



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINANTS	ABNORMAL
OIL CONDITION	ABNORMAL

Machine Id
PP432.010.07 ANCHOR WINDLASS (S/N 17200-1)
 Component
Gear Unit
 Fluid
PETRO CANADA SUPER GEAR FLUID EP 460 (132 LTR)

RECOMMENDATION

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 follow the water drain-off procedure for this component. We recommend an early resample to monitor this condition.

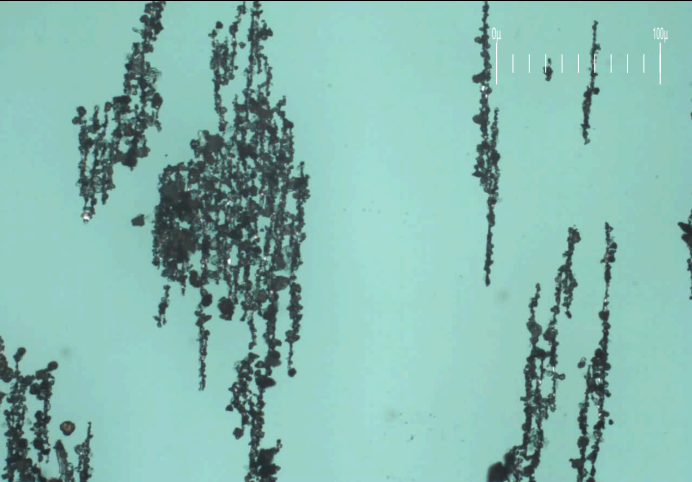
WEAR

All component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.

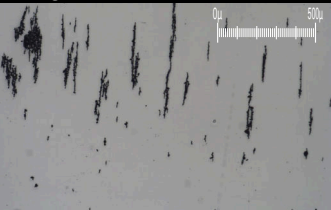
Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0895913	WC0785241	WC0608432
Sample Date		Client Info		25 Jun 2024	24 Jun 2023	22 Jul 2022
Machine Age	yrs	Client Info		0	0	0
Oil Age	yrs	Client Info		0	1	0
Filter Age	yrs	Client Info		0	1	0
Oil Changed		Client Info		N/A	N/A	Not Changd
Filter Changed		Client Info		N/A	N/A	None
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

PQ		ASTM D8184*		0	0	0
Iron	ppm	ASTM D5185(m)	>125	84	79	72
Chromium	ppm	ASTM D5185(m)	>5	0	0	0
Nickel	ppm	ASTM D5185(m)	>10	<1	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	<1
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>30	1	1	1
Lead	ppm	ASTM D5185(m)	>5	2	2	3
Copper	ppm	ASTM D5185(m)	>100	29	26	28
Tin	ppm	ASTM D5185(m)	>5	4	4	4
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Large Particles		DR-Ferr*		30.0	17.1	---
Small Particles		DR-Ferr*		11.5	7.2	---
Total Particles		DR-Ferr*	>---	41.5	24.3	---
Large Particles Percentage	%	DR-Ferr*		44.6	40.7	---
Severity Index		DR-Ferr*		555	169	---
Ferrous Rubbing	Scale 0-10	ASTM D7684*		3	3	
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		1	1	
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*		1	1	
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				

Magn: 200x Illum: BC



Magn: 50x Illum: RW



Magn: 100x Illum: RW



CONTAMINANTS

Free water present.

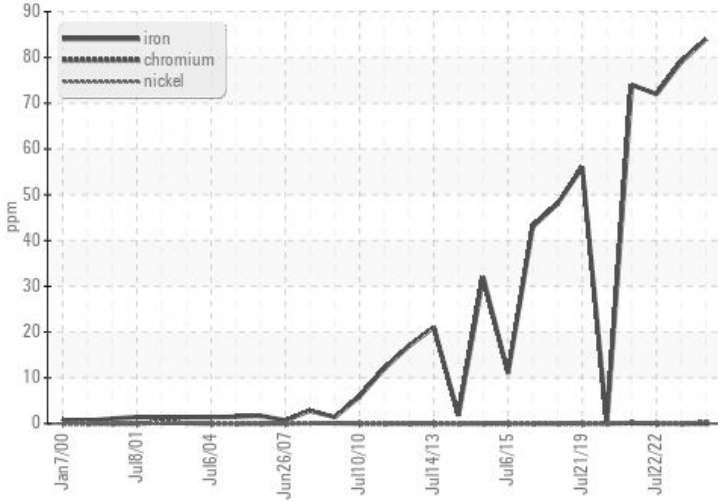
Silicon	ppm	ASTM D5185(m)	>50	2	2	2
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	1
Water		WC Method	>0.2	NEG	NEG	NEG
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	.2%	NEG	NEG
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		1	1	
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		1	1	

OIL CONDITION

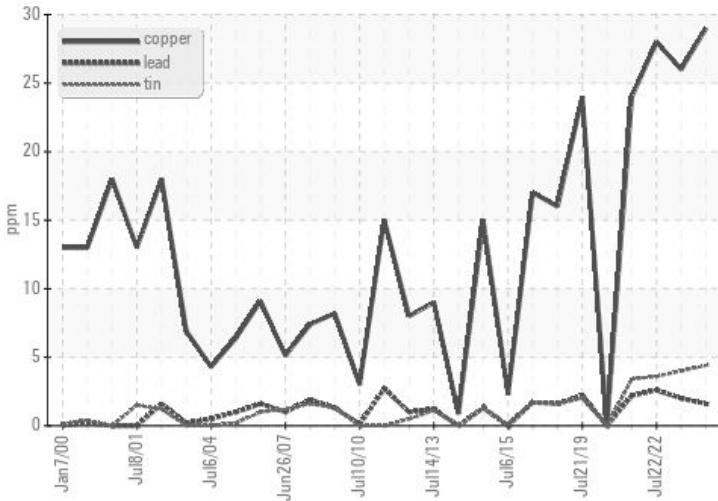
Viscosity of sample indicates oil is within ISO 220 range, advise investigate. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

Sodium	ppm	ASTM D5185(m)		5	4	5
Boron	ppm	ASTM D5185(m)		8	7	7
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)		0	0	0
Manganese	ppm	ASTM D5185(m)		1	1	1
Magnesium	ppm	ASTM D5185(m)		<1	1	<1
Calcium	ppm	ASTM D5185(m)		3	3	4
Phosphorus	ppm	ASTM D5185(m)	420	316	352	324
Zinc	ppm	ASTM D5185(m)		11	13	14
Sulfur	ppm	ASTM D5185(m)	3400	4883	4790	4988
Acid Number (AN)	mg KOH/g	ASTM D974*	0.46	0.66	0.67	0.66
Visc @ 40°C	cSt	ASTM D7279(m)	451.5	▲ 225	▲ 224	▲ 225
Lubricant Degradation	Scale 0-10	ASTM D7684*				

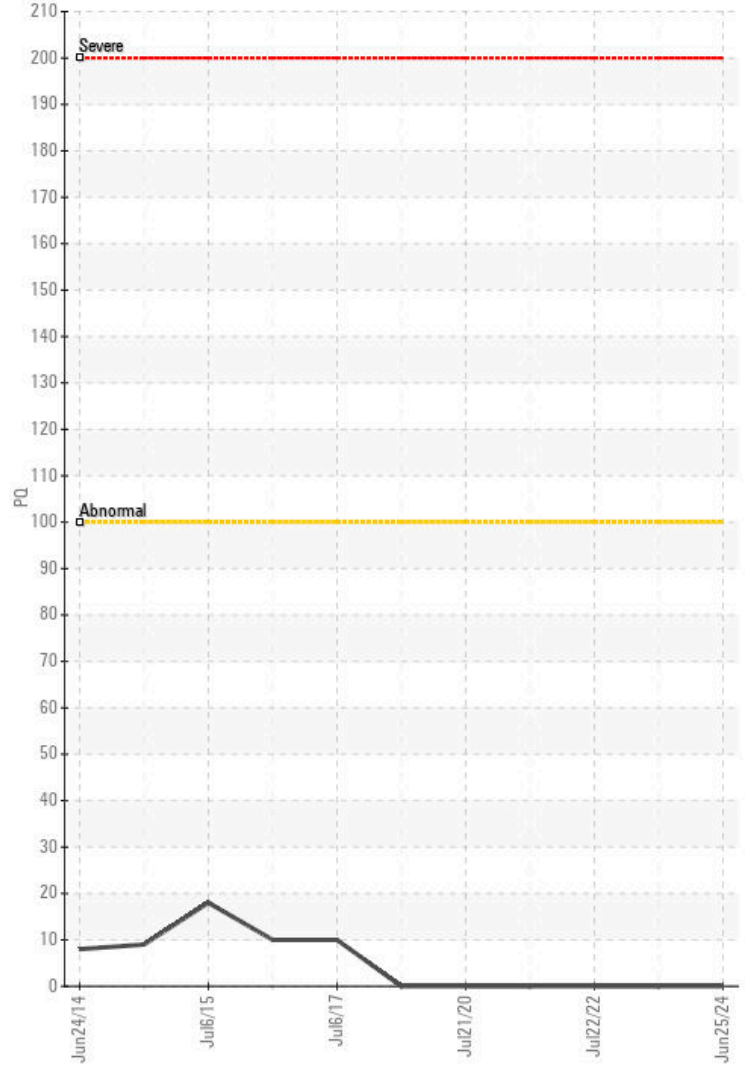
Ferrous Alloys



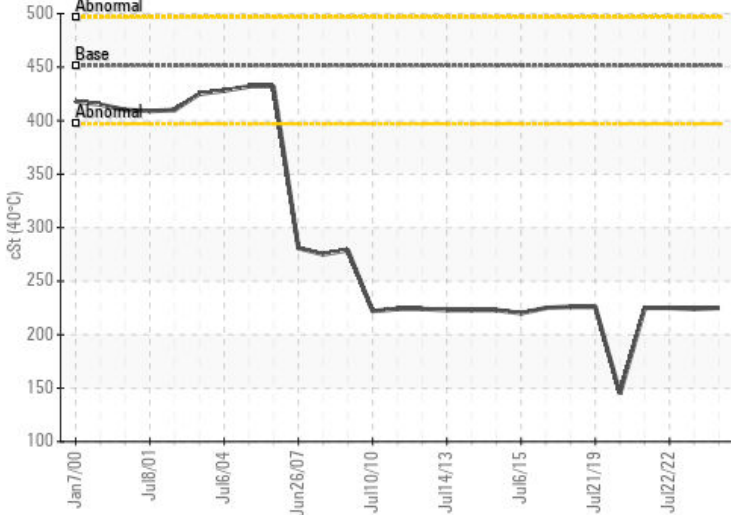
Non-ferrous Metals



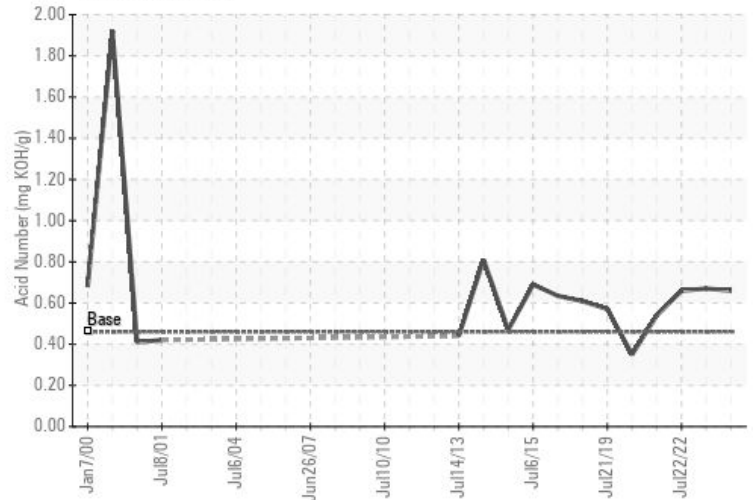
PQ



Viscosity @ 40°C



Acid Number



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0895913
Lab Number : 02645311
Unique Number : 5802850
Test Package : MAR 3 (Additional Tests: TAN Man)

CANSHIP UGLAND LTD - M/V PLACENTIA PRIDE
 C/O NEWTERM LOGISTICS, 21 GLENCOE
 MOUNT PEARL, NL
 CA A1N 4S6
 Contact: Don Gibbons
 don@canship.com
 T: (709)782-3333
 F: (709)782-0225

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.

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