

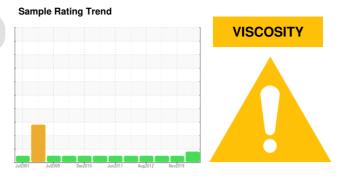
GREASE ANALYSIS

CRANES

Slew Bearing - Aft Crane - Boom

Grease

PETRO CANADA MULTPURPOSE EP 1 GREASE (--- LTR)



DIAGNOSIS

Recommendation

We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Grease Condition

Grease consistency has changed by 1-1/2 NLGI grades from NLGI 1 to 2-3.

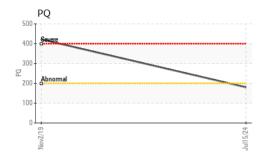
Contaminants

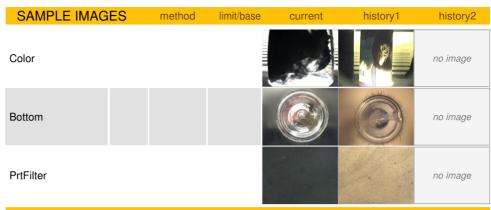
There is no indication of any contamination in the grease.

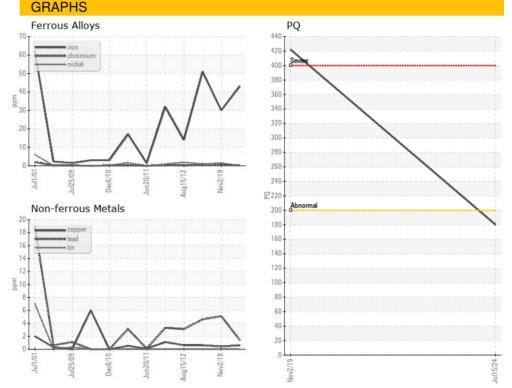
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PC0080138	PC0006283	PC
Sample Date		Client Info		15 Jul 2024	02 Nov 2019	19 Feb 2013
Machine Age	hrs	Client Info		0	0	0
Grease Age	hrs	Client Info		0	0	0
Grease Serviced		Client Info		N/A	N/A	N/A
Sample Status				MARGINAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
PQ		ASTM D8184*	>200	180	422	
Iron	ppm	ASTM D5185(m)	>250	43	30	51
Chromium	ppm	ASTM D5185(m)	>10	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>5	0	1	<1
Cadmium	ppm	ASTM D5185(m)		0	0	0
Titanium	ppm	ASTM D5185(m)		0	<1	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
Lead	ppm	ASTM D5185(m)		1	5	5
Copper	ppm	ASTM D5185(m)	>75	<1	<1	<1
Tin	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>5	0	<1	<1
ADDITIVES		method	limit/base	ourront	hictory1	history2
712277723		motriod	IIIIII Dasc	current	history1	HISTOTYZ
Boron	ppm	ASTM D5185(m)	iiiiii/basc	1	3	6
	ppm ppm		iiiiii/basc		3	6
Boron	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	iiiiii basc	1 5 <1	3 2 <1	6 12 <1
Boron Magnesium Manganese Molybdenum	ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	iiiiii basc	1 5 <1 249	3 2 <1 6	6 12 <1 4
Boron Magnesium Manganese Molybdenum Phosphorus	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		1 5 <1 249 35	3 2 <1 6 39	6 12 <1 4 44
Boron Magnesium Manganese Molybdenum Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185(m)		1 5 <1 249 35 34	3 2 <1 6 39 35	6 12 <1 4 44 71
Boron Magnesium Manganese Molybdenum Phosphorus	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	in in Seaso	1 5 <1 249 35	3 2 <1 6 39	6 12 <1 4 44
Boron Magnesium Manganese Molybdenum Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base	1 5 <1 249 35 34	3 2 <1 6 39 35	6 12 <1 4 44 71
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony	ppm ppm ppm ppm ppm	ASTM D5185(m)		1 5 <1 249 35 34 21	3 2 <1 6 39 35 20	6 12 <1 4 4 44 71 39
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/S	ppm ppm ppm ppm ppm ppm	ASTM D5185(m)		1 5 <1 249 35 34 21	3 2 <1 6 39 35 20 history1	6 12 <1 4 44 71 39
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/S Aluminum	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)		1 5 <1 249 35 34 21 current	3 2 <1 6 39 35 20 history1	6 12 <1 4 44 71 39 history2
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/S Aluminum Barium Calcium Sodium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)		1 5 <1 249 35 34 21 current 1 2 90 37	3 2 <1 6 39 35 20 history1 5 4 150 16	6 12 <1 4 44 71 39 history2 1 8 363 69
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/S Aluminum Barium Calcium Sodium Lithium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)		1 5 <1 249 35 34 21 current 1 2 90 37 220	3 2 <1 6 39 35 20 history1 5 4 150 16 165	6 12 <1 4 44 71 39 history2 1 8 363 69 224
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/S Aluminum Barium Calcium Sodium Lithium Sulfur	ppm	ASTM D5185(m)		1 5 <1 249 35 34 21 current 1 2 90 37	3 2 <1 6 39 35 20 history1 5 4 150 16	6 12 <1 4 44 71 39 history2 1 8 363 69
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/S Aluminum Barium Calcium Sodium Lithium	ppm	ASTM D5185(m)		1 5 <1 249 35 34 21 current 1 2 90 37 220	3 2 <1 6 39 35 20 history1 5 4 150 16 165	6 12 <1 4 44 71 39 history2 1 8 363 69 224
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/S Aluminum Barium Calcium Sodium Lithium Sulfur	ppm	ASTM D5185(m)	limit/base	1 5 <1 249 35 34 21 current 1 2 90 37 220 666	3 2 <1 6 39 35 20 history1 5 4 150 16 165 631	6 12 <1 4 44 71 39 history2 1 8 363 69 224 565 history2 2
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/S Aluminum Barium Calcium Sodium Lithium Sulfur CONTAMINAN	ppm	ASTM D5185(m)	limit/base	1 5 <1 249 35 34 21 current 1 2 90 37 220 666 current	3 2 <1 6 39 35 20 history1 5 4 150 16 165 631 history1	6 12 <1 4 44 71 39 history2 1 8 363 69 224 565 history2
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/S Aluminum Barium Calcium Sodium Lithium Sulfur CONTAMINAN Silicon	ppm	ASTM D5185(m)	limit/base	1 5 <1 249 35 34 21 current 1 2 90 37 220 666 current 3	3 2 <1 6 39 35 20 history1 5 4 150 16 165 631 history1 15	6 12 <1 4 44 71 39 history2 1 8 363 69 224 565 history2 2
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/S Aluminum Barium Calcium Sodium Lithium Sulfur CONTAMINAN Silicon Potassium	ppm	ASTM D5185(m)	limit/base limit/base >150	1 5 <1 249 35 34 21 current 1 2 90 37 220 666 current 3 3 3	3 2 <1 6 39 35 20 history1 5 4 150 16 165 631 history1 15	6 12 <1 4 44 71 39 history2 1 8 363 69 224 565 history2 2 5
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/S Aluminum Barium Calcium Sodium Lithium Sulfur CONTAMINAN Silicon Potassium GREASE CONI	ppm	ASTM D5185(m) METHOD METHOD ASTM D5185(m) METHOD METHOD ASTM D5185(m) METHOD	limit/base limit/base >150 limit/base	1 5 <1 249 35 34 21 current 1 2 90 37 220 666 current 3 3 3 current	3 2 <1 6 39 35 20 history1 5 4 150 16 165 631 history1 15 1	6 12 <1 4 44 71 39 history2 1 8 363 69 224 565 history2 2 5 history2

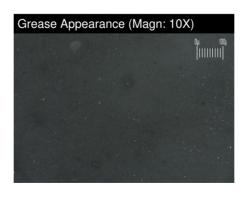


GREASE ANALYSIS











CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No.

: PC0080138 Lab Number : 02648276 Unique Number : 5813828

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Received : 16 Jul 2024 **Tested** : 17 Jul 2024

Diagnosed : 18 Jul 2024 - Bill Quesnel

Test Package : GRS 1 (Additional Tests: BottomAnalysis) 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.

Suncor - Terra Nova Projects

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