



OIL ANALYSIS REPORT

WEAR	SEVERE
CONTAMINATION	ABNORMAL
FLUID CONDITION	SEVERE

Area

[6252427]

Machine Id

1501-PR11-FC03 (S/N 3311)

Component

Reduction Gear

Fluid

PETRO CANADA ENDURATEX EP 220 (--- GAL)

RECOMMENDATION

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. The oil change at the time of sampling has been noted. 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 advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

WEAR

Copper and tin ppm levels are severe. Nickel ppm levels are abnormal. Bearing and/or bushing wear is indicated.

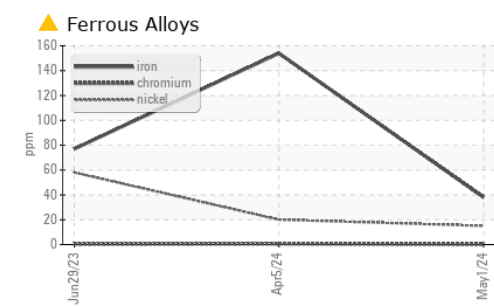
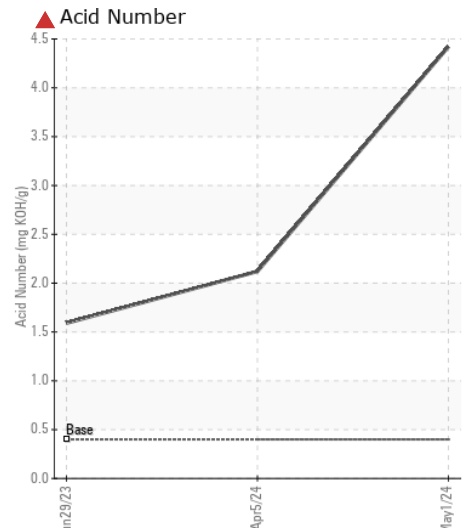
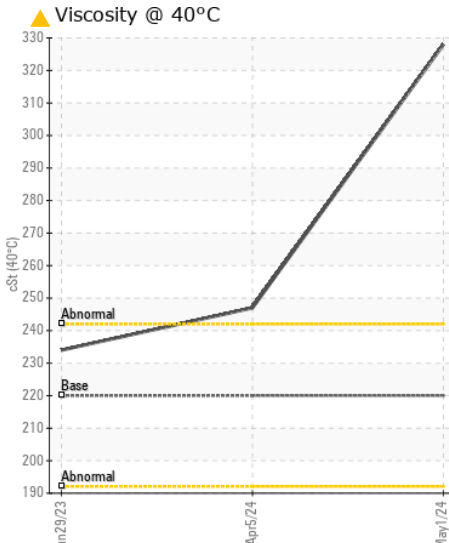
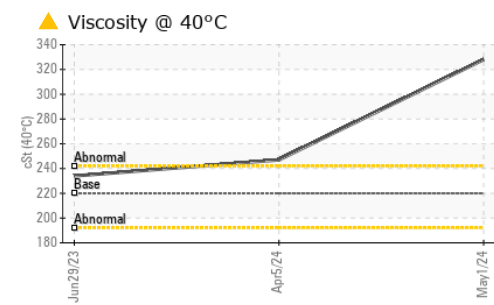
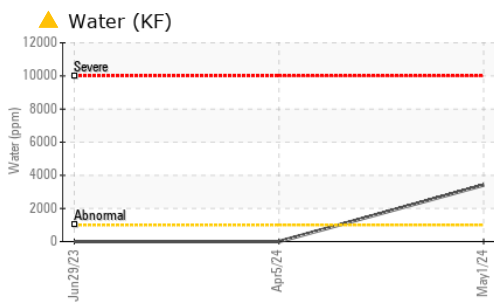
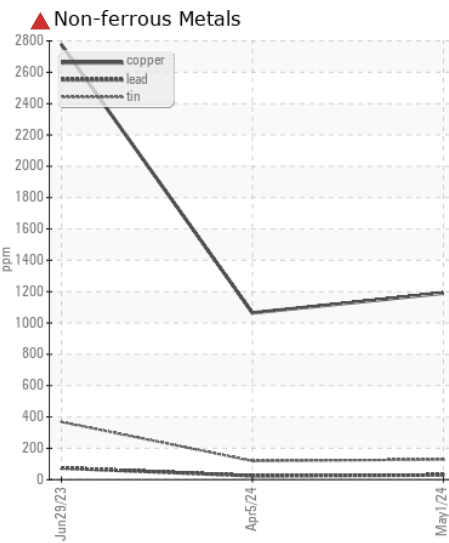
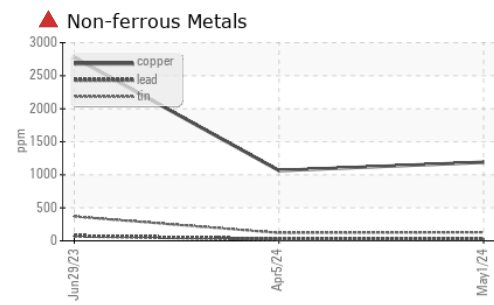
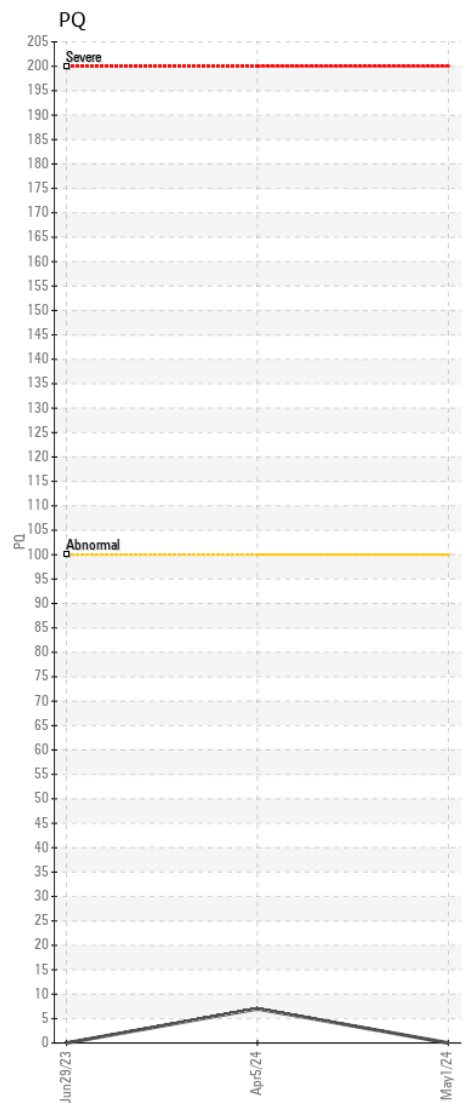
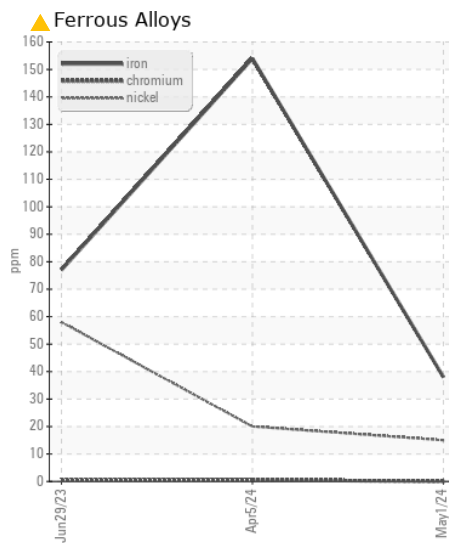
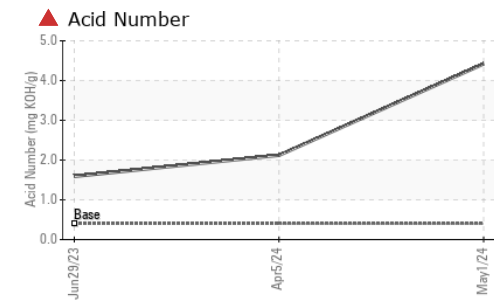
CONTAMINATION

There is a moderate concentration of water present in the oil.

FLUID CONDITION

The oil viscosity is higher than normal. The high AN level of the oil indicates the presence of oxi-polymerized products. The AN level is much higher than the recommended limit. Viscosity of sample indicates oil is within ISO 320 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		CB0031127	CB0030285	CB0030281
Sample Date		Client Info		01 May 2024	05 Apr 2024	29 Jun 2023
Machine Age	mths	Client Info		0	0	0
Oil Age	mths	Client Info		1	10	48
Filter Age	mths	Client Info		0	0	0
Oil Changed		Client Info		Changed	Not Changd	N/A
Filter Changed		Client Info		Not Changd	N/A	N/A
Sample Status				SEVERE	SEVERE	SEVERE
PQ		ASTM D8184*		0	7	0
Iron	ppm	ASTM D5185(m)	>150	38	154	77
Chromium	ppm	ASTM D5185(m)	>10	0	<1	<1
Nickel	ppm	ASTM D5185(m)	>10	▲ 15	▲ 20	▲ 58
Titanium	ppm	ASTM D5185(m)		<1	0	<1
Silver	ppm	ASTM D5185(m)		0	0	<1
Aluminum	ppm	ASTM D5185(m)	>25	2	0	<1
Lead	ppm	ASTM D5185(m)	>100	29	24	74
Copper	ppm	ASTM D5185(m)	>50	▲ 1190	▲ 1064	▲ 2776
Tin	ppm	ASTM D5185(m)	>10	▲ 128	▲ 119	▲ 368
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>50	4	13	3
Potassium	ppm	ASTM D5185(m)	>20	4	1	0
Water	%	ASTM D6304*	>0.1	▲ 0.341	---	---
ppm Water	ppm	ASTM D6304*	>1000	▲ 3411	---	---
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	VLITE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	VLITE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	▲ .2%	NEG	NEG
Sodium	ppm	ASTM D5185(m)		127	2	5
Boron	ppm	ASTM D5185(m)	60	31	48	45
Barium	ppm	ASTM D5185(m)	0	10	<1	3
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)	0	<1	2	1
Magnesium	ppm	ASTM D5185(m)	0	2	2	2
Calcium	ppm	ASTM D5185(m)	0	11	1	3
Phosphorus	ppm	ASTM D5185(m)	270	219	258	265
Zinc	ppm	ASTM D5185(m)	0	10	9	5
Sulfur	ppm	ASTM D5185(m)	11200	● 2657	5444	5412
Acid Number (AN)	mg KOH/g	ASTM D974*	0.40	▲ 4.42	▲ 2.12	▲ 1.59
Visc @ 40°C	cSt	ASTM D7279(m)	220	▲ 328	247	234



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : CB0031127
Lab Number : 02634754
Unique Number : 5775907
Test Package : IND 2 (Additional Tests: KF, TAN Man)

Received : 10 May 2024
Tested : 14 May 2024
Diagnosed : 14 May 2024 - Kevin Marson

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.

APOTEX INC.
 150 SIGNET DRIVE
 TORONTO, ON
 CA M9L 1T9
 Contact: Nabeel Syed, P. Eng
 nsyed@apotex.com
 T: (416)749-9300
 F: