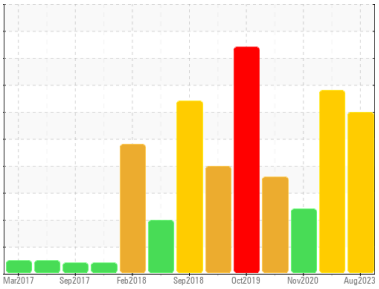
PROBLEM SUMMARY

Sample Rating Trend

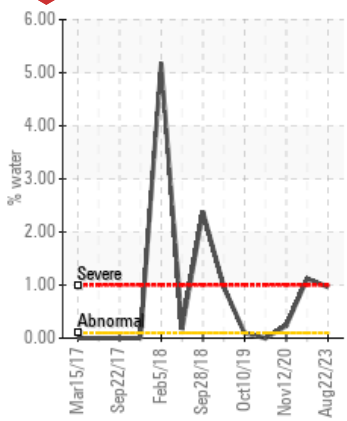


WATER

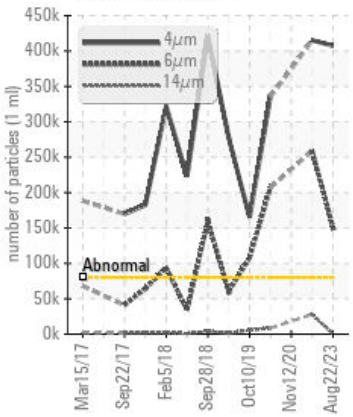
Area
Wide Cold Mill/Reduction Mill
Machine Id
80" REDUCTION MILL MORGOIL (MILL OIL CELLAR) (WCM005) (S/N 1000006025)
Component
Gear Lube System
Fluid
PETRO CANADA ULTIMA EP 460 (5000 GAL)

COMPONENT CONDITION SUMMARY

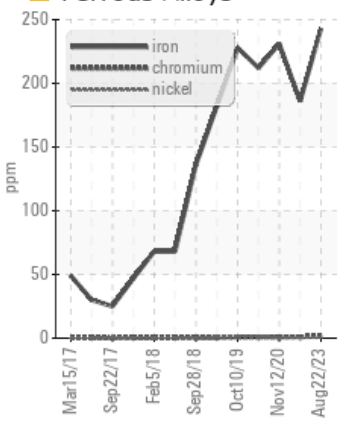
Water



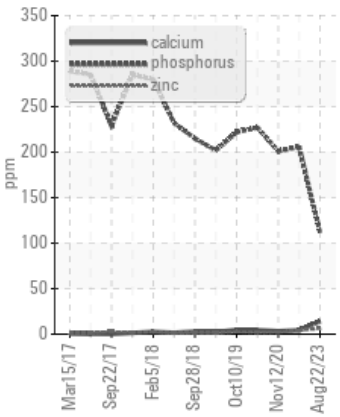
Particle Trend



Ferrous Alloys



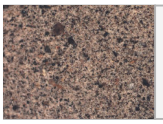
Additives



RECOMMENDATION

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	ABNORMAL
Iron	ppm	ASTM D5185(m)	>150	▲ **243**	▲ 186	▲ 231
Water	%	ASTM D6304*	>0.1	⬢ **0.964**	⬢ 1.121	▲ 0.235
ppm Water	ppm	ASTM D6304*	>1000	⬢ **9649.7**	⬢ 11218.6	▲ 2354.9
Particles >4µm		ASTM D7647	>80000	▲ **407444**	⬢ 415117	---
Particles >6µm		ASTM D7647	>80000	▲ **150759**	▲ 259292	---
Oil Cleanliness		ISO 4406 (c)	>23/23/21	▲ **26/24/16**	⬢ 26/25/22	---
Appearance	scalar	Visual*	NORML	▲ **WGOIL**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	▲ **.5%**	▲ 1%	▲ .2%
PrtFilter					*no image*	*no image*

Customer Id: ALGSSM
Sample No.: WC0752303
Lab Number: 02577809
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@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
Change Filter	---	---	?	We recommend you service the filters on this component.
Water Drain-off	---	---	?	We advise that you follow the water drain-off procedure for this component.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Contact Required	---	---	?	Please contact your representative for information regarding the proper sampling kits for your service.
Alert	---	---	?	NOTE: We recommend using IND 3 test kits,
Check Fluid Source	---	---	?	Confirm the source of the lubricant being utilized for top-up/fill.
Check Water Access	---	---	?	We advise that you check for the source of water entry.
Check Seals	---	---	?	Check seals and/or filters for points of contaminant entry.
Filter Fluid	---	---	?	We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil.

HISTORICAL DIAGNOSIS

WATER

29 Jan 2021 Diag: Kevin Marson

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. We advise that you follow the water drain-off procedure for this component. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation.Iron ppm levels are abnormal. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. Water and ppm water contamination levels are severe. Particles >4µm are severely high. Particles >4µm are severely high.. Particles >4µm are severely high... Particles >6µm are abnormally high. There is a high concentration of water present in the oil. Free water present. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

WATER

12 Nov 2020 Diag: Kevin Marson

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend an early resample to monitor this condition.Iron ppm levels are abnormal. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. There is a moderate concentration of water present in the oil. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

VISUAL METAL

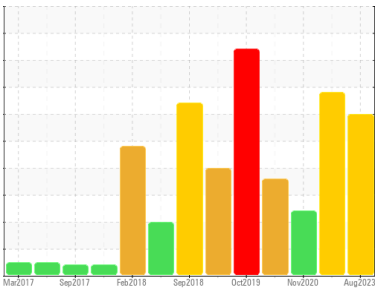
29 Jan 2020 Diag: Kevin Marson

We advise that you check for visible metal particles in the oil. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using Advanced Oil Monitoring (AOM) kits for this system. The AOM test package includes advanced level testing to determine the suitability of turbine and large industrial compressor oils for continued use.Iron ppm levels are abnormal. Light concentration of visible metal present. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. Particles >4µm are abnormally high. Particles >6µm are abnormally high. There is a moderate amount of visible silt present in the sample. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service (unconfirmed). The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



WATER

Area
Wide Cold Mill/Reduction Mill
Machine Id
80" REDUCTION MILL MORGOIL (MILL OIL CELLAR) (WCM005) (S/N 1000006025)
Component
Gear Lube System
Fluid
PETRO CANADA ULTIMA EP 460 (5000 GAL)

DIAGNOSIS

Recommendation

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

Wear

Iron ppm levels are abnormal. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion.

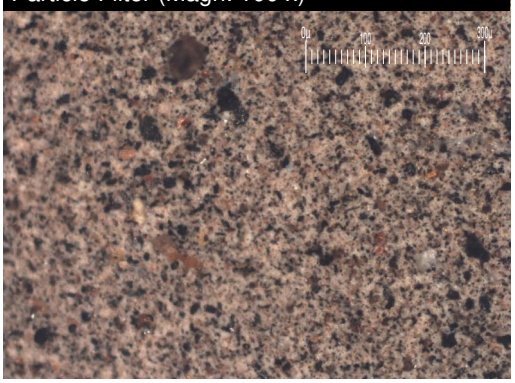
Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. There is a high concentration of water present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code.

Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

Particle Filter (Magn: 100 x)



SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0752303**	WC0419575	WC0434884
Sample Date		Client Info		**22 Aug 2023**	29 Jan 2021	12 Nov 2020
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**SEVERE**	SEVERE	ABNORMAL

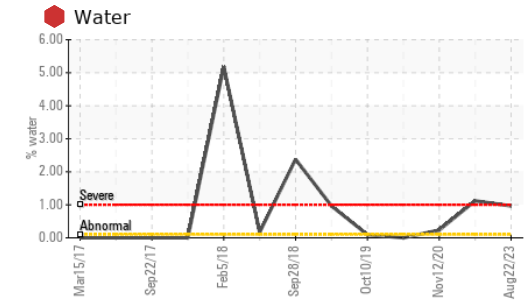
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**14**	104	52
Iron	ppm	ASTM D5185(m)	>150	▲ **243**	▲ 186	▲ 231
Chromium	ppm	ASTM D5185(m)	>10	**2**	1	<1
Nickel	ppm	ASTM D5185(m)	>10	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	<1	<1
Aluminum	ppm	ASTM D5185(m)	>25	**<1**	1	<1
Lead	ppm	ASTM D5185(m)	>100	**0**	0	<1
Copper	ppm	ASTM D5185(m)	>50	**2**	4	2
Tin	ppm	ASTM D5185(m)	>10	**2**	2	2
Antimony	ppm	ASTM D5185(m)	>5	**0**	0	<1
Vanadium	ppm	ASTM D5185(m)		**0**	0	<1
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

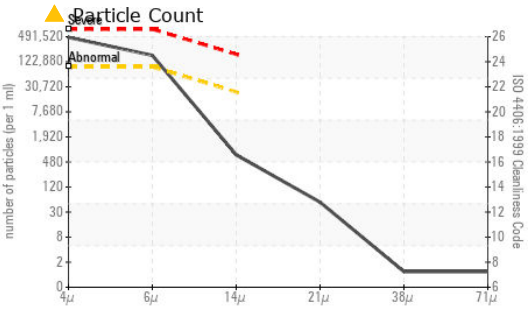
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	111	**3**	2	1
Barium	ppm	ASTM D5185(m)		**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Manganese	ppm	ASTM D5185(m)		**2**	<1	<1
Magnesium	ppm	ASTM D5185(m)	2	**1**	<1	<1
Calcium	ppm	ASTM D5185(m)	6	**14**	4	3
Phosphorus	ppm	ASTM D5185(m)	482	**112**	206	201
Zinc	ppm	ASTM D5185(m)	3	**6**	4	2
Sulfur	ppm	ASTM D5185(m)	1458	**4119**	9888	12280
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

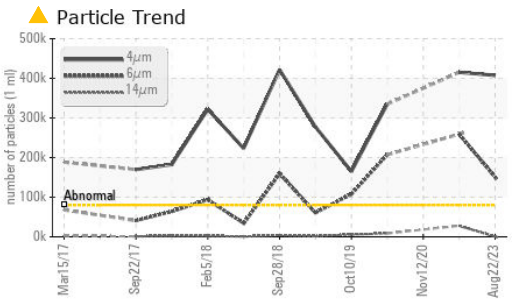
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>50	**4**	6	4
Sodium	ppm	ASTM D5185(m)		**1**	2	<1
Potassium	ppm	ASTM D5185(m)	>20	**3**	2	2
Water	%	ASTM D6304*	>0.1	● **0.964**	● 1.121	▲ 0.235
ppm Water	ppm	ASTM D6304*	>1000	● **9649.7**	● 11218.6	▲ 2354.9

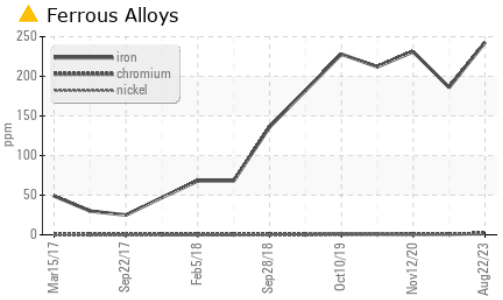
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>80000	▲ **407444**	● 415117	---
Particles >6µm		ASTM D7647	>80000	▲ **150759**	▲ 259292	---
Particles >14µm		ASTM D7647	>20000	**625**	27844	---
Particles >21µm		ASTM D7647	>5000	**46**	5895	---
Particles >38µm		ASTM D7647	>1300	**1**	246	---
Particles >71µm		ASTM D7647	>320	**1**	12	---
Oil Cleanliness		ISO 4406 (c)	>23/23/21	▲ **26/24/16**	● 26/25/22	---

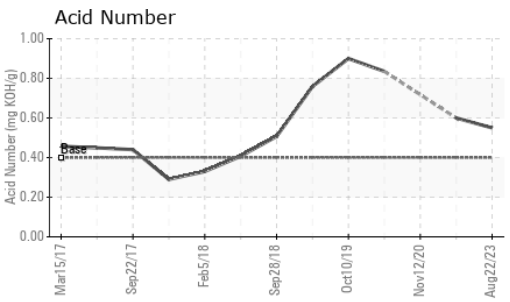
OIL ANALYSIS REPORT







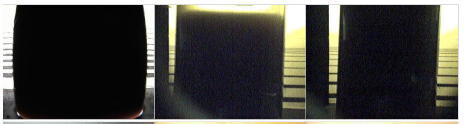
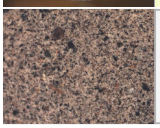




FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.4	**0.55**	0.60	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	VLITE	NONE
Silt	scalar	Visual*	NONE	**LIGHT**	NONE	NONE
Debris	scalar	Visual*	NONE	**NONE**	VLITE	NONE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Appearance	scalar	Visual*	NORML	▲ **WGOIL**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	▲ **.5%**	▲ 1%	▲ .2%
Free Water	scalar	Visual*		**NEG**	▲ .5%	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	452.3	**474**	445	426

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

ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **ALGOMA STEEL INC. - STORES DEPT.**
Sample No. : WC0752303 **Received** : 23 Aug 2023 301 WALLACE TERRACE
Lab Number : 02577809 **Diagnosed** : 25 Aug 2023 SAULT STE MARIE, ON
Unique Number : 5630869 **Diagnostician** : Kevin Marson CA P6C 1K8
Test Package : IND 2 (Additional Tests: BottomAnalysis, FILTERPATCH, KF, PQ, PrtFilter, TAN Man) Contact: Algoma Reliability

To discuss this sample report, contact Customer Service at 1-800-268-2131. algomareliability@algoma.com
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (705)206-1059
Validity of results and interpretation are based on the sample and information as supplied. F: (705)945-3585