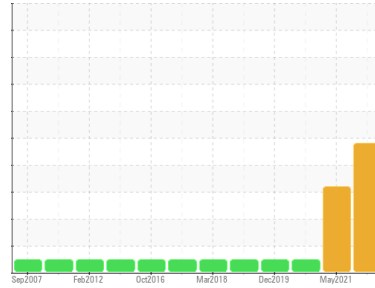


PROBLEM SUMMARY

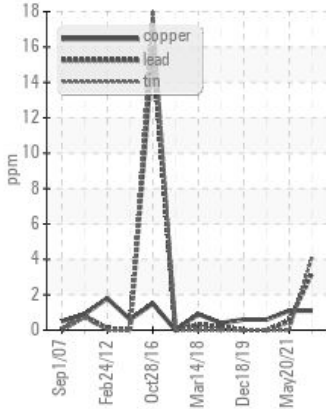
Sample Rating Trend



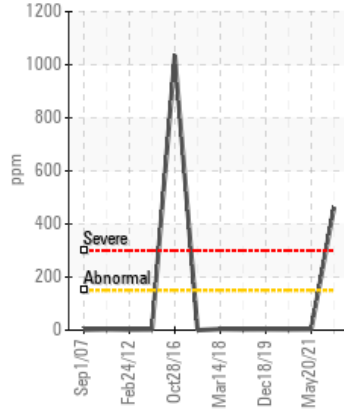
Area
Cranes
Machine Id
Crane - Mid Ship Slew Brg Grease (S/N Sample Tag MA-04002)
Component
Forward Grease
Fluid
PETRO CANADA PRECISION XL EP2 (--- LTR)

COMPONENT CONDITION SUMMARY

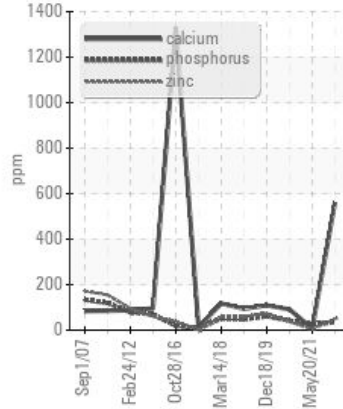
▲ Non-ferrous Metals



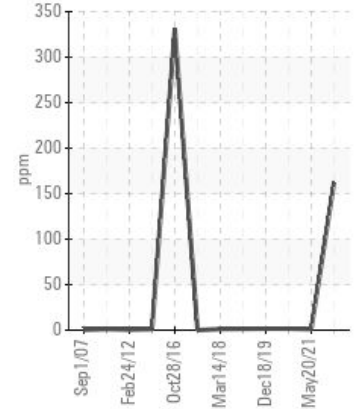
▲ Silicon (ppm)



▲ Additives



▲ Aluminum (ppm)



RECOMMENDATION

We advise that you check all areas where dirt can enter the system. We recommend that you re-grease the component if this has not already been done. Confirm the source of the grease being utilized for re-greasing. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	ABNORMAL	NORMAL
Tin	ppm	ASTM D5185(m) >5	▲ 4	0	0
Magnesium	ppm	ASTM D5185(m)	▲ 28	<1	7
Molybdenum	ppm	ASTM D5185(m)	▲ 230	2	113
Antimony	ppm	ASTM D5185(m)	▲ 16	2	12
Aluminum	ppm	ASTM D5185(m)	▲ 162	1	2
Calcium	ppm	ASTM D5185(m)	▲ 560	▲ 7	91
Silicon	ppm	ASTM D5185(m) >150	▲ 462	4	3

PrtFilter



Customer Id: TERHAM
Sample No.: PC0061552
Lab Number: 02582371
Test Package: GRS 1



To manage this report scan the QR code

To discuss the diagnosis or test data:
Bill Quesnel CLS, OMA II, MLA-III, LLA-I +1
(289)291-4641 x4641
Bill.Quesnel@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Dirt Access	---	---	?	We advise that you check all areas where dirt can enter the system.
Check Fluid Source	---	---	?	Confirm the source of the lubricant being utilized for top-up/fill.

HISTORICAL DIAGNOSIS

20 May 2021 Diag: Bill Quesnel

WEAR



We recommend that you re-grease the component if this has not already been done. Confirm the source of the grease being utilized for top-up/fill. We recommend an early resample to monitor this condition. PQ levels are abnormal. The high ferrous density (PQ) index indicates that abnormal wear is occurring. There is no indication of any contamination in the grease. Additive levels indicate the addition of a different brand, or type of grease. The grease is no longer serviceable as a result of the abnormal and/or severe wear.

[view report](#)



19 Jan 2020 Diag: Bill Quesnel

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the grease. The condition of the grease is acceptable for the time in service.

[view report](#)



18 Dec 2019 Diag: Bill Quesnel

NORMAL



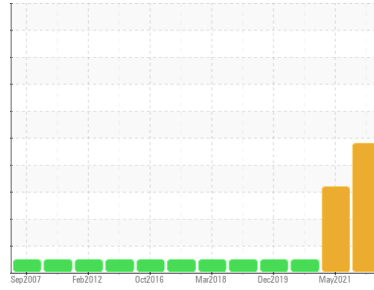
Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the grease. The condition of the grease is acceptable for the time in service.

[view report](#)



GREASE ANALYSIS

Sample Rating Trend



Area
Cranes
Machine Id
Crane - Mid Ship Slew Brg Grease (S/N Sample Tag MA-04002)
Component
Forward Grease
Fluid
PETRO CANADA PRECISION XL EP2 (--- LTR)

DIAGNOSIS

Recommendation
We advise that you check all areas where dirt can enter the system. We recommend that you re-grease the component if this has not already been done. Confirm the source of the grease being utilized for re-greasing. We recommend an early resample to monitor this condition.

Wear
Tin ppm levels are abnormal. Aluminum and antimony ppm levels are noted.

Grease Condition
Additive levels indicate the addition of a different brand, or type of grease. The grease is no longer serviceable as a result of the abnormal and/or severe wear.

Contaminants
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PC0061552	PC0030634	PC0016455
Sample Date	Client Info			12 Aug 2023	20 May 2021	19 Jan 2020
Machine Age	hrs	Client Info		0	0	0
Grease Age	hrs	Client Info		0	0	0
Grease Serviced	Client Info			N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	NORMAL

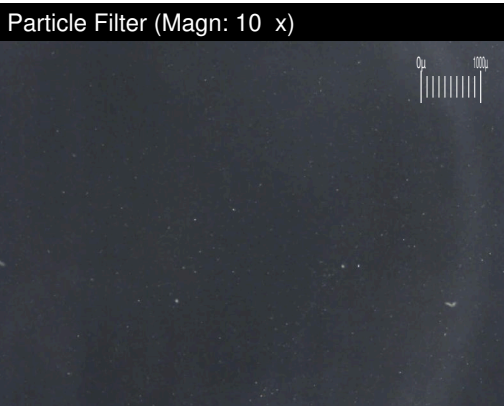
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*	>200	700	▲ 8452	4346
Iron	ppm	ASTM D5185(m)	>250	401	95	518
Chromium	ppm	ASTM D5185(m)	>10	4	<1	2
Nickel	ppm	ASTM D5185(m)	>5	<1	<1	<1
Cadmium	ppm	ASTM D5185(m)		0	0	0
Titanium	ppm	ASTM D5185(m)		2	3	<1
Vanadium	ppm	ASTM D5185(m)		<1	0	0
Lead	ppm	ASTM D5185(m)	>25	3	<1	0
Copper	ppm	ASTM D5185(m)	>75	1	1	<1
Tin	ppm	ASTM D5185(m)	>5	▲ 4	0	0
Silver	ppm	ASTM D5185(m)	>5	0	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		2	5	1
Magnesium	ppm	ASTM D5185(m)		▲ 28	<1	7
Manganese	ppm	ASTM D5185(m)		4	<1	7
Molybdenum	ppm	ASTM D5185(m)		▲ 230	2	113
Phosphorus	ppm	ASTM D5185(m)		35	26	42
Zinc	ppm	ASTM D5185(m)		50	▲ 2	38
Antimony	ppm	ASTM D5185(m)		▲ 16	2	12

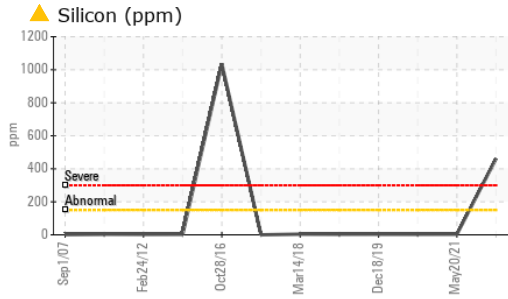
THICKENER/SOAP		method	limit/base	current	history1	history2
Aluminum	ppm	ASTM D5185(m)		▲ 162	1	2
Barium	ppm	ASTM D5185(m)		2	<1	<1
Calcium	ppm	ASTM D5185(m)		▲ 560	▲ 7	91
Sodium	ppm	ASTM D5185(m)		19	11	35
Lithium	ppm	ASTM D5185(m)		104	49	222
Sulfur	ppm	ASTM D5185(m)		724	▲ 890	721

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>150	▲ 462	4	3
Potassium	ppm	ASTM D5185(m)		4	3	2

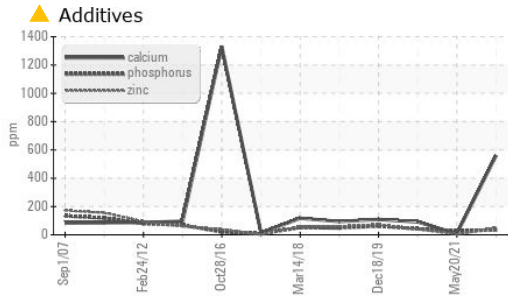
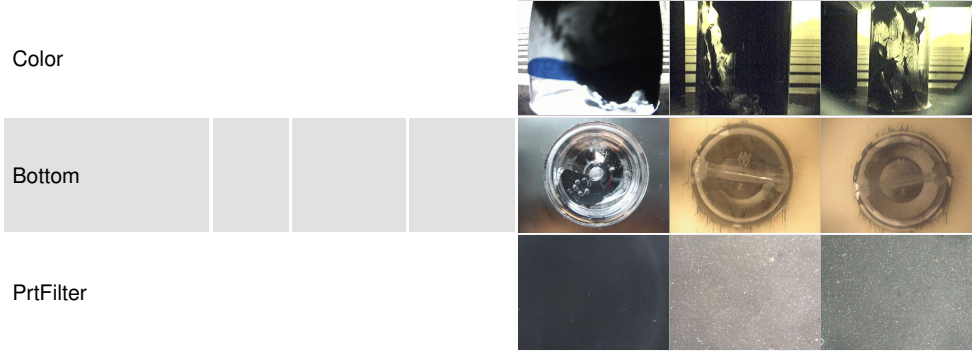
GREASE CONDITION		method	limit/base	current	history1	history2
Grease Color	Visual*	Brown		Black	Grey	Brown
Texture	In-house*	Stringy		Stringy	Long fiber	Short fiber
NLGI Consistency	NLGI Scale SKF Method*	2		2	2	2



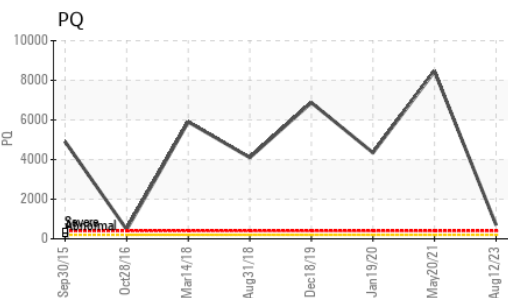
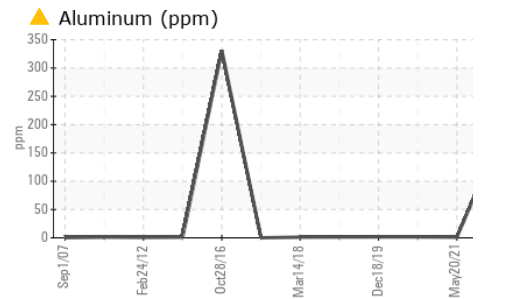
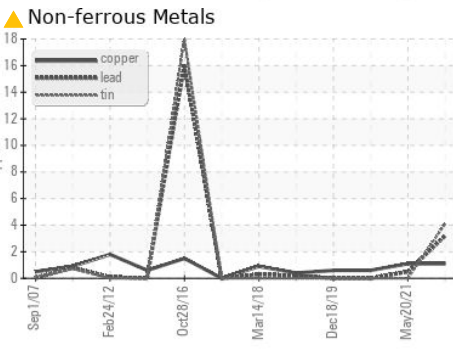
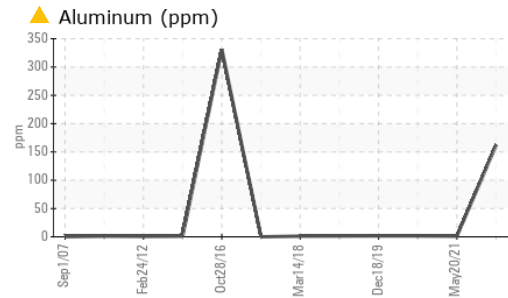
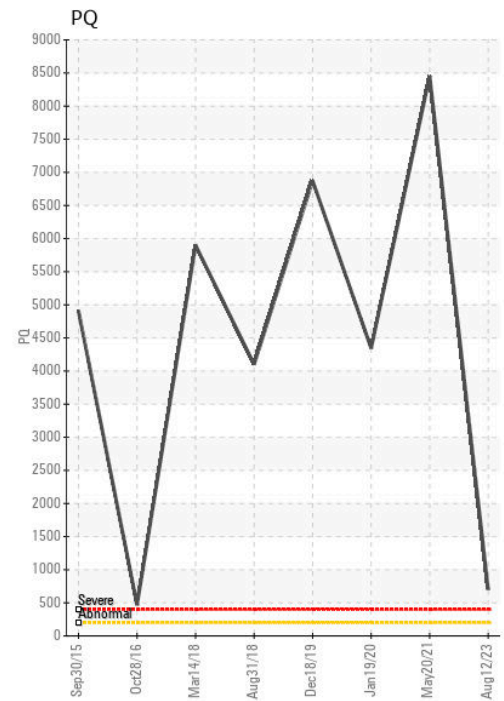
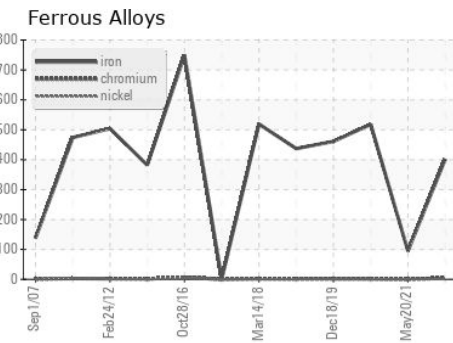
GREASE ANALYSIS



SAMPLE IMAGES method limit/base current history1 history2



GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0061552 **Received** : 13 Sep 2023
Lab Number : 02582371 **Diagnosed** : 26 Sep 2023
Unique Number : 5643436 **Diagnostician** : Bill Quesnel
Test Package : GRS 1 (Additional Tests: BottomAnalysis, PrtCount, PrtFilter)

Suncor - Terra Nova Projects
 Scotia Centre, 235 Water Strret
 St. John's, NL
 CA A1C 1B6
 Contact: Josh Hynes
 joshynes@suncor.com
 T: (709)778-3575
 F: (709)724-2835

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.