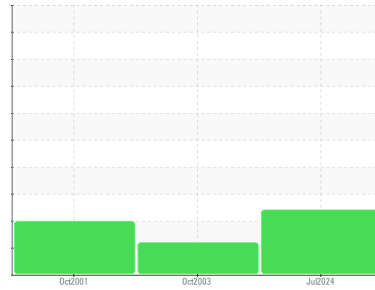




OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Area

P4 Line

Machine Id

P4 Scrap Shear

Component

Hydraulic System

Fluid

PETRO CANADA HARMONY AW 32 (104 GAL)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code.

Fluid Condition

Viscosity of sample indicates oil is within ISO 46 range, advise investigate. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	WC0943178	WC22028213	WC550850
Sample Date	Client Info	05 Jul 2024	14 Oct 2003	15 Oct 2001
Machine Age	hrs	Client Info	0	0
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		ABNORMAL	ABNORMAL	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2	
Water	WC Method	>0.05	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185(m)	>40	<1	2	2
Chromium	ppm	ASTM D5185(m)	>4	0	<1	<1
Nickel	ppm	ASTM D5185(m)	>20	<1	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	<1
Silver	ppm	ASTM D5185(m)		0	0	<1
Aluminum	ppm	ASTM D5185(m)	>4	<1	0	<1
Lead	ppm	ASTM D5185(m)	>10	0	0	4
Copper	ppm	ASTM D5185(m)	>60	<1	▲ 14	<1
Tin	ppm	ASTM D5185(m)	>4	0	0	3
Antimony	ppm	ASTM D5185(m)		0	---	---
Vanadium	ppm	ASTM D5185(m)		0	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)		<1	2	1
Barium	ppm	ASTM D5185(m)		0	<1	<1
Molybdenum	ppm	ASTM D5185(m)		0	0	<1
Manganese	ppm	ASTM D5185(m)		0	0	---
Magnesium	ppm	ASTM D5185(m)	110	<1	23	48
Calcium	ppm	ASTM D5185(m)	60	44	118	34
Phosphorus	ppm	ASTM D5185(m)	330	322	229	175
Zinc	ppm	ASTM D5185(m)	390	403	334	196
Sulfur	ppm	ASTM D5185(m)	660	726	472	357
Lithium	ppm	ASTM D5185(m)		<1	---	---

CONTAMINANTS

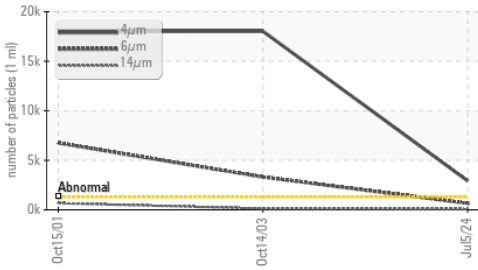
method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185(m)	>20	0	0	<1
Sodium	ppm	ASTM D5185(m)		0	<1	3
Potassium	ppm	ASTM D5185(m)	>20	0	0	3

FLUID CLEANLINESS

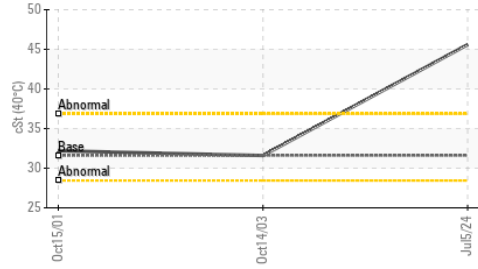
method	limit/base	current	history1	history2	
Particles >4µm	ASTM D7647	>1300	▲ 2925	18022	18015
Particles >6µm	ASTM D7647	>320	▲ 651	▲ 3306	▲ 6749
Particles >14µm	ASTM D7647	>40	● 58	117	▲ 667
Particles >21µm	ASTM D7647	>10	● 16	19	▲ 128
Particles >38µm	ASTM D7647	>3	2	2	▲ 12
Particles >71µm	ASTM D7647	>3	0	0	▲ 2
Oil Cleanliness	ISO 4406 (c)	>17/15/12	▲ 19/17/13	▲ 21/19/14	▲ 21/20/17

OIL ANALYSIS REPORT

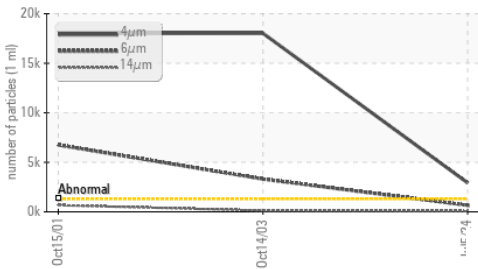
▲ Particle Trend



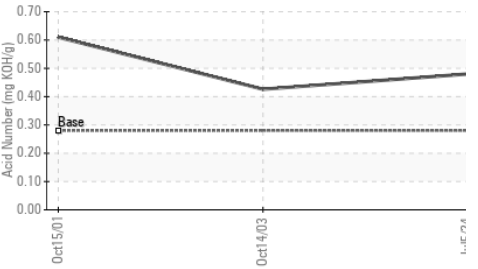
▲ Viscosity @ 40°C



▲ Particle Trend



Acid Number



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.28	0.48	0.426	0.610

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	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	VLITE
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*	>0.05	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

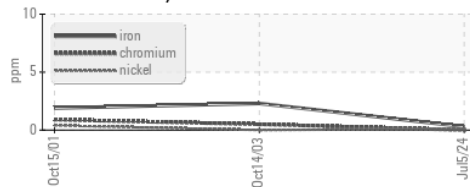
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	31.61	▲ 45.6	31.6	32.2

SAMPLE IMAGES		method	limit/base	current	history1	history2
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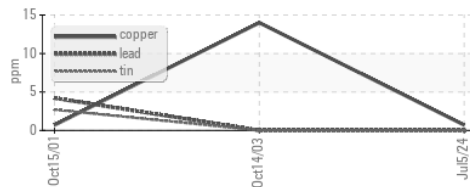
Color		no image	no image
Bottom		no image	no image

GRAPHS

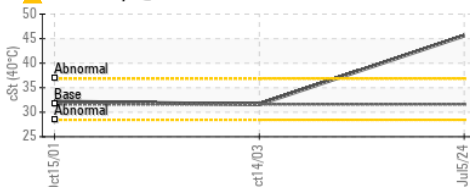
Ferrous Alloys



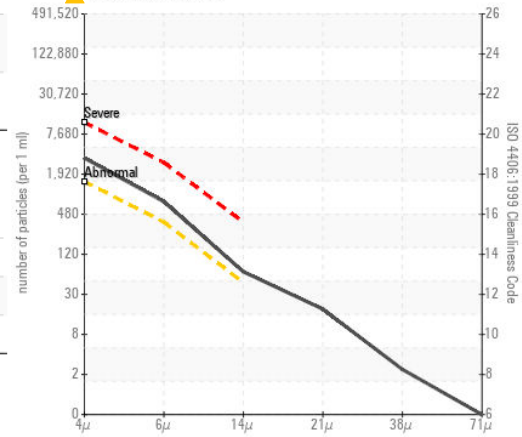
Non-ferrous Metals



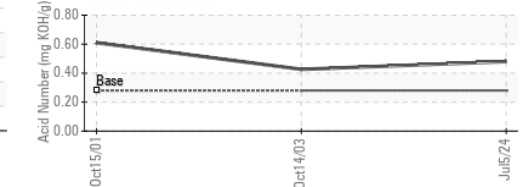
▲ Viscosity @ 40°C



▲ Particle Count



Acid Number



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0943178 **Received** : 08 Jul 2024
Lab Number : **02646247** **Tested** : 09 Jul 2024
Unique Number : 5811799 **Diagnosed** : 09 Jul 2024 - Kevin Marson
Test Package : IND 2

Hydro Extrusion North
 5675 Kennedy Road
 Mississauga, ON
 CA L4Z 2H9
 Contact: Harsh Murria
 Harsh.murria@hydro.com
 T: (819)462-0479
 F: (866)462-6478

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.