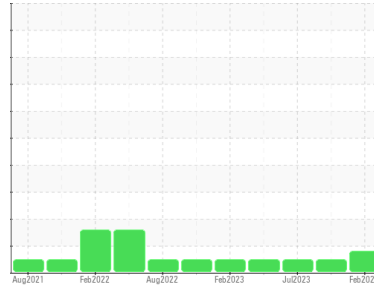


OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area
Galv Line
Machine Id
[Galv Line] 695250-DELIVERY COIL CAR
Component
Hydraulic System
Fluid
PETRO CANADA HYDREX AW 46 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a moderate 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	PCA0117547	PCA0107682	PCA0101541
Sample Date	Client Info	12 Feb 2024	20 Nov 2023	01 Jul 2023
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		ATTENTION	NORMAL	NORMAL

WEAR METALS

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

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m 0	0	0	0
Barium	ppm	ASTM D5185m 0	0	4	0
Molybdenum	ppm	ASTM D5185m 0	0	<1	<1
Manganese	ppm	ASTM D5185m 0	<1	<1	0
Magnesium	ppm	ASTM D5185m 0	1	1	3
Calcium	ppm	ASTM D5185m 50	48	51	56
Phosphorus	ppm	ASTM D5185m 330	282	369	329
Zinc	ppm	ASTM D5185m 430	417	448	451
Sulfur	ppm	ASTM D5185m 760	941	866	972

CONTAMINANTS

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

FLUID CLEANLINESS

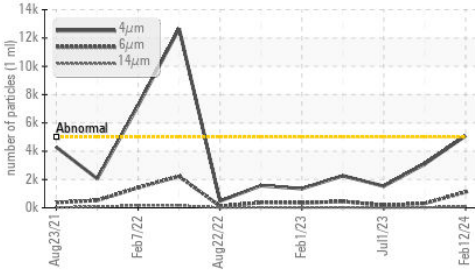
method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >5000	▲ 5090	3091	1529
Particles >6µm	ASTM D7647 >1300	1113	302	178
Particles >14µm	ASTM D7647 >160	71	30	11
Particles >21µm	ASTM D7647 >40	20	10	2
Particles >38µm	ASTM D7647 >10	1	1	0
Particles >71µm	ASTM D7647 >3	0	0	0
Oil Cleanliness	ISO 4406 (c) >19/17/14	▲ 20/17/13	19/15/12	18/15/11

FLUID DEGRADATION

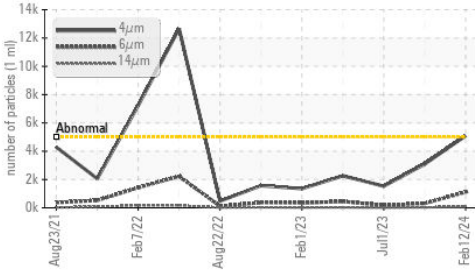
method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045 0.70	0.37	0.38	0.41

OIL ANALYSIS REPORT

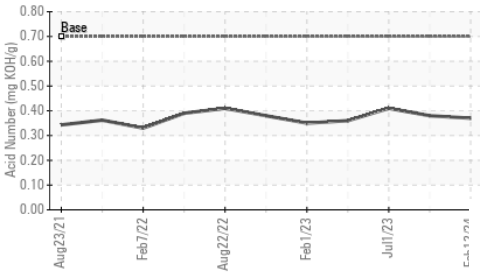
▲ Particle Trend



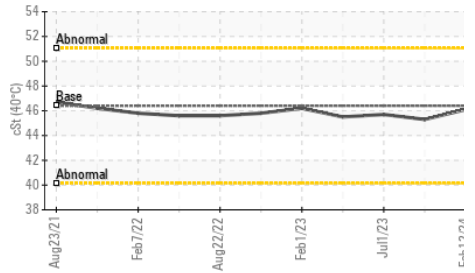
▲ Particle Trend



Acid Number



Viscosity @ 40°C

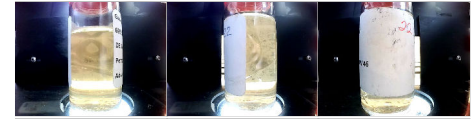


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

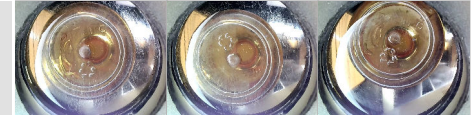
FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D445	46.4	46.1	45.3	45.7

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color

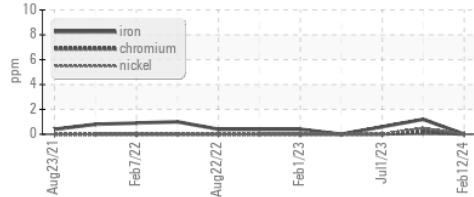


Bottom

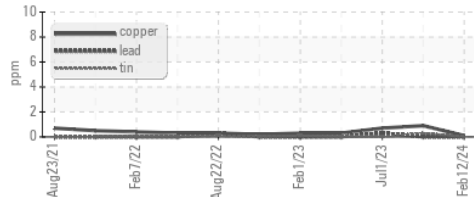


GRAPHS

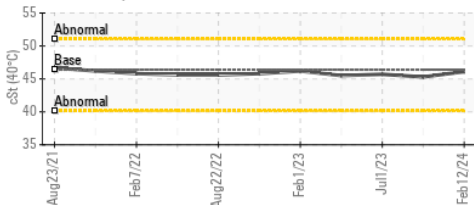
Ferrous Alloys



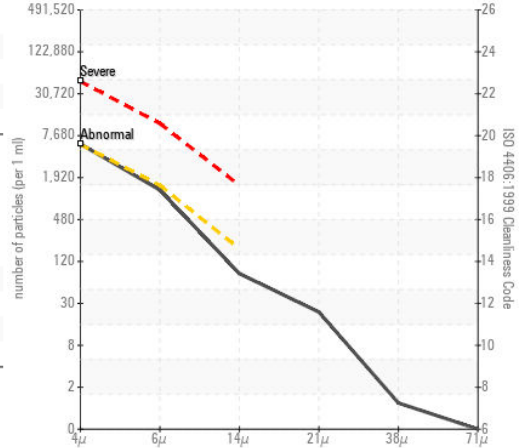
Non-ferrous Metals



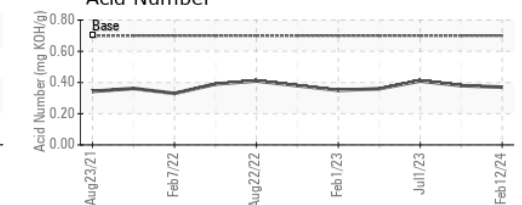
Viscosity @ 40°C



▲ Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : PCA0117547

Lab Number : 06088142

Unique Number : 10875587

Test Package : PLANT

Received : 13 Feb 2024

Tested : 15 Feb 2024

Diagnosed : 15 Feb 2024 - Don Baldrige

SDI - Steel Dynamics Inc. - Heartland

455 West Industrial Drive

Terre Haute, IN

US 47802

Contact: BRAD ELLIS

brad.ellis@steeldynamics.com

T:

F:

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)