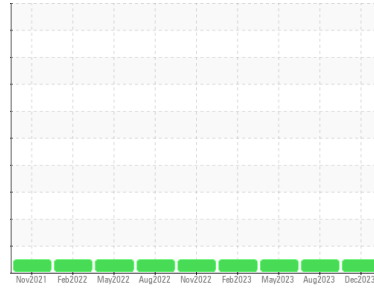


OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
Temper Mill
 Machine Id
[Temper Mill] 235020-HIGH PRESSURE HPU
 Component
Hydraulic System
 Fluid
PETRO CANADA HYDREX AW 46 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the fluid. The amount and size of particulates present in the system are acceptable.

Fluid Condition

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

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PCA0107685	PCA0101467	PCA0095448
Sample Date	Client Info	26 Dec 2023	14 Aug 2023	01 May 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	Not Changd
Sample Status		NORMAL	NORMAL	NORMAL

WEAR METALS

method	limit/base	current	history1	history2
Iron ppm ASTM D5185m	>20	0	<1	0
Chromium ppm ASTM D5185m	>20	0	0	0
Nickel ppm ASTM D5185m	>20	0	0	0
Titanium ppm ASTM D5185m		0	0	<1
Silver ppm ASTM D5185m		0	0	0
Aluminum ppm ASTM D5185m	>20	0	0	<1
Lead ppm ASTM D5185m	>20	0	0	0
Copper ppm ASTM D5185m	>20	2	2	2
Tin ppm ASTM D5185m	>20	0	0	0
Vanadium ppm ASTM D5185m		0	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	0	0	0
Molybdenum ppm ASTM D5185m	0	0	0	0
Manganese ppm ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m	0	2	4	7
Calcium ppm ASTM D5185m	50	61	62	57
Phosphorus ppm ASTM D5185m	330	321	336	321
Zinc ppm ASTM D5185m	430	404	407	393
Sulfur ppm ASTM D5185m	760	1154	1456	1411

CONTAMINANTS

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

FLUID CLEANLINESS

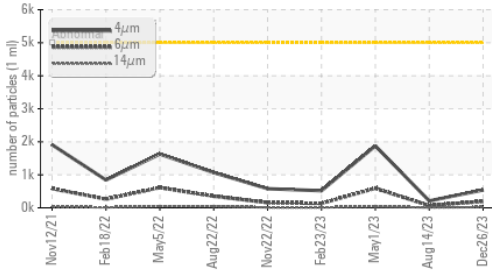
method	limit/base	current	history1	history2
Particles >4µm ASTM D7647	>5000	540	210	1876
Particles >6µm ASTM D7647	>1300	196	69	591
Particles >14µm ASTM D7647	>160	20	9	37
Particles >21µm ASTM D7647	>40	6	2	10
Particles >38µm ASTM D7647	>10	0	0	1
Particles >71µm ASTM D7647	>3	0	0	0
Oil Cleanliness ISO 4406 (c)	>19/17/14	16/15/11	15/13/10	18/16/12

FLUID DEGRADATION

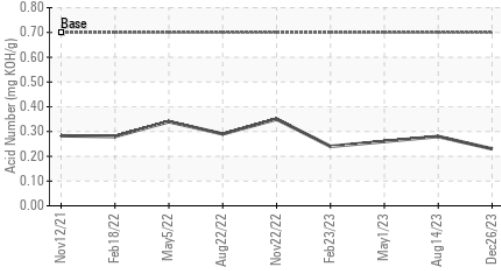
method	limit/base	current	history1	history2
Acid Number (AN) mg KOH/g ASTM D8045	0.70	0.23	0.28	0.26

OIL ANALYSIS REPORT

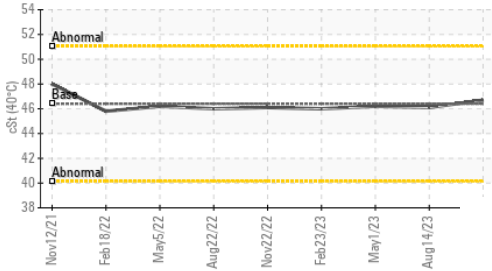
Particle Trend



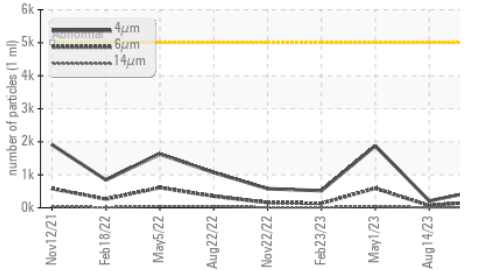
Acid Number



Viscosity @ 40°C



Particle Trend

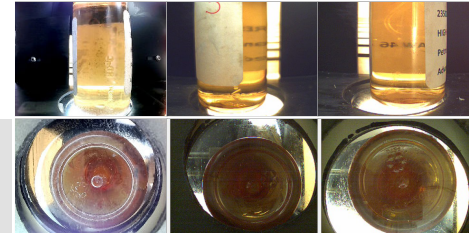


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	46.7	46.1	46.2

SAMPLE IMAGES	method	limit/base	current	history1	history2
---------------	--------	------------	---------	----------	----------

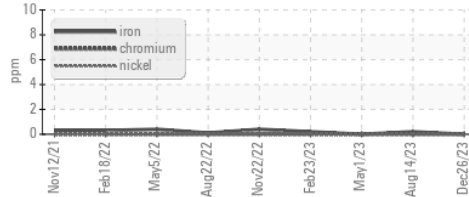
Color



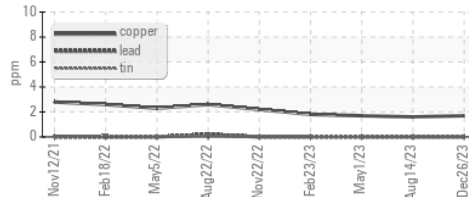
Bottom

GRAPHS

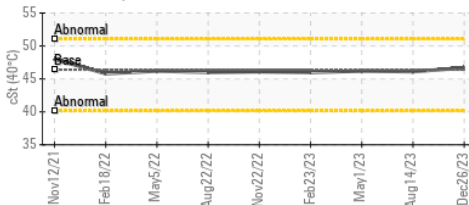
Ferrous Alloys



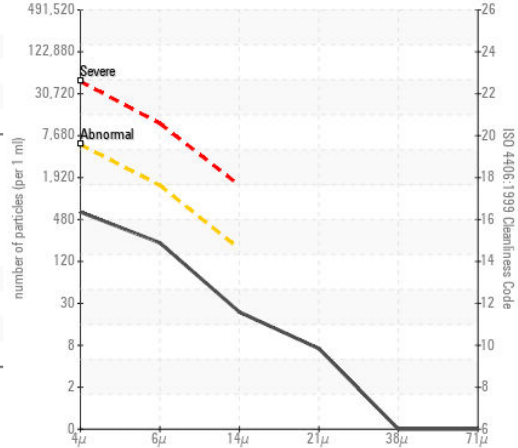
Non-ferrous Metals



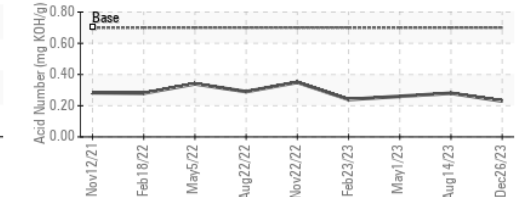
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0107685 **Received** : 27 Dec 2023
Lab Number : 06046122 **Diagnosed** : 29 Dec 2023
Unique Number : 10806730 **Diagnostician** : Jonathan Hester
Test Package : PLANT

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

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)

T:
F: