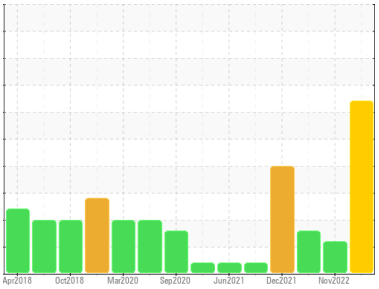
PROBLEM SUMMARY

Sample Rating Trend

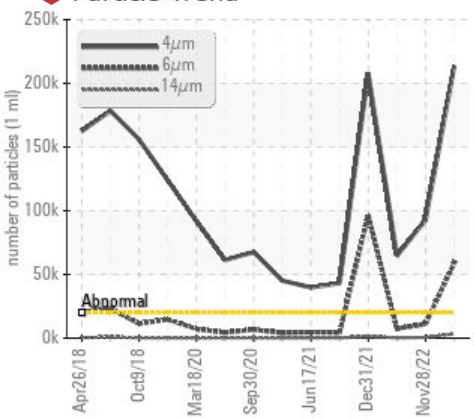


ISO

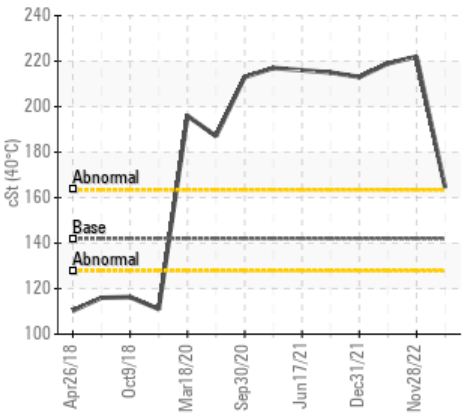
Area
PF RESIN
Machine Id
RX1 A1 AGITATOR (S/N 30292 7)
Component
Gearbox
Fluid
CHEVRON MEROPA 150 (1 GAL)

COMPONENT CONDITION SUMMARY

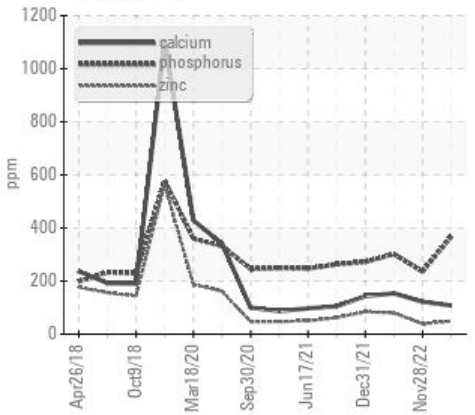
Particle Trend



Viscosity @ 40°C



Additives



RECOMMENDATION

Please resample in 30 days to validate whether the wear rate is steady, or still rising. The net Fe value is low, but is elevated over previous sample results. The oil should be filtered while the machine is running to control possible hard particles that could contribute to the wear increase.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	ABNORMAL	ABNORMAL
Boron	ppm	ASTM D5185m		▲ **28**	23	11
Calcium	ppm	ASTM D5185m		▲ **108**	122	▲ 154
Zinc	ppm	ASTM D5185m		▲ **49**	39	▲ 80
Sulfur	ppm	ASTM D5185m		▲ **14191**	10124	6889
Particles >4µm		ASTM D7647	>20000	⬢ **213411**	▲ 92771	▲ 64763
Particles >6µm		ASTM D7647	>5000	⬢ **58800**	▲ 10975	▲ 7495
Particles >14µm		ASTM D7647	>640	▲ **3213**	526	210
Particles >21µm		ASTM D7647	>160	▲ **735**	172	35
Oil Cleanliness		ISO 4406 (c)	>21/19/16	⬢ **25/23/19**	▲ 24/21/16	▲ 23/20/15
Visc @ 40°C	cSt	ASTM D445	142	▲ **164.4**	222	219

Customer Id: HEXLAG
Sample No.: PLS0000627
Lab Number: 05903695
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Mike Johnson +1 (615)771-6030
mike.johnson@amrri.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

28 Nov 2022 Diag: Mike Johnson

ISO

Filter oil if possible using the drum station filter. If filtration is not possible, consider flushing and filling the gearbox at next available opportunity. Poor sample quality could also be due to poor sample port location. Review that sample port is not being pulled from drain. Resample at next normal interval.Wear particles are low and acceptable. Particle contamination is significantly elevated. Filtration can help extend machine life. Fluid health is acceptable for continued use AS AN ISO 220 oil. Site has reported a change to ISO 150, but this sample is still `220` grade.

view report

11 Mar 2022 Diag: Doug Bogart

ADDITIVES

Filter oil with B6=75 filter media or better if possible. If oil cannot be filtered, consider changing oil at next available opportunity. Confirm that oil is correctly named on sample labels. Resample at next normal interval.Wear indicators are low but increasing, which can indicate an accelerated wear state. Particles >4µm are abnormally high. Particles >6µm are notably high. Calcium and Zinc indicators are elevated from expected values. This can be due to mixed oil types or contaminants from external sources. These indicators are relatively unchanged from the previous sample.

view report

31 Dec 2021 Diag: Mike Johnson

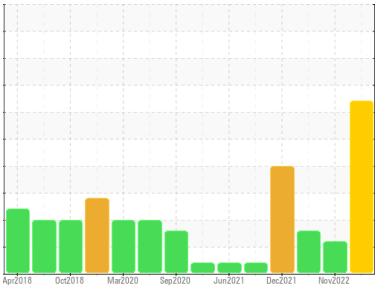
ISO

Filter oil if possible using B6=75 filter media or better. If filtering is not possible, consider changing oil at next available opportunity. Investigate possible contamination sources such as broken breathers, broken seals, or poor sampling techniques. Resample at next normal interval.Wear indicators are low and acceptable. Particle contamination is extremely elevated. Particle contamination on this level can significantly reduce machine life. Several additive numbers have noticeably changed from previous baselines indicating possible contamination or intermixing of different oils. This is a noticeable trend over time indicating that the buildup is most likely caused by contamination.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
PF RESIN
Machine Id
RX1 A1 AGITATOR (S/N 30292 7)
Component
Gearbox
Fluid
CHEVRON MEROPA 150 (1 GAL)

DIAGNOSIS

Recommendation

Please resample in 30 days to validate whether the wear rate is steady, or still rising. The net Fe value is low, but is elevated over previous sample results. The oil should be filtered while the machine is running to control possible hard particles that could contribute to the wear increase.

Wear

Iron wear rate is slightly elevated, and is well above the normal low trend.

Contamination

The particle count is substantially elevated. Filter the oil using B6=75 or better quality media.

Fluid Condition

The viscosity is slightly above the `alert` level of +10%. This could be caused by residual ISO 220 used previously. This is not a concern at this time. Other lubricant health parameters (additives, AN value, Ox-Ni-Su) suggest the oil is good for continued use.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PLS0000627**	PLS0000630	PLS0000310
Sample Date		Client Info		**18 Jul 2023**	28 Nov 2022	11 Mar 2022
Machine Age	yrs	Client Info		**39**	39	39
Oil Age	yrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**SEVERE**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184		**33**	14	16
Iron	ppm	ASTM D5185m	>200	**24**	8	14
Chromium	ppm	ASTM D5185m	>15	**<1**	0	0
Nickel	ppm	ASTM D5185m	>15	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**0**	0	<1
Aluminum	ppm	ASTM D5185m	>25	**<1**	0	<1
Lead	ppm	ASTM D5185m	>100	**0**	0	<1
Copper	ppm	ASTM D5185m	>200	**2**	0	1
Tin	ppm	ASTM D5185m	>25	**0**	0	0
Antimony	ppm	ASTM D5185m	>5	**---**	---	---
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**<1**	0	<1

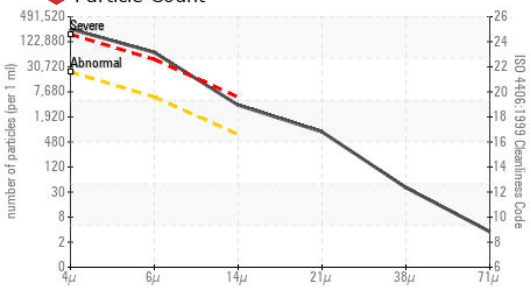
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		▲ **28**	23	11
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**2**	<1	4
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**1**	2	0
Calcium	ppm	ASTM D5185m		▲ **108**	122	▲ 154
Phosphorus	ppm	ASTM D5185m		**368**	236	302
Zinc	ppm	ASTM D5185m		▲ **49**	39	▲ 80
Sulfur	ppm	ASTM D5185m		▲ **14191**	10124	6889

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**2**	<1	1
Sodium	ppm	ASTM D5185m		**<1**	0	0
Potassium	ppm	ASTM D5185m	>20	**0**	<1	0

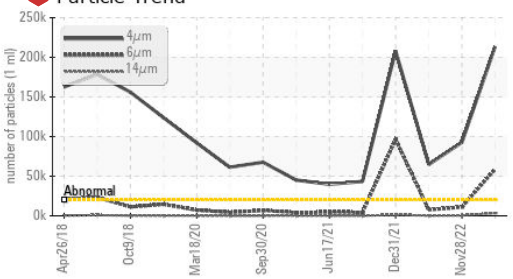
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0.1	0
Nitration	Abs/cm	*ASTM D7624		**2.9**	3.0	2.8
Sulfation	Abs/.1mm	*ASTM D7415		**12.4**	13.0	12.7

OIL ANALYSIS REPORT

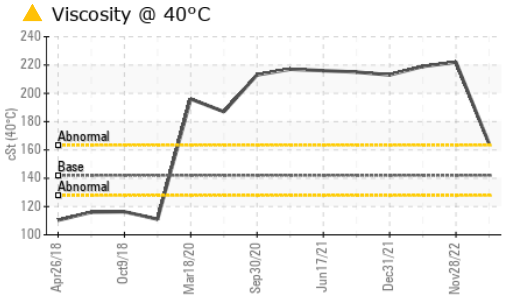
Particle Count



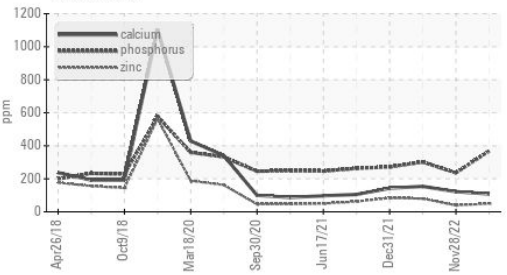
Particle Trend



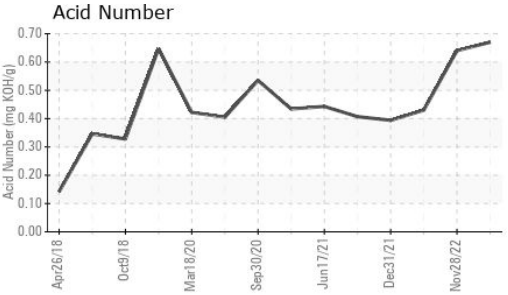
Viscosity @ 40°C



Additives



Acid Number

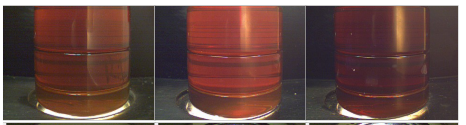
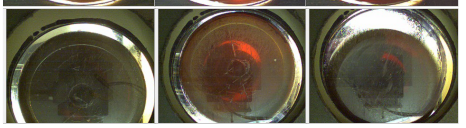


FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	**213411**	92771	64763
Particles >6µm		ASTM D7647	>5000	**58800**	10975	7495
Particles >14µm		ASTM D7647	>640	**3213**	526	210
Particles >21µm		ASTM D7647	>160	**735**	172	35
Particles >38µm		ASTM D7647	>40	**34**	27	0
Particles >71µm		ASTM D7647	>10	**3**	6	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	**25/23/19**	24/21/16	23/20/15

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		**3.8**	3.2	3.2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.67**	0.64	0.43

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**LIGHT**	NONE	NONE
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**	LIGHT	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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	142	**164.4**	222	219

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PLS0000627 **Received** : 20 Jul 2023
Lab Number : 05903695 **Diagnosed** : 23 Aug 2023
Unique Number : 10565051 **Diagnostician** : Mike Johnson
Test Package : IND 2 (Additional Tests: FT-IR, PQ, PrtCount)

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)

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LA GRANDE, OR
US 97850
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ian.parks@hexion.com
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Report Id: HEXLAG [WUSCAR] 05903695 (Generated: 08/23/2023 13:58:54) Rev: 1

Submitted By: ?