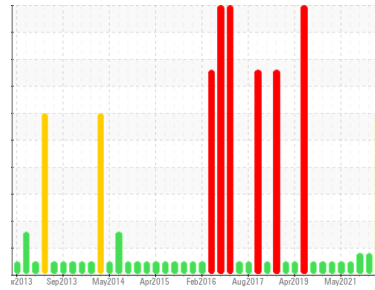


OIL ANALYSIS REPORT



Area
KEMP QUARRIES / BCS - STILLWELL
Machine Id
WL068
Component
Front Left Final Drive
Fluid
PETRO CANADA PRODURO TO-4 SAE 50 (--- GAL)

Sample Rating Trend



WEAR



DIAGNOSIS

Recommendation

We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. (Customer Sample Comment: PM-3 sampled fluid)

Wear

The iron level is severe. Gear wear is indicated.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

	method	limit/base	current	history 1	history 2
Sample Number	Client Info		PCA0086432	PCA0086122	PCA0062175
Sample Date	Client Info		05 Jul 2023	04 Mar 2023	24 Jun 2022
Machine Age	hrs	Client Info	23571	0	22557
Oil Age	hrs	Client Info	23571	0	0
Oil Changed	Client Info		N/A	Not Changd	Not Changd
Sample Status			SEVERE	ABNORMAL	ABNORMAL

WEAR METALS

	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m >800	1506	1167	718
Chromium	ppm	ASTM D5185m >10	3	2	1
Nickel	ppm	ASTM D5185m >5	<1	0	0
Titanium	ppm	ASTM D5185m >15	<1	0	<1
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >75	8	5	4
Lead	ppm	ASTM D5185m >10	0	0	<1
Copper	ppm	ASTM D5185m >75	15	16	5
Tin	ppm	ASTM D5185m >8	0	0	0
Antimony	ppm	ASTM D5185m >50	---	---	---
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m 2	8	15	7
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 0	2	3	1
Manganese	ppm	ASTM D5185m 0	12	8	5
Magnesium	ppm	ASTM D5185m 9	40	47	20
Calcium	ppm	ASTM D5185m 3114	3040	2439	2915
Phosphorus	ppm	ASTM D5185m 1099	1083	997	1045
Zinc	ppm	ASTM D5185m 1245	1264	1121	1251
Sulfur	ppm	ASTM D5185m 7086	8348	7954	6488

CONTAMINANTS

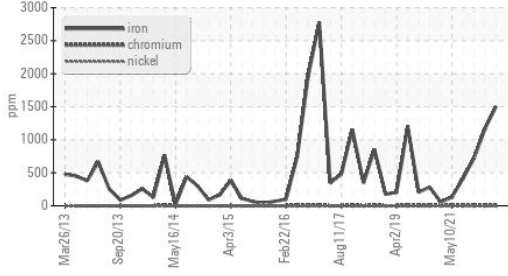
	method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m >400	39	17	20
Sodium	ppm	ASTM D5185m	2	1	0
Potassium	ppm	ASTM D5185m >20	3	0	2

VISUAL

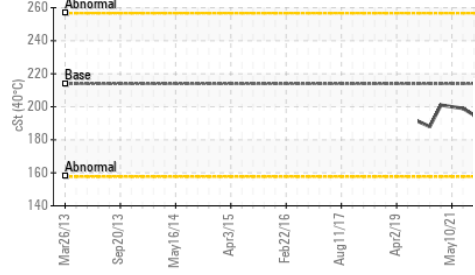
	method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual NONE	NONE	NONE	MODER
Yellow Metal	scalar	*Visual NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual NONE	NONE	NONE	NONE
Silt	scalar	*Visual NONE	NONE	NONE	NONE
Debris	scalar	*Visual NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual NONE	NONE	NONE	NONE
Appearance	scalar	*Visual NORML	NORML	NORML	NORML
Odor	scalar	*Visual NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual >0.2	NEG	NEG	NEG
Free Water	scalar	*Visual	NEG	NEG	NEG

OIL ANALYSIS REPORT

Ferrous Alloys



Viscosity @ 40°C



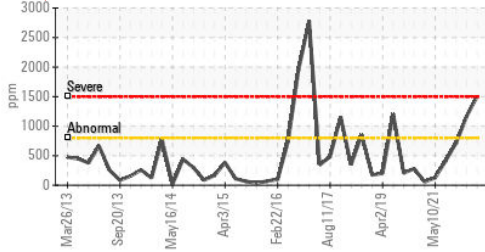
FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 40°C	cSt	ASTM D445	213.9	189	183.4	195

SAMPLE IMAGES		method	limit/base	current	history 1	history 2
Color				no image	no image	no image
Bottom				no image	no image	no image

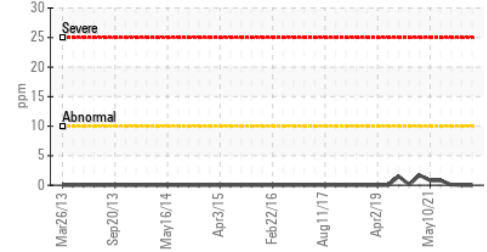
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GRAPHS

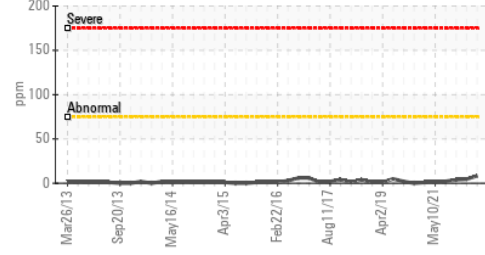
Iron (ppm)



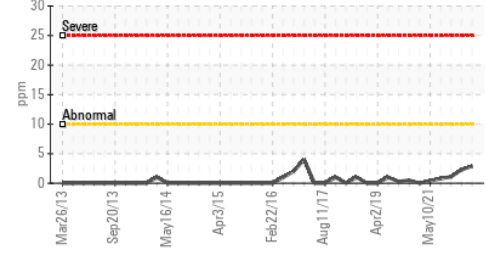
Lead (ppm)



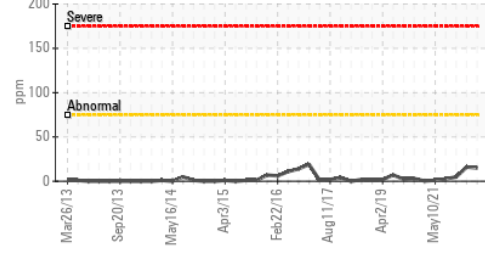
Aluminum (ppm)



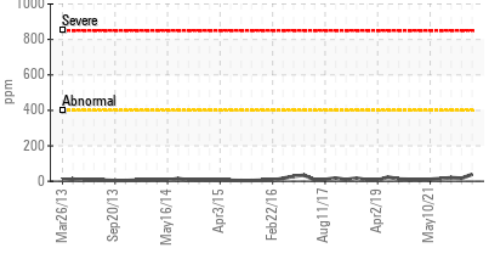
Chromium (ppm)



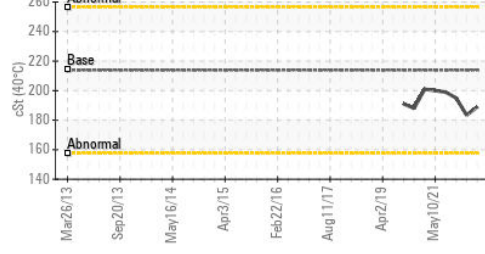
Copper (ppm)



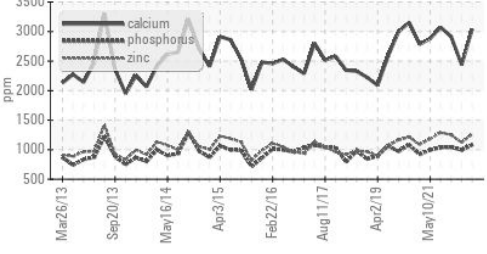
Silicon (ppm)



Viscosity @ 40°C



Additives



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0086432 **Received** : 10 Jul 2023
Lab Number : 05894705 **Diagnosed** : 12 Jul 2023
Unique Number : 10550515 **Diagnostician** : Sean Felton
Test Package : MOB 1

Kemp Quarries - Benton County Stone - Stillwell
 463917 Highway 100
 Bunch, OK
 US 74931
 Contact:

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)

stillwell@bentoncountystone.com

T:
F: