14 <1 4 current 2.02 current NONE NONE NONE	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10 0 2 history1 1.88 history1 1.88 history1 NONE NONE NONE	history2 history2 history2 history2 history2 history2 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID DEGRAD Acid Number (AN) VISUAL White Metal Yellow Metal Precipitate Silt	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m Comparing the	limit/base 243 1 2 6 987 1 21530 limit/base >75 >20 limit/base 1.9 NONE	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14 <1 4 current 2.02 current NONE NONE NONE NONE NONE	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10 0 2 history1 1.88 history1 1.88 history1 1.88 history1 NONE NONE NONE NONE NONE LIGHT	 history2 history2 history2 history2 history2 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID DEGRAD Acid Number (AN) VISUAL White Metal Precipitate Silt Debris	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m XIN D5185m ASTM D5185m ASTM D5185m ASTM D5185m XIN D5185m ASTM D5185	limit/base 243 1 243 1 2 6 987 1 21530 21530 375 375 320 limit/base 1.9 limit/base NONE	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14 <14 <14 2.02 current 2.02 current NONE NONE NONE NONE NONE NONE NONE	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10 0 2 history1 1.88 history1 1.88 history1 1.88 history1 1.88	history2 history2 history2 history2 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID DEGRAE Acid Number (AN) VISUAL White Metal Precipitate Silt Debris Sand/Dirt	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m XSTM D5185m ASTM D5185m ASTM D5185m XSTM D5185m ASTM D5185m ASTM D5185m XSTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m XSTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m XSTM D5185m ASTM D51	limit/base 243 1 2 6 987 1 21530 21530 21530 375 320 limit/base 1.9 Ionit/base NONE	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14 <14 <14 <2.02 current 2.02 current NONE NONE NONE NONE NONE NONE NONE NONE	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10 0 2 history1 1.88 history1 1.88 history1 1.88 history1 1.88 history1 1.88	history2 history2 history2 history2 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID DEGRAE Acid Number (AN) VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D51	Imit/base 243 1 2 6 987 1 21530 1 21530 3/5 3/5 3/5 3/5 3/5 1.9 Imit/base 1.9 Imit/base 1.9 NONE NORME	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14 <14 <14 <14 2.02 current 2.02 current NONE	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10 0 2 history1 10 0 2 history1 1.88 history1 1.00 history1 1.88 history1 1.88 history1 1.00 history1 1.88 history1 1.00 history1 1.00 history1 1.00 history1 1.00 history1 1.00 history1 h	history2 history2 history2 history2 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID DEGRAD Acid Number (AN) VISUAL VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D51	Imit/base 243 1 2 6 987 1 21530 Imit/base >75 >20 Imit/base >20 Imit/base NONE NORML NORML	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14 <14 <14 <2.02 current 2.02 current NONE NORML	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10 0 2 history1 10 0 2 history1 1.88 history1 1.88 history1 1.88 history1 1.88 LIGHT NONE NONE NONE NONE NONE NONE NONE NON	history2 history2 i
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Calcium Phosphorus CONTAMINAN Silicon Sodium Potassium FLUID DEGRAD Acid Number (AN) VISUAL VISUAL Vhite Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m method ASTM D8045 method *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	Imit/base 243 1 2 6 987 1 21530 Imit/base >75 20 Imit/base >75 987 1.9 Imit/base NONE NORML NORML >.2	0 current <1 4 14 10 14 3499 1233 1476 5640 current 14 <14 <14 <2.02 current 2.02 current NONE NORE NEG	0 history1 0 5 10 8 11 3113 1064 1274 4587 history1 10 0 2 history1 10 0 2 history1 1.88 history1 his	 history2 i history2 history2



OIL ANALYSIS REPORT



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