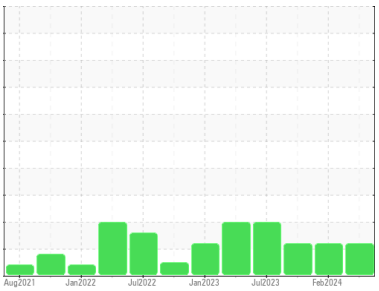
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
Batch Anneal
Machine Id
[Batch Anneal] 335015-UPENDER COIL CAR
Component
Hydraulic System
Fluid
PETRO CANADA HYDREX AW 46 (--- GAL)

DIAGNOSIS

Recommendation
We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Wear
The lead level is abnormal. All other component wear rates are normal.

Contamination
Moderate concentration of visible dirt/debris 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		**PCA0117665**	PCA0112937	PCA0107726
Sample Date		Client Info		**07 Apr 2024**	14 Feb 2024	25 Oct 2023
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	ATTENTION

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	**2**	0	0
Chromium	ppm	ASTM D5185m	>20	**<1**	0	0
Nickel	ppm	ASTM D5185m	>20	**0**	0	<1
Titanium	ppm	ASTM D5185m		**<1**	<1	0
Silver	ppm	ASTM D5185m		**<1**	0	0
Aluminum	ppm	ASTM D5185m	>20	**2**	0	0
Lead	ppm	ASTM D5185m	>20	▲ **59**	0	0
Copper	ppm	ASTM D5185m	>20	**5**	1	<1
Tin	ppm	ASTM D5185m	>20	**<1**	0	0
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**0**	0	0
Barium	ppm	ASTM D5185m	0	**<1**	0	0
Molybdenum	ppm	ASTM D5185m	0	**<1**	0	0
Manganese	ppm	ASTM D5185m	0	**0**	0	<1
Magnesium	ppm	ASTM D5185m	0	**4**	0	8
Calcium	ppm	ASTM D5185m	50	**65**	48	60
Phosphorus	ppm	ASTM D5185m	330	**338**	313	364
Zinc	ppm	ASTM D5185m	430	**421**	381	476
Sulfur	ppm	ASTM D5185m	760	**1393**	792	939

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**0**	<1	<1
Sodium	ppm	ASTM D5185m		**0**	1	0
Potassium	ppm	ASTM D5185m	>20	**1**	0	0
Water	%	ASTM D6304	>0.05	**NEG**	NEG	NEG

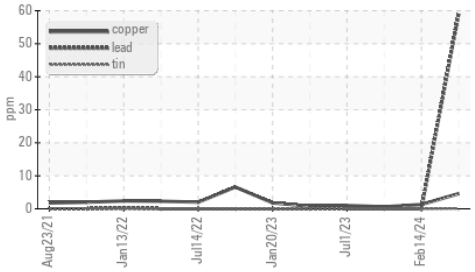
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	---	▲ 14063	● 5948
Particles >6µm		ASTM D7647	>1300	---	▲ 2835	● 1444
Particles >14µm		ASTM D7647	>160	---	145	46
Particles >21µm		ASTM D7647	>40	---	29	7
Particles >38µm		ASTM D7647	>10	---	0	1
Particles >71µm		ASTM D7647	>3	---	0	1
Oil Cleanliness		ISO 4406 (c)	>19/17/14	---	▲ 21/19/14	● 20/18/13

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.70	**0.23**	0.19	0.19

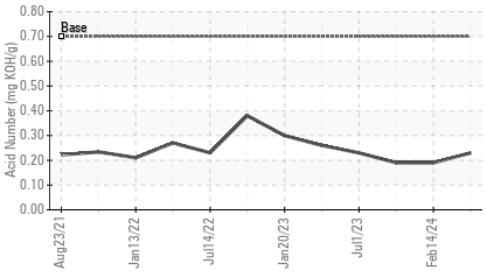
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

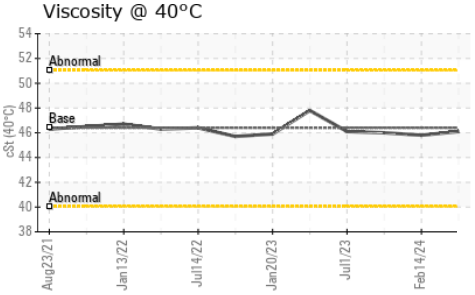
Non-ferrous Metals



Acid Number



Viscosity @ 40°C



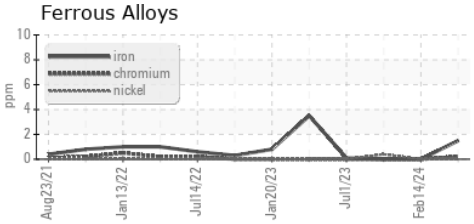
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	▲ **MODER**	LIGHT	LIGHT
Sand/Dirt	scalar	*Visual	NONE	**NONE**	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 D445	46.4	**46.1**	45.8	46.0

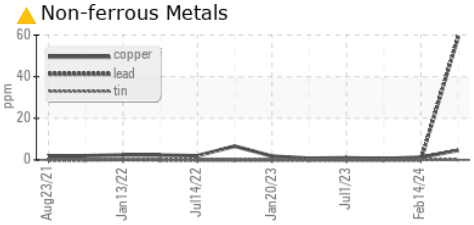
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

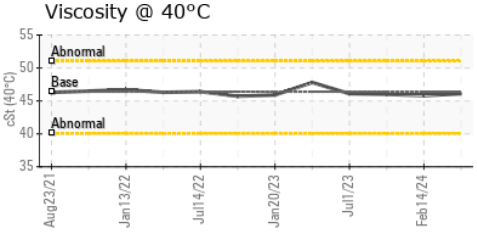
Ferrous Alloys



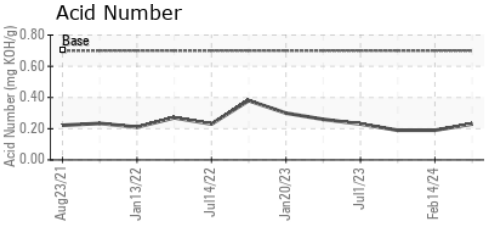
Non-ferrous Metals



Viscosity @ 40°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0117665
Lab Number : 06142203
Unique Number : 10967011
Test Package : PLANT

Received : 08 Apr 2024
Tested : 11 Apr 2024
Diagnosed : 11 Apr 2024 - Don Baldridge

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

SDI - Steel DynamicsInc. - Heartland
455 West Industrial Drive
Terre Haute, IN
US 47802
Contact: BRAD ELLIS
brad.ellis@steeldynamics.com
T:
F: