

OIL ANALYSIS REPORT

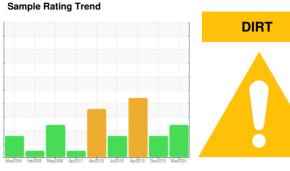
Area

Gas Compression [450264293]

Pump - Crude Oil Recirc - NDE Bearing (S/N Sample Tag PA-22001-NDE)

Pump

PETRO CANADA TURBOFLO XL32 (1 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. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear

Copper ppm levels are abnormal.

Contamination

Elemental level of silicon (Si) above normal indicating ingress of seal material and/or dirt.

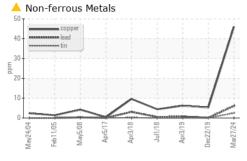
Fluid Condition

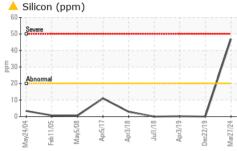
The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

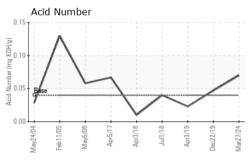
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SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PC0080243	PC	PC
Sample Date		Client Info		27 Mar 2024	22 Dec 2019	03 Apr 2019
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
CONTAMINATI	ION	method	limit/base	current	history1	history2
Water		WC Method	>.1	NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>75	12	15	6
Chromium	ppm	ASTM D5185(m)	>5	0	<1	0
Nickel	ppm	ASTM D5185(m)		0	0	0
Titanium	ppm	ASTM D5185(m)		<1	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>5	<1	<1	0
Lead	ppm	ASTM D5185(m)	>10	6	<1	<1
Copper	ppm	ASTM D5185(m)		<u> </u>	5	6
Tin	ppm	ASTM D5185(m)	710	2	0	0
Antimony	ppm	ASTM D5185(m)		0	<1	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0
Gaurillarii	ppiii	AO HVI DO TOO(III)				U
4 D D I T I V I T O		` '				
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	` '	limit/base			history2 <1
	ppm ppm	method	0	current	history1	
Boron		method ASTM D5185(m)	0	current <1	history1 <1	<1
Boron Barium	ppm	method ASTM D5185(m) ASTM D5185(m)	0 0 0	current <1 0	history1 <1 0	<1
Boron Barium Molybdenum	ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0	current <1 0 0	history1 <1 0 0	<1 0 0
Boron Barium Molybdenum Manganese	ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0 0	<pre>current <1 0 0 0 0</pre>	history1 <1 0 0 <1 <1	<1 0 0 0 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0 0	current <1 0 0 0 0 0 0 0	history1 <1 0 0 <1 <1 0	<1 0 0 0 <1 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 0 0 0	current <1 0 0 0 0 <1	history1 <1 0 0 <1 0 <11 0 <1	<1 0 0 0 <1 <1 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	method ASTM D5185(m)	0 0 0 0 0 0	current <1 0 0 0 0 <1 4	history1 <1 0 0 <1 0 <1 4	<1 0 0 0 <1 <1 <1 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	0 0 0 0 0 0 0 5	current <1 0 0 0 0 <1 4 8	history1 <1 0 0 <1 0 <1 4 6	<1 0 0 <1 <1 5 16
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	Method ASTM D5185(m)	0 0 0 0 0 0 0 5	current <1 0 0 0 0 0 <1 4 8 574	history1 <1 0 0 <1 0 <1 4 6 571	<1 0 0 <1 <1 5 16 8 556
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	0 0 0 0 0 0 0 5 0 750	current <1 0 0 0 0 0 <1 4 8 574 <1	history1 <1 0 0 <1 0 <1 4 6 571 <1	<1 0 0 <1 <1 5 16 8 556
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	0 0 0 0 0 0 5 0 750	current <1 0 0 0 0 0 <1 4 8 574 <1 current	history1 <1 0 0 <1 0 <1 4 6 571 <1 history1	<1 0 0 0 <1 <1 <1 5 16 8 556 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	0 0 0 0 0 0 5 0 750	current <1 0 0 0 0 0 <1 4 8 574 <1 current 47	history1 <1 0 0 <1 0 <1 4 6 571 <1 history1 0	<1 0 0 0 <1 <1 <1 5 16 8 556 0 history2 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	0 0 0 0 0 0 5 0 750	current <1 0 0 0 0 0 <1 4 8 574 <1 current 47 <1	history1 <1 0 0 <1 0 <1 4 6 571 <1 history1 0 <1	<1 0 0 0 <1 <1 5 16 8 556 0 history2 <1 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	0 0 0 0 0 0 5 0 750 limit/base >20	current <1 0 0 0 0 0 <1 4 8 574 <1 current 47 <1 0	history1 <1 0 0 0 <1 0 <1 4 6 571 <1 history1 0 <1 <1	<1 0 0 0 <1 <1 <1 5 16 8 556 0 history2 <1 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANL	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) method ASTM D5185(m)	0 0 0 0 0 0 5 0 750 limit/base >20	current <1 0 0 0 0 0 <1 4 8 574 <1 current 47 <10 current	history1 <1 0 0 <1 0 <1 4 6 571 <1 history1 0 <1 <1 history1	<1 0 0 0 <1 <1 <1 5 16 8 556 0 history2 <1 0 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANL Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) method ASTM D5185(m)	0 0 0 0 0 0 5 0 750 limit/base >20 limit/base	current <1 0 0 0 0 0 <1 4 8 574 <1 current ▲ 47 <1 0 current 187416	history1 <1 0 0 <1 0 <1 4 6 571 <1 history1 0 <1	<1 0 0 0 <1 <1 <1 5 16 8 556 0 history2 <1 0 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANL Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) method 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) ASTM D5185(m)	0 0 0 0 0 0 5 0 750 limit/base >20 limit/base	current <1 0 0 0 0 0 <1 4 8 574 <1 current 47 <1 0 current 187416 95968	history1 <1 0 0 0 <1 0 <1 4 6 571 <1 history1 0 <1	<1 0 0 0 <1 <1 <1 5 16 8 556 0 history2 <1 0 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANL Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) method 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) ASTM D5185(m) ASTM D7647 ASTM D7647	0 0 0 0 0 0 5 0 750 limit/base >20 limit/base >2500 >160	current <1 0 0 0 0 0 <1 4 8 574 <1 current 47 <1 0 current 187416 95968 319	history1 <1 0 0 0 <1 0 <1 4 6 571 <1 history1 0 <1	<1 0 0 0 <1 <1 <1 5 16 8 556 0 history2 <1 0 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium FLUID CLEANL Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) method ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647	0 0 0 0 0 0 5 0 750 limit/base >20 limit/base >2500 >160 >40	current <1 0 0 0 0 0 <1 4 8 574 <1 current ▲ 47 <1 0 current 187416 95968 319 47	history1 <1 0 0 0 <1 0 <1 4 6 571 <1 history1 0 <1	<1 0 0 0 <1 <1 5 16 8 556 0 history2 <1 0 0 history2

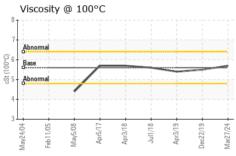


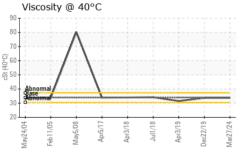
OIL ANALYSIS REPORT











FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.04	0.07	0.047	0.023
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	VLITE	▲ LIGHT
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	VLITE	LIGHT
Sand/Dirt	scalar	Visual*	NONE	VLITE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>.1	NEG	.5%	<u>.5%</u>
Free Water	scalar	Visual*		NEG	<u></u> 1%	<u>^</u> .5%
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	33.86	33.7	33.7	31.5
Visc @ 100°C	cSt	ASTM D7279(m)	5.60	5.7	5.5	5.4
Viscosity Index (VI)	Scale	ASTM D2270*	101	108	97	105
SAMPLE IMAG	ES	method	limit/base	current	history1	history2
Color					#16- NO \$123 A	11342 12001 12001 12000 12000 12000



CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No.

: PC0080243 Lab Number : 02631148 Unique Number : 5772301

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Received : 24 Apr 2024

Tested : 25 Apr 2024 Diagnosed : 25 Apr 2024 - Kevin Marson

Test Package : MAR 2 (Additional Tests: KV100, PrtCount, TAN Man, VI)

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.

Bottom

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