

# [1460] N/A 1460-5673-4004 - COPPER LAROX #4 HYDRAULIC POWER PACK - Hydraulic System

**Sample No:** PC0010190

**Oil Type:** PETRO CANADA HYDREX AW 46

## SAMPLE INFORMATION

Sample Number	<b>PC0010190</b>	PC366815	PC410772	PC410390
Sample Date	<b>29 Jan 2020</b>	04 Apr 2019	12 Nov 2018	10 Apr 2018
Machine Hours	<b>0</b>	0	0	0
Oil Hours	<b>0</b>	0	0	0
Oil Changed	<b>N/A</b>	N/A	N/A	N/A
Sample Status	<b>SEVERE</b>	SEVERE	ABNORMAL	NORMAL

### Vale

Voisey's Bay Mine Site, P.O. Box 7001, Stn. C Happy Valley  
Goose Bay, NL  
Canada A0P 1C0  
Contact: Robert Feltham  
robert.feltham@vale.com  
T: (709)922-4236  
F:

## OIL CONDITION

Visc @ 40°C	cSt	<b>46.3</b>	46.2	46.4	46.3
Visc @ 100°C	cSt	<b>7.2</b>	5.2	6.9	6.9
Viscosity Index (VI)	Scale	<b>115</b>	---	103	104
Acid Number (AN)	mg KOH/g	<b>0.454</b>	0.405	0.46	0.358

## CONTAMINATION

Water	%	---	0.496	---	---
Particles >4µm		<b>48733</b>	99218	16237	5741
Particles >6µm		<b>12654</b>	17652	1741	603
Particles >14µm		<b>854</b>	904	43	24
ISO 4406:1999 (c)		<b>23/21/17</b>	24/21/17	21/18/13	20/16/12
Silicon	ppm	<b>0</b>	<1	0	<1
Sodium	ppm	<b>0</b>	0	0	<1
Potassium	ppm	<b>&lt;1</b>	0	0	0

## WEAR METALS

Iron	ppm	<b>2</b>	2	1	<1
Copper	ppm	<b>2</b>	2	1	<1
Lead	ppm	<b>0</b>	<1	<1	0
Tin	ppm	<b>0</b>	0	0	0
Aluminum	ppm	<b>&lt;1</b>	0	0	0
Chromium	ppm	<b>&lt;1</b>	0	0	<1
Molybdenum	ppm	<b>0</b>	0	0	0
Nickel	ppm	<b>0</b>	<1	<1	<1
Titanium	ppm	<b>0</b>	0	0	0
Silver	ppm	<b>0</b>	0	0	0
Manganese	ppm	<b>0</b>	<1	<1	0
Vanadium	ppm	<b>0</b>	0	0	0

## ADDITIVES

Calcium	ppm	<b>37</b>	26	50	52
Magnesium	ppm	<b>0</b>	<1	<1	<1
Zinc	ppm	<b>407</b>	415	428	431
Phosphorus	ppm	<b>316</b>	322	326	331
Barium	ppm	<b>0</b>	0	0	0
Boron	ppm	<b>&lt;1</b>	0	0	0

### Diagnosis

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. All component wear rates are normal. Particles >6µm are severely high. Particles >4µm are severely high. Particles >14µm are abnormally high. Particles >21µm are abnormally high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

**Depot:** INCVOS  
**Unique No:** 5004164  
**Signed:** Wes Davis  
**Report Date:** 10 Feb 2020

# GRAPHS

