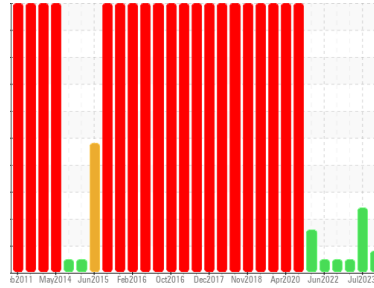


OIL ANALYSIS REPORT



Area
KEMP QUARRIES / MUSKOGEE SAND [66574]
Machine Id
WLO42
Component
Front Left Final Drive
Fluid
PETRO CANADA PRODURO TO-4 SAE 50 (--- GAL)

Sample Rating Trend



DIAGNOSIS

Recommendation
The oil change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. (Customer Sample Comment: PM-1 sampled fluid. Axle was replaced, fluid was contaminated, changed oil)

Wear
Gear wear is indicated.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PCA0087044	PCA0084621	PCA0087105
Sample Date	Client Info	24 Oct 2023	11 Jul 2023	23 May 2023
Machine Age	hrs	33553	32072	31670
Oil Age	hrs	33553	32072	1720
Oil Changed	Client Info	Changed	Changed	Not Changed
Sample Status		ABNORMAL	ABNORMAL	NORMAL

WEAR METALS

method	limit/base	current	history1	history2
Iron ppm	ASTM D5185m >800	▲ 857	448	123
Chromium ppm	ASTM D5185m >10	2	2	<1
Nickel ppm	ASTM D5185m >5	1	1	<1
Titanium ppm	ASTM D5185m >15	1	2	1
Silver ppm	ASTM D5185m >2	0	0	0
Aluminum ppm	ASTM D5185m >75	8	33	18
Lead ppm	ASTM D5185m >10	0	▲ 9	2
Copper ppm	ASTM D5185m >75	14	▲ 102	17
Tin ppm	ASTM D5185m >8	<1	▲ 6	<1
Vanadium ppm	ASTM D5185m	0	0	0
Cadmium ppm	ASTM D5185m	<1	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron ppm	ASTM D5185m 2	4	2	<1
Barium ppm	ASTM D5185m 0	19	0	0
Molybdenum ppm	ASTM D5185m 0	2	2	2
Manganese ppm	ASTM D5185m 0	7	5	1
Magnesium ppm	ASTM D5185m 9	26	25	20
Calcium ppm	ASTM D5185m 3114	3160	2594	2617
Phosphorus ppm	ASTM D5185m 1099	973	941	963
Zinc ppm	ASTM D5185m 1245	1154	1151	1157
Sulfur ppm	ASTM D5185m 7086	7995	4785	4615

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon ppm	ASTM D5185m >400	85	197	91
Sodium ppm	ASTM D5185m	4	2	0
Potassium ppm	ASTM D5185m >20	3	11	7

VISUAL

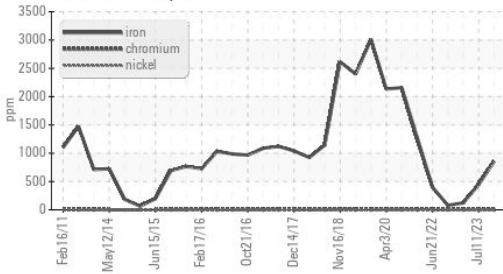
method	limit/base	current	history1	history2
White Metal	scalar *Visual	NONE	NONE	NONE
Yellow Metal	scalar *Visual	NONE	NONE	NONE
Precipitate	scalar *Visual	NONE	NONE	NONE
Silt	scalar *Visual	NONE	NONE	NONE
Debris	scalar *Visual	NONE	NONE	NONE
Sand/Dirt	scalar *Visual	NONE	NONE	NONE
Appearance	scalar *Visual	NORML	NORML	NORML
Odor	scalar *Visual	NORML	NORML	NORML
Emulsified Water	scalar *Visual	>0.2	NEG	NEG
Free Water	scalar *Visual		NEG	NEG

FLUID PROPERTIES

method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D445 213.9	196	207	212

OIL ANALYSIS REPORT

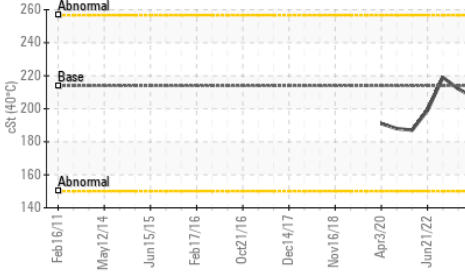
▲ Ferrous Alloys



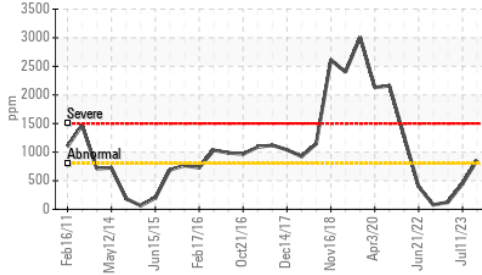
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color			no image	no image	no image
Bottom			no image	no image	no image

GRAPHS

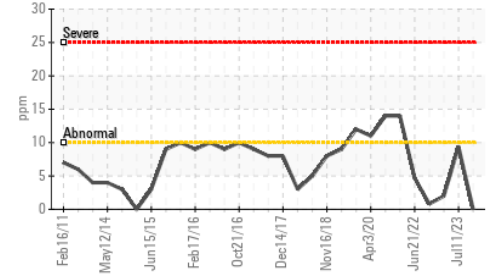
Viscosity @ 40°C



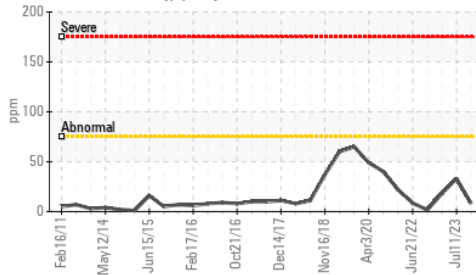
▲ Iron (ppm)



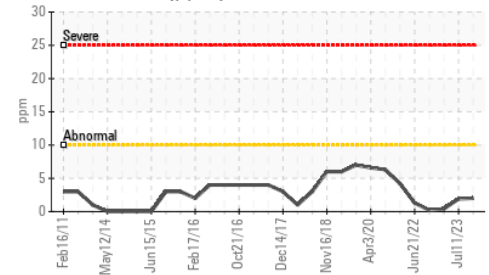
Lead (ppm)



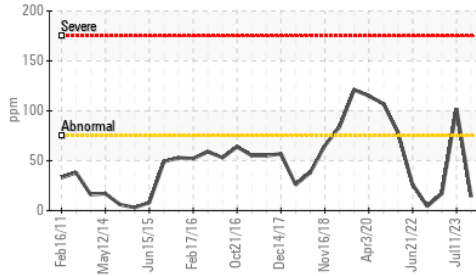
Aluminum (ppm)



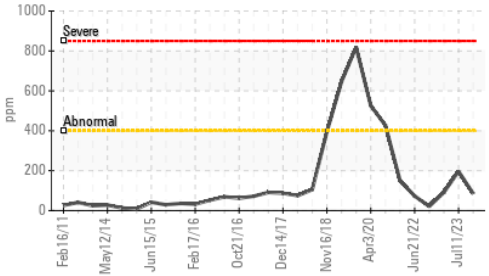
Chromium (ppm)



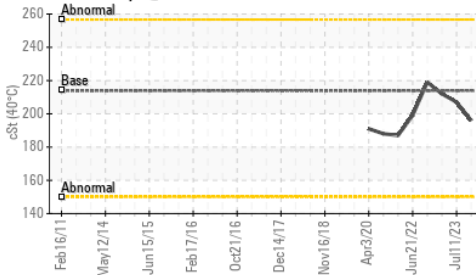
Copper (ppm)



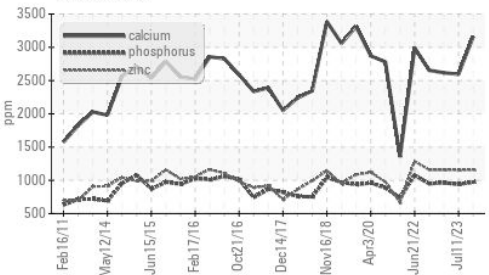
Silicon (ppm)



Viscosity @ 40°C



Additives



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0087044 **Received** : 30 Oct 2023
Lab Number : 05993853 **Diagnosed** : 01 Nov 2023
Unique Number : 10722213 **Diagnostician** : Sean Felton
Test Package : MOB 1

Kemp Quarries - Muskogee Sand
 3395 W 50th St N
 Porter, OK
 US 74454
 Contact: MUSCOGEE NOTIFICATIONS
 muskogee@muskogeessand.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: