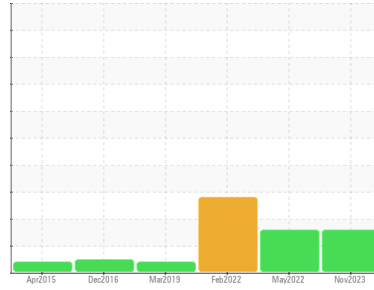


PROBLEM SUMMARY

Sample Rating Trend



ISO



Machine Id

ENGEL-3

Component

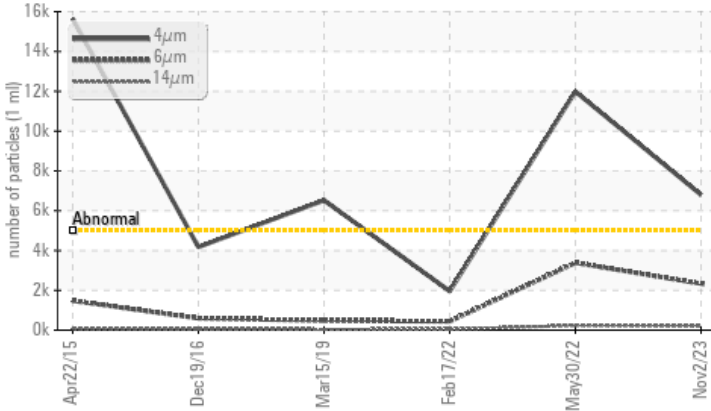
Hydraulic System

Fluid

PETRO CANADA HYDREX AW 46 (250 GAL)

COMPONENT CONDITION SUMMARY

▲ Particle Trend



RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

PROBLEMATIC TEST RESULTS

Sample Status			ATTENTION	ABNORMAL	ABNORMAL
Particles >4µm	ASTM D7647	>5000	▲ 6799	▲ 11987	1959
Particles >6µm	ASTM D7647	>1300	▲ 2336	▲ 3380	440
Particles >14µm	ASTM D7647	>160	▲ 200	▲ 230	40
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 20/18/15	▲ 21/19/15	18/16/12

Customer Id: VERLEA
Sample No.: PC0069630
Lab Number: 02594621
Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Information Required	---	---	?	Please specify the component make and model with your next sample.

HISTORICAL DIAGNOSIS

30 May 2022 Diag: Wes Davis

ISO



We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample. All component wear rates are normal. Oil Cleanliness are abnormally high. Particles >4µm are abnormally high. Particles >6µm are abnormally high. Particles >14µm are notably high. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

[view report](#)



17 Feb 2022 Diag: Kevin Marson

WATER



We advise that you check for the source of water entry. We advise that you follow the water drain-off procedure for this component. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample. All component wear rates are normal. Free water present. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The white residue present in the sample is oil additive precipitate. The AN level is acceptable for this fluid. The oil is no longer serviceable due to the presence of contaminants.

[view report](#)



15 Mar 2019 Diag: Wes Davis

ISO



We recommend you service the filters on this component. Resample at the next service interval to monitor. Please specify the component make and model with your next sample. All component wear rates are normal. There is a light amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

[view report](#)

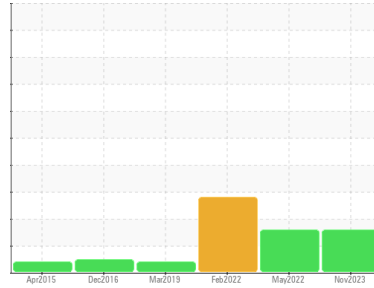




Machine Id
ENGEL-3

Component
Hydraulic System

Fluid
PETRO CANADA HYDREX AW 46 (250 GAL)



DIAGNOSIS

Recommendation

We recommend you service the filters on this component. 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

There is a light amount of silt (particulates < 14 microns in size) present 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	limit/base	current	history1	history2
Sample Number	Client Info			PC0069630	PC0058280	PC408420
Sample Date	Client Info			02 Nov 2023	30 May 2022	17 Feb 2022
Machine Age	days	Client Info		0	0	0
Oil Age	days	Client Info		0	0	0
Oil Changed	Client Info			N/A	N/A	N/A
Sample Status				ATTENTION	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	<1	<1	<1
Chromium	ppm	ASTM D5185(m)	>10	0	0	<1
Nickel	ppm	ASTM D5185(m)	>10	<1	0	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		<1	<1	0
Aluminum	ppm	ASTM D5185(m)	>10	0	<1	0
Lead	ppm	ASTM D5185(m)	>10	<1	0	0
Copper	ppm	ASTM D5185(m)	>75	1	1	1
Tin	ppm	ASTM D5185(m)	>10	0	0	0
Antimony	ppm	ASTM D5185(m)		0	0	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

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	3	3	3
Barium	ppm	ASTM D5185(m)	0	<1	0	0
Molybdenum	ppm	ASTM D5185(m)	0	<1	2	2
Manganese	ppm	ASTM D5185(m)	0	0	0	0
Magnesium	ppm	ASTM D5185(m)	0	6	6	6
Calcium	ppm	ASTM D5185(m)	50	86	92	92
Phosphorus	ppm	ASTM D5185(m)	330	327	346	337
Zinc	ppm	ASTM D5185(m)	430	417	416	405
Sulfur	ppm	ASTM D5185(m)	760	932	983	969
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

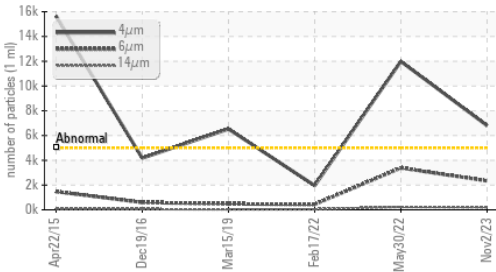
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	1	1	1
Sodium	ppm	ASTM D5185(m)		<1	0	0
Potassium	ppm	ASTM D5185(m)	>20	0	<1	<1

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ 6799	▲ 11987	1959
Particles >6µm		ASTM D7647	>1300	▲ 2336	▲ 3380	440
Particles >14µm		ASTM D7647	>160	▲ 200	▲ 230	40
Particles >21µm		ASTM D7647	>40	41	38	15
Particles >38µm		ASTM D7647	>10	4	0	2
Particles >71µm		ASTM D7647	>3	1	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ 20/18/15	▲ 21/19/15	18/16/12

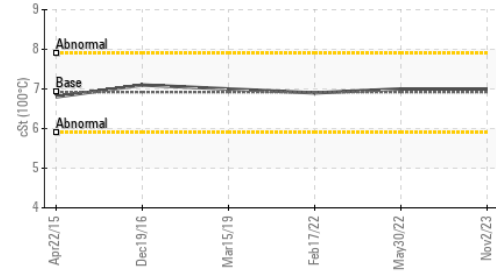
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.70	0.32	0.30	0.23

OIL ANALYSIS REPORT

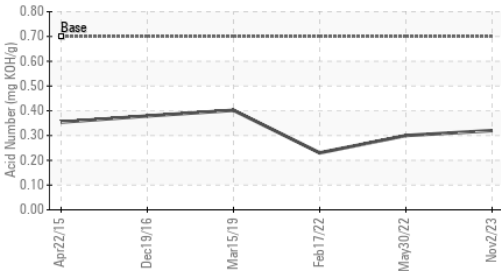
▲ Particle Trend



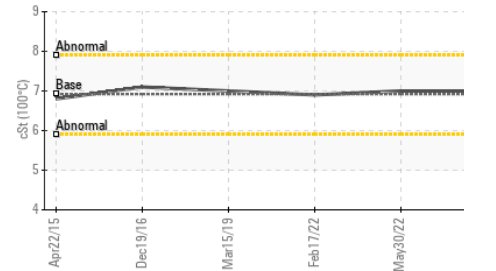
Viscosity @ 100°C



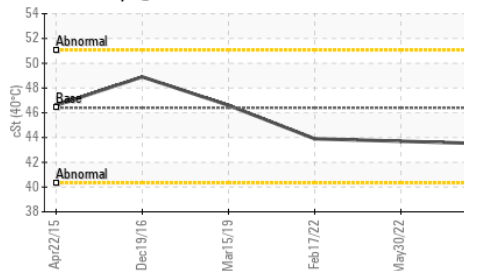
Acid Number



Viscosity @ 100°C



Viscosity @ 40°C



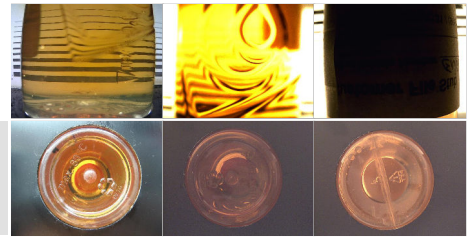
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	▲ LIGHT
Silt	scalar	Visual*	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance	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	43.5	43.7
Visc @ 100°C	cSt	ASTM D7279(m)	6.92	7	7
Viscosity Index (VI)	Scale	ASTM D2270*	104	119	118

SAMPLE IMAGES

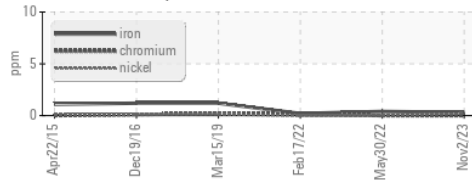
Color

Bottom

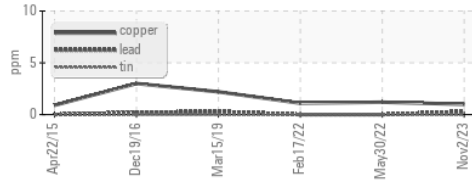


GRAPHS

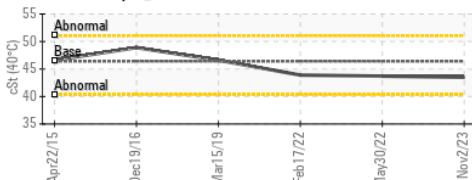
Ferrous Alloys



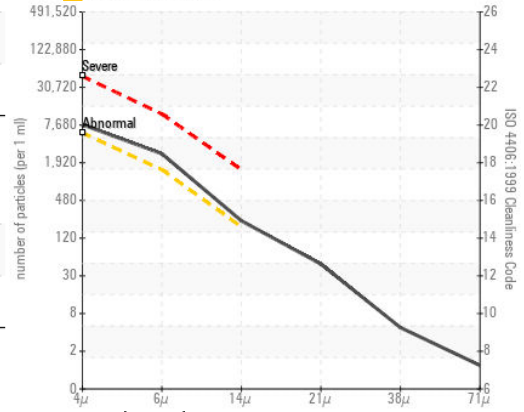
Non-ferrous Metals



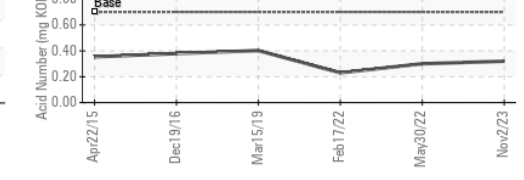
Viscosity @ 40°C



▲ Particle Count



Acid Number



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0069630 **Received** : 07 Nov 2023
Lab Number : 02594621 **Diagnosed** : 08 Nov 2023
Unique Number : 5671700 **Diagnostician** : Kevin Marson
Test Package : IND 2 (Additional Tests: KV100, VI)

ELRINGKLINGER CANADA INC
 1 SENECA ROAD, R.R. #4
 LEAMINGTON, ON
 CA N8H 5P2
 Contact: Dave Fawdry
 david.fawdry@elringklinger.ca
 T: (519)326-6113
 F: (519)326-6327

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.