

Machine Id  
**ENGEL #4**  
Component  
**Hydraulic System**  
Fluid  
**PETRO CANADA HYDREX AW 46 (250 GAL)**

**DIAGNOSIS**

**Recommendation**

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

**Wear**

All component wear rates are normal.

**Contamination**

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

**Fluid Condition**

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

**SAMPLE INFORMATION**

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>PC0069621</b>	PC0058283	PC408421
Sample Date	Client Info		<b>02 Nov 2023</b>	30 May 2022	17 Feb 2022
Machine Age	days	Client Info	<b>0</b>	0	0
Oil Age	days	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>NORMAL</b>	ATTENTION	ABNORMAL

**WEAR METALS**

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	<1	<1
Chromium	ppm	ASTM D5185(m) >10	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185(m) >10	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	<b>&lt;1</b>	0	<1
Aluminum	ppm	ASTM D5185(m) >10	<b>&lt;1</b>	0	0
Lead	ppm	ASTM D5185(m) >10	<b>0</b>	0	0
Copper	ppm	ASTM D5185(m) >75	<b>1</b>	1	1
Tin	ppm	ASTM D5185(m) >10	<b>0</b>	0	<1
Antimony	ppm	ASTM D5185(m)	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	0	0

**ADDITIVES**

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	1	1
Barium	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185(m) 0	<b>0</b>	<1	<1
Manganese	ppm	ASTM D5185(m) 0	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	1	1
Calcium	ppm	ASTM D5185(m) 50	<b>72</b>	74	73
Phosphorus	ppm	ASTM D5185(m) 330	<b>316</b>	335	323
Zinc	ppm	ASTM D5185(m) 430	<b>394</b>	396	381
Sulfur	ppm	ASTM D5185(m) 760	<b>908</b>	913	888
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	<1

**CONTAMINANTS**

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	1	1
Sodium	ppm	ASTM D5185(m)	<b>&lt;1</b>	0	0
Potassium	ppm	ASTM D5185(m) >20	<b>0</b>	<1	<1

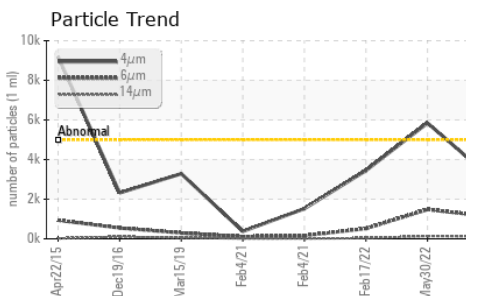
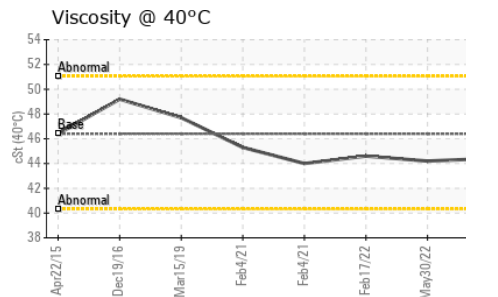
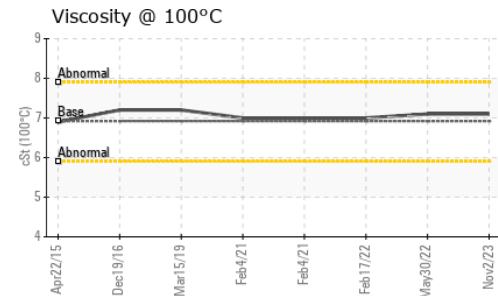
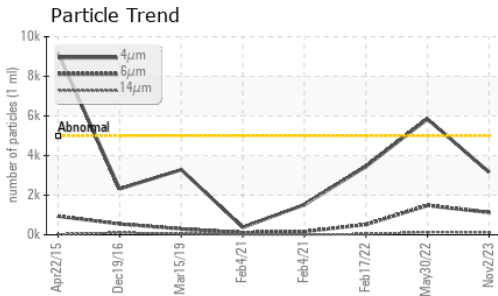
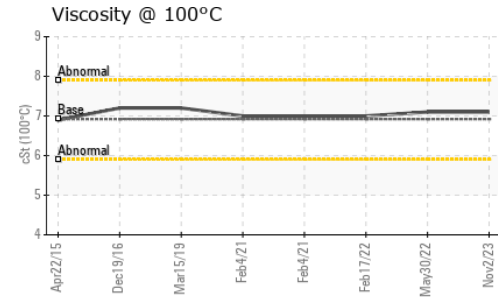
**FLUID CLEANLINESS**

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	<b>3159</b>	▲ 5845	3448
Particles >6µm	ASTM D7647	>1300	<b>1128</b>	▲ 1485	519
Particles >14µm	ASTM D7647	>160	<b>113</b>	136	34
Particles >21µm	ASTM D7647	>40	<b>28</b>	14	10
Particles >38µm	ASTM D7647	>10	<b>3</b>	0	0
Particles >71µm	ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	<b>19/17/14</b>	▲ 20/18/14	19/16/12

**FLUID DEGRADATION**

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974* 0.70	<b>0.30</b>	0.33	0.25

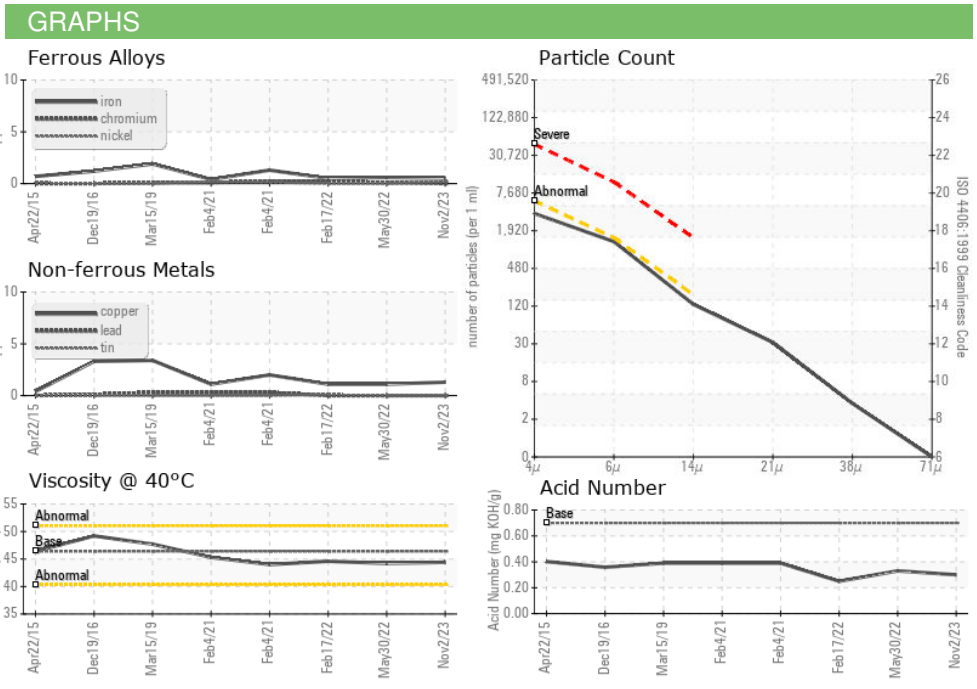
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	▲ LIGHT
Silt	scalar	Visual*	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	NEG	.5%
Free Water	scalar	Visual*		NEG	▲ 1%

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46.4	44.2	44.6
Visc @ 100°C	cSt	ASTM D7279(m)	6.92	7.1	7
Viscosity Index (VI)	Scale	ASTM D2270*	104	120	114

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0069621 **Received** : 07 Nov 2023  
**Lab Number** : 02594620 **Diagnosed** : 08 Nov 2023  
**Unique Number** : 5671699 **Diagnostician** : Kevin Marson  
**Test Package** : IND 2 ( Additional Tests: KV100, 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.  
 Validity of results and interpretation are based on the sample and information as supplied.

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