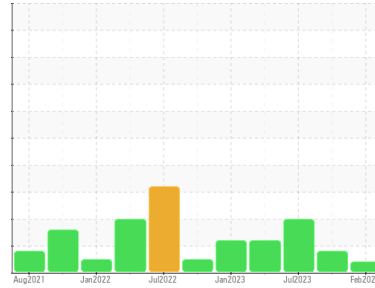


Area  
**Pickle Line**  
Machine Id  
**[Pickle Line] 535155-STEERING UNITS 1- 1A- 2- 3**  
Component  
**Hydraulic System**  
Fluid  
**PETRO CANADA HYDREX AW 46 (--- GAL)**



## 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

All 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	<b>PCA0101542</b>	PCA0107689	PCA0101508
Sample Date	Client Info	<b>14 Feb 2024</b>	25 Oct 2023	01 Jul 2023
Machine Age	hrs	<b>0</b>	0	0
Oil Age	hrs	<b>0</b>	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>ABNORMAL</b>	ATTENTION	ABNORMAL

## WEAR METALS

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

## ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m 0	<b>0</b>	0	0
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m 0	<b>0</b>	0	2
Manganese	ppm	ASTM D5185m 0	<b>0</b>	<1	0
Magnesium	ppm	ASTM D5185m 0	<b>0</b>	9	<1
Calcium	ppm	ASTM D5185m 50	<b>52</b>	64	68
Phosphorus	ppm	ASTM D5185m 330	<b>310</b>	351	359
Zinc	ppm	ASTM D5185m 430	<b>380</b>	454	436
Sulfur	ppm	ASTM D5185m 760	<b>804</b>	942	1056

## CONTAMINANTS

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

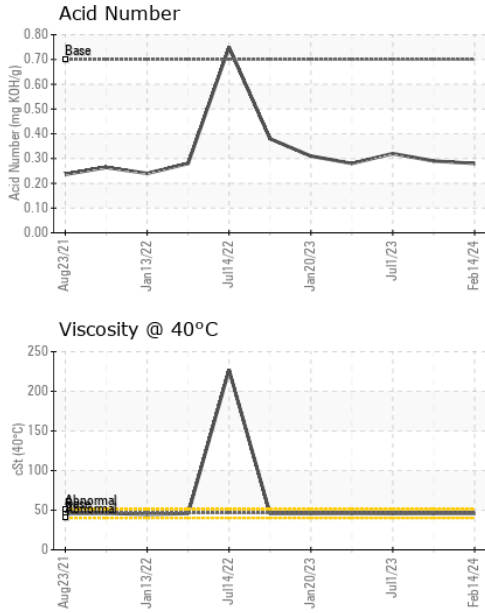
## FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >5000	---	▲ 9233	▲ 10135
Particles >6µm	ASTM D7647 >1300	---	1001	▲ 2165
Particles >14µm	ASTM D7647 >160	---	17	▲ 205
Particles >21µm	ASTM D7647 >40	---	4	▲ 49
Particles >38µm	ASTM D7647 >10	---	0	1
Particles >71µm	ASTM D7647 >3	---	0	0
Oil Cleanliness	ISO 4406 (c) >19/17/14	---	▲ 20/17/11	▲ 21/18/15

## FLUID DEGRADATION

method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045 0.70	<b>0.28</b>	0.29	0.32

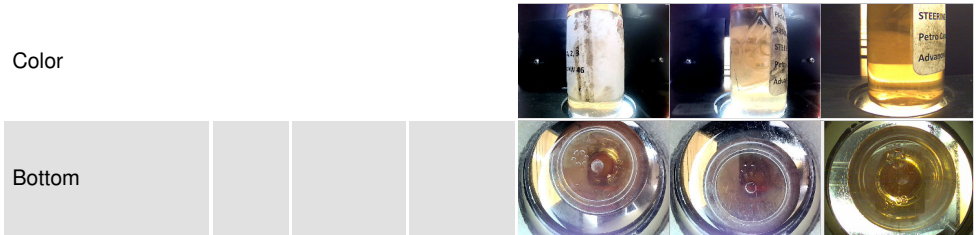
# OIL ANALYSIS REPORT



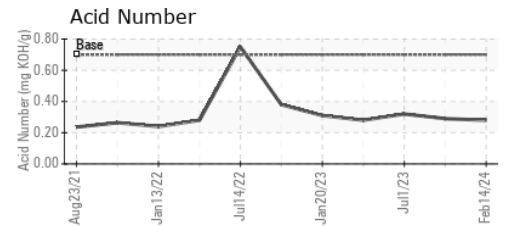
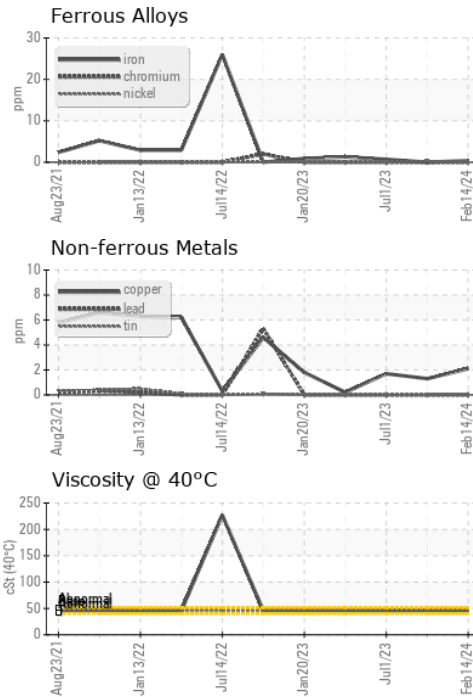
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	▲ MODER	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	<b>45.8</b>	45.8	45.6

SAMPLE IMAGES	method	limit/base	current	history1	history2
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## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0101542  
**Lab Number** : 06090985  
**Unique Number** : 10883838  
**Test Package** : PLANT

**Received** : 15 Feb 2024  
**Tested** : 18 Feb 2024  
**Diagnosed** : 18 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

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: