

OIL ANALYSIS REPORT

Sample Rating Trend



NO UNIT PC0081246

Gearbox

PETRO CANADA ENDURATEX EP 220 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

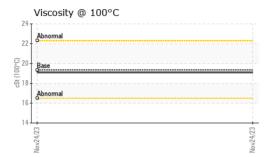
Fluid Condition

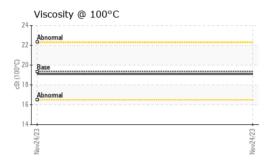
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

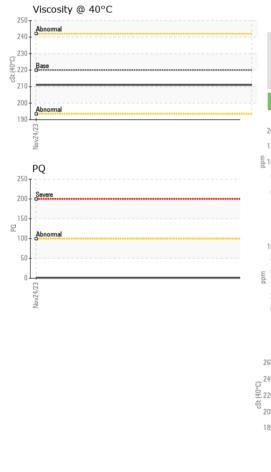
SAMPLE INFORMATION method imit/base current history1 history2 Sample Number Client Info 24 Nov 2023 Machine Age hrs Client Info 0 Oil Age hrs Client Info 0 Oil Age hrs Client Info 0 Oil Changed Client Info N/A Sample Status Imit/base current history1 history2 Water WC Method >0.2 NEG VEAR METALS method imit/base current history1 history2 PQ ASTM 0516/m 200 17 Intanium ppm ASTM 0516/m >15 0 Silver ppm ASTM 0516/m >10 0 Silver ppm ASTM	GAL)				Nov2023		
Sample Date Client Info 24 Nov 2023 Machine Age hrs Client Info 0 Oil Age hrs Client Info 0 Sample Status Image Client Info N/A Sample Status Image Client Info N/A CONTAMINATION method Imit/base current history1 history2 Water WC Method >0.2 NEG Wetar WC Method >0.2 NEG Nickel ppm ASTM D5156m 1 Nickel ppm ASTM D5156m >15 0 Silver ppm ASTM D5156m >25 <1 Copper ppm ASTM D5156m >200 Antimony ppm	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 Oil Age hrs Client Info N/A Sample Status Imit/base Current History1 History2 Water WC Method >0.2 NEG Weter WC Method >0.2 NEG Vetar WC Method >0.2 NEG Vetar WC Method >0.2 NEG Vetar MC Method >0 11 Iron ppm ASTM D5185(m) >200 17 Nickel ppm ASTM D5185(m) >10 Nickel ppm ASTM D5185(m) >10 Aurninum ppm ASTM D5185(m) >20 Aurninum ppm ASTM D5185(m)	Sample Number		Client Info		PC0081246		
Oil Age hrs Client Info 0 Sample Status Client Info N/A Sample Status Imit/base ourrent history1 History2 Water WC Method >.0.2 NEG WEAR METALS method limit/base current history1 history2 PQ ASTM D6184/m 1 Torn ppm ASTM D6186/m >200 177 Chromium ppm ASTM D6186/m >15 0 Nickel ppm ASTM D6186/m >20 -1 Auminum ppm ASTM D6186/m >20 -1 Lead ppm ASTM D6186/m >20 -1 Lead ppm ASTM D6186/m >20 Antimom ppm	Sample Date		Client Info		24 Nov 2023		
Oil Changed Client Info N/A Sample Status nethod limit/base current history1 history2 Water WC Method >0.2 NEG WEAR METALS method limit/base current history1 history2 PQ ASTM D6184/ 1 Iron ppm ASTM D6185(m) >200 177 Chromium ppm ASTM D6185(m) >15 0 Nickel ppm ASTM D6185(m) >15 0 Silver ppm ASTM D6185(m) >255 <1 Lead ppm ASTM D6185(m) >200 <1 Copper ppm ASTM D6185(m) >20 <1 Qandium ppm ASTM D6185(m) 0 Simony	Machine Age	hrs	Client Info		0		
Sample Status NORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG WEAR METALS method limit/base current history1 history2 PQ ASTM D8184* 1 Iron ppm ASTM D5185(m) >200 17 Nickel ppm ASTM D5185(m) >15 0 Silver ppm ASTM D5185(m) >100 0 Aluminum ppm ASTM D5185(m) >200 <1	Oil Age	hrs	Client Info		0		
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG WEAR METALS method limit/base current history1 history2 PQ ASTM D8168/m >200 17 Chromium ppm ASTM D5165/m >15 0 Nickel ppm ASTM D5165/m 0 Nickel ppm ASTM D5165/m 200 11 Aduminum ppm ASTM D5165/m >25 <1	Oil Changed		Client Info		N/A		
Water WC Method >0.2 NEG WEAR METALS method limit/base current history1 history2 PQ ASTM D8184' 1 Chromium ppm ASTM D8185(m) >15 0 Nickel ppm ASTM D5185(m) >15 0 Nickel ppm ASTM D5185(m) >15 0 Aluminum ppm ASTM D5185(m) >25 <1	Sample Status				NORMAL		
WEAR METALS method limit/base current history1 history2 PQ ASTM D8184' 1 Iron ppm ASTM D5185(m) >200 17 Chromium ppm ASTM D5185(m) >15 0 Nickel ppm ASTM D5185(m) 0 Silver ppm ASTM D5185(m) >25 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
PQ ASTM D8184* 1 Iron ppm ASTM D5185(m) >200 17 Chromium ppm ASTM D5185(m) >15 0 Nickel ppm ASTM D5185(m) >15 0 Silver ppm ASTM D5185(m) >25 <1	Water		WC Method	>0.2	NEG		
Iron ppm ASTM D5185(m) >200 17 Chromium ppm ASTM D5185(m) >15 0 Nickel ppm ASTM D5185(m) >15 0 Silver ppm ASTM D5185(m) >15 0 Aluminum ppm ASTM D5185(m) >25 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Chromium ppm ASTM D5185(m) >15 0 Nickel ppm ASTM D5185(m) >15 0 Titanium ppm ASTM D5185(m) 0 Silver ppm ASTM D5185(m) >25 <1	PQ		ASTM D8184*		1		
Nickel ppm ASTM D5185(m) >15 0 Titanium ppm ASTM D5185(m) 0 Silver ppm ASTM D5185(m) >25 <1	Iron	ppm	ASTM D5185(m)	>200	17		
Titanium ppm ASTM D5185(m) 0 Silver ppm ASTM D5185(m) <1	Chromium	ppm	ASTM D5185(m)	>15	0		
Silver ppm ASTM D5185(m) <1 Aluminum ppm ASTM D5185(m) >25 <1	Nickel	ppm	ASTM D5185(m)	>15	0		
Aluminum ppm ASTM D5185(m) >25 <1 Lead ppm ASTM D5185(m) >100 0 Copper ppm ASTM D5185(m) >200 <1	Titanium	ppm	ASTM D5185(m)		0		
Lead ppm ASTM D5185(m) >100 0 Copper ppm ASTM D5185(m) >200 <1	Silver	ppm	ASTM D5185(m)		<1		
Copper ppm ASTM D5186(m) >200 <1 Tin ppm ASTM D5188(m) >25 0 Antimony ppm ASTM D5188(m) >5 0 Vanadium ppm ASTM D5188(m) 0 Beryllium ppm ASTM D5188(m) 0 Cadmium ppm ASTM D5188(m) 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5188(m) 0 Molybdenum ppm ASTM D5188(m) 0 0 Magnesium ppm ASTM D5188(m) 0 0 Calcium ppm ASTM D5188(m) 0 2 Sulfur ppm ASTM D5188(m)	Aluminum	ppm	ASTM D5185(m)	>25	<1		
Tin ppm ASTM D5185(m) >25 0 Antimony ppm ASTM D5185(m) >5 0 Vanadium ppm ASTM D5185(m) 0 Beryllium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 0 0 Malybdenum ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 270 246	Lead	ppm	ASTM D5185(m)	>100	0		
Antimony ppm ASTM D5185(m) >5 0 Vanadium ppm ASTM D5185(m) 0 Beryllium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 60 61 Barium ppm ASTM D5185(m) 0 0 Manganese ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 Calcium ppm ASTM D5185(m) 0 3 Sulfur ppm ASTM D5185(m) 0 3	Copper	ppm	ASTM D5185(m)	>200	<1		
Vanadium ppm ASTM D5185(m) 0 Beryllium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 60 61 Barium ppm ASTM D5185(m) 0 <1	Tin	ppm	ASTM D5185(m)	>25	0		
Beryllium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 60 61 Barium ppm ASTM D5185(m) 0 <1 Molybdenum ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 0 Magnesium ppm ASTM D5185(m) 0 0 0 Calcium ppm ASTM D5185(m) 0 0 2 Phosphorus ppm ASTM D5185(m) 0 3 Sulfur ppm ASTM D5185(m) 11200 55277 Lithium ppm ASTM	Antimony	ppm	ASTM D5185(m)	>5	0		
Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 60 61 Barium ppm ASTM D5185(m) 0 <1 Barium ppm ASTM D5185(m) 0 o <1 Molybdenum ppm ASTM D5185(m) 0 0 Manganese ppm ASTM D5185(m) 0 0 0 Magnesium ppm ASTM D5185(m) 0 0 2 Calcium ppm ASTM D5185(m) 0 2 Calcium ppm ASTM D5185(m) 0 3 Sulfur ppm ASTM D5185(m) 11200 5527 Lithium	Vanadium	ppm	ASTM D5185(m)		0		
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185(m)6061BariumppmASTM D5185(m)0<1	Beryllium	ppm	ASTM D5185(m)		0		
Boron ppm ASTM D5185(m) 60 61 Barium ppm ASTM D5185(m) 0 <1	Cadmium	ppm	ASTM D5185(m)		0		
Barium ppm ASTM D5185(m) 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185(m) 0 0 Manganese ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 Calcium ppm ASTM D5185(m) 0 0 Calcium ppm ASTM D5185(m) 0 2 Calcium ppm ASTM D5185(m) 0 2 Phosphorus ppm ASTM D5185(m) 270 246 Zinc ppm ASTM D5185(m) 0 3 Sulfur ppm ASTM D5185(m) 11200 5527 Lithium ppm ASTM D5185(m) <t1< td=""> Silicon ppm ASTM D5185(m) >50 8 Sodium ppm ASTM D5185(m) >20<!--</td--><td>Boron</td><td>ppm</td><td>ASTM D5185(m)</td><td>60</td><td>61</td><td></td><td></td></t1<>	Boron	ppm	ASTM D5185(m)	60	61		
Manganese ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 Calcium ppm ASTM D5185(m) 0 2 Calcium ppm ASTM D5185(m) 0 2 Phosphorus ppm ASTM D5185(m) 270 246 Zinc ppm ASTM D5185(m) 0 3 Zinc ppm ASTM D5185(m) 11200 5527 Sulfur ppm ASTM D5185(m) 11200 5527 Lithium ppm ASTM D5185(m) <dt<td><1</dt<td>	Barium	ppm	ASTM D5185(m)	0	<1		
Magnesium ppm ASTM D5185(m) 0 0 Calcium ppm ASTM D5185(m) 0 2 Phosphorus ppm ASTM D5185(m) 0 2 Zinc ppm ASTM D5185(m) 0 3 Zinc ppm ASTM D5185(m) 0 3 Sulfur ppm ASTM D5185(m) 11200 55277 Lithium ppm ASTM D5185(m) 11200 55277 Silicon ppm ASTM D5185(m) <1	Molybdenum	ppm	ASTM D5185(m)	0	0		
Calcium ppm ASTM D5185(m) 0 2 Phosphorus ppm ASTM D5185(m) 270 246 Zinc ppm ASTM D5185(m) 0 3 Sulfur ppm ASTM D5185(m) 11200 5527 Lithium ppm ASTM D5185(m) 11200 5527 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 8 Sodium ppm ASTM D5185(m) >20 <1	Manganese	ppm	ASTM D5185(m)	0	0		
Calcium ppm ASTM D5185(m) 0 2 Phosphorus ppm ASTM D5185(m) 270 246 Zinc ppm ASTM D5185(m) 0 3 Sulfur ppm ASTM D5185(m) 11200 5527 Lithium ppm ASTM D5185(m) 11200 5527 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 8 Sodium ppm ASTM D5185(m) >20 <1	Magnesium	ppm	ASTM D5185(m)	0	0		
Phosphorus ppm ASTM D5185(m) 270 246 Zinc ppm ASTM D5185(m) 0 3 Sulfur ppm ASTM D5185(m) 11200 5527 Lithium ppm ASTM D5185(m) 11200 5527 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 8 Sodium ppm ASTM D5185(m) >20 <1	-		ASTM D5185(m)	0	2		
Sulfur ppm ASTM D5185(m) 11200 5527 Lithium ppm ASTM D5185(m) <1	Phosphorus		ASTM D5185(m)	270	246		
LithiumppmASTM D5185(m)<1CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185(m)>508SodiumppmASTM D5185(m)<1	Zinc	ppm	ASTM D5185(m)	0	3		
LithiumppmASTM D5185(m)<1CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185(m)>508SodiumppmASTM D5185(m)<1	Sulfur	ppm	ASTM D5185(m)	11200	5527		
Silicon ppm ASTM D5185(m) >50 8 Sodium ppm ASTM D5185(m) < <1 Potassium ppm ASTM D5185(m) >20 <1 FLUID DEGRADATION method limit/base current history1 history2	Lithium		ASTM D5185(m)		<1		
Sodium ppm ASTM D5185(m) <1	CONTAMINAN	TS	method	limit/base	current	history1	history2
Sodium ppm ASTM D5185(m) <1 Potassium ppm ASTM D5185(m) >20 <1 FLUID DEGRADATION method limit/base current history1 history2	Silicon	ppm	ASTM D5185(m)	>50	8		
Potassium ppm ASTM D5185(m) >20 <1 FLUID DEGRADATION method limit/base current history1 history2			. ,				
			. ,	>20			
Acid Number (AN) mg KOH/g ASTM D974* 0.40 0.42	FLUID DEGRAD	DATION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D974*	0.40	0.42		



OIL ANALYSIS REPORT







VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE		
Yellow Metal	scalar	Visual*	NONE	NONE		
Precipitate	scalar	Visual*	NONE	NONE		
Silt	scalar	Visual*	NONE	NONE		
Debris	scalar	Visual*	NONE	VLITE		
Sand/Dirt	scalar	Visual*	NONE	NONE		
Appearance	scalar	Visual*	NORML	NORML		
Odor	scalar	Visual*	NORML	NORML		
Emulsified Water	scalar	Visual*	>0.2	NEG		
Free Water	scalar	Visual*		NEG		
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
√isc @ 40°C	cSt	ASTM D7279(m)	220	211		
Visc @ 100°C	cSt	ASTM D7279(m)	19.35	19.1		
Viscosity Index (VI)	Scale	ASTM D2270*	99	101		
SAMPLE IMAG	EQ	method	limit/base	ourropt	biotonut	history 2
SAMPLE IMAG	23	method	iinii/base	current	history1	history2
Color				-	no image	no image
Bottom					no image	no image
GRAPHS	-					
Ferrous Alloys				PQ		
I			220			
iron chromium			200	Severe		
nickel			180	+		
			160			
53	*******		E 140	-		
Nav24/23			0 Nov24/23			
—	_		원 원 100	Abnormal		
Non-ferrous Metals	5		80			
copper			60			
seeses tin			40			
· - · · · · · · · · · · · · · · · · · · ·			20			
Nav24/23			Nov24/23	4/23		4 D 2 .
			Nov	Nov24/23		COP COM
Viscosity @ 40°C				Acid Number		
Abnormal			(b)HO30 HO30	Base		
Base			٤ 0.30			
Abnormal			e 0.20	+		
			≥ 0.10			
Nov24/23			24/23	Nov24/23 -		CC PC Y
Novž			Nov24/23	Novi		Civoly
02599519	75 Apple Received Diagnose Diagnost	d : 28 ed : 29	ington, ON L Nov 2023 Nov 2023 s Davis	7L 5H9		ohn`s Brewer 60 Leslie Stree St John`s, Ni CA A1E 2V8

60 Leslie Street St John's, NL CA A1E 2V8 Contact: Kevin Morden kevin.morden@labatt.com T: (709)579-0124 F: (709)579-2018

CALA

ISO 17025:2017 Accredited Laboratory

Laboratory

Sample No. Lab Number

Unique Number