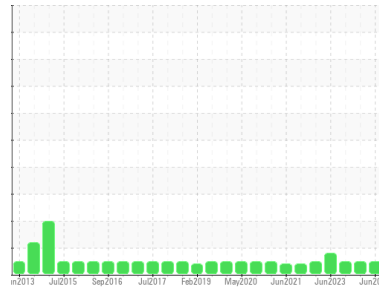




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area

S2 RULer Conductivity

Machine Id

SOLAR S2 SOLAR TURBINE

Component

Turbine

Fluid

ROYAL PURPLE SYNFILM GT 32 (460 GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor. Conductivity is acceptable at 1283 pS. Please submit a sample of the new (unused) oil to update the baseline. (Customer Sample Comment: Annual PM filter changed oil sample taken oil was changed 8/13/2023 unknown hr.)

Wear

All component wear rates are normal.

Contamination

MPC (Membrane Patch Colorimetry) test indicates acceptable levels of varnish present. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

Fluid Condition

The AN level is acceptable for this fluid. Linear Sweep Voltammetry (RULER – ASTM D6971) testing indicates normal levels of anti-oxidants present in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0916603	WC0885359	WC0877334
Sample Date	Client Info		06 Jun 2024	01 Feb 2024	23 Nov 2023
Machine Age	hrs	Client Info	30858	59853	30725
Oil Age	hrs	Client Info	30858	59853	1655
Oil Changed		Client Info	N/A	N/A	N/A
Sample Status			NORMAL	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >15	0	0	<1
Chromium	ppm	ASTM D5185m >4	0	0	<1
Nickel	ppm	ASTM D5185m >2	0	0	<1
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >10	0	0	<1
Lead	ppm	ASTM D5185m	0	0	<1
Copper	ppm	ASTM D5185m >5	<1	<1	1
Tin	ppm	ASTM D5185m >5	0	<1	<1
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	0	0	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	0
Barium	ppm	ASTM D5185m	0	0	<1
Molybdenum	ppm	ASTM D5185m	0	0	<1
Manganese	ppm	ASTM D5185m	0	0	<1
Magnesium	ppm	ASTM D5185m	70	46	79
Calcium	ppm	ASTM D5185m	<1	0	1
Phosphorus	ppm	ASTM D5185m	3	0	3
Zinc	ppm	ASTM D5185m	0	0	0
Sulfur	ppm	ASTM D5185m	19309	17446	20091

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >15	<1	0	<1
Sodium	ppm	ASTM D5185m	4	4	0
Potassium	ppm	ASTM D5185m >20	0	0	1
Water	%	ASTM D6304 >0.03	0.007	0.001	0.003
ppm Water	ppm	ASTM D6304 >300	78	12	28

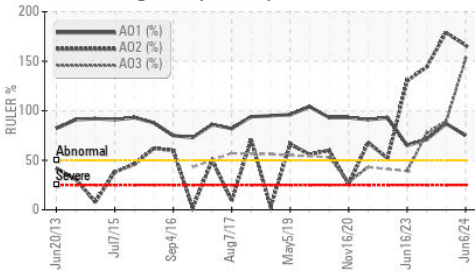
FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>10000	2169	138	1014
Particles >6µm	ASTM D7647	>1300	762	42	236
Particles >14µm	ASTM D7647	>160	52	6	15
Particles >21µm	ASTM D7647	>40	12	2	5
Particles >38µm	ASTM D7647	>10	0	0	0
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>20/17/14	18/17/13	14/13/10	17/15/11

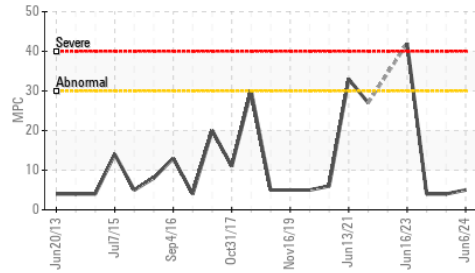


OIL ANALYSIS REPORT

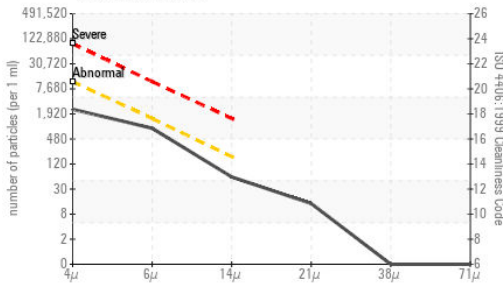
Remaining Life (RULER)



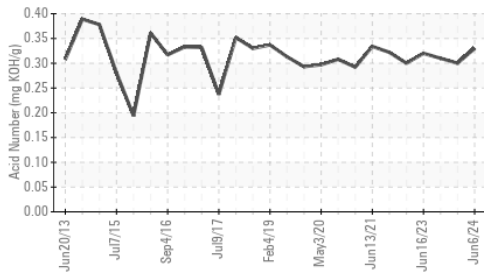
Varnish Potential



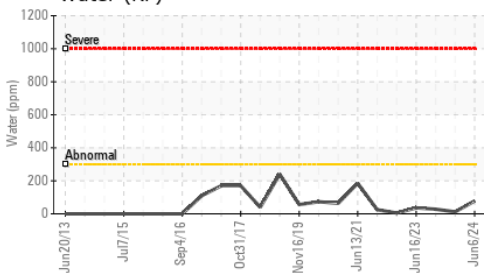
Particle Count



Acid Number



Water (KF)

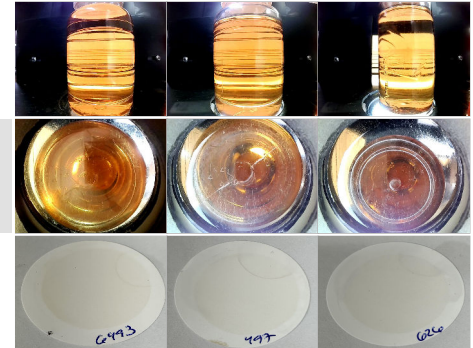


FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.33	0.30	0.31
Anti-Oxidant 1	%	ASTM D6971	75	87	71
Anti-Oxidant 2	%	ASTM D6971	166	179	144
Anti-Oxidant 3	%	ASTM D6971	152	89	77
MPC Varnish Potential	Scale	ASTM D7843	5	4	4

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.03	NEG	NEG
Free Water	scalar	*Visual	NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	32.4	30.2	35.7
Resistivity	Gohm/cm	ASTM D1169	1283	885	970

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					
MPC					



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WC0916603
 Lab Number : **06206493**
 Unique Number : 11073954
 Test Package : AOM 1 (Additional Tests: Conductivity, KF, Resistivity)

Conoco Phillips ALASKA INC
 C/O LAF (ALPINE), 6441 S AIRPARK PL
 ANCHORAGE, AK
 US 99502
 Contact: Chris Van Ryzin Ben DeRaeve
 alp1084@conocophillips.com

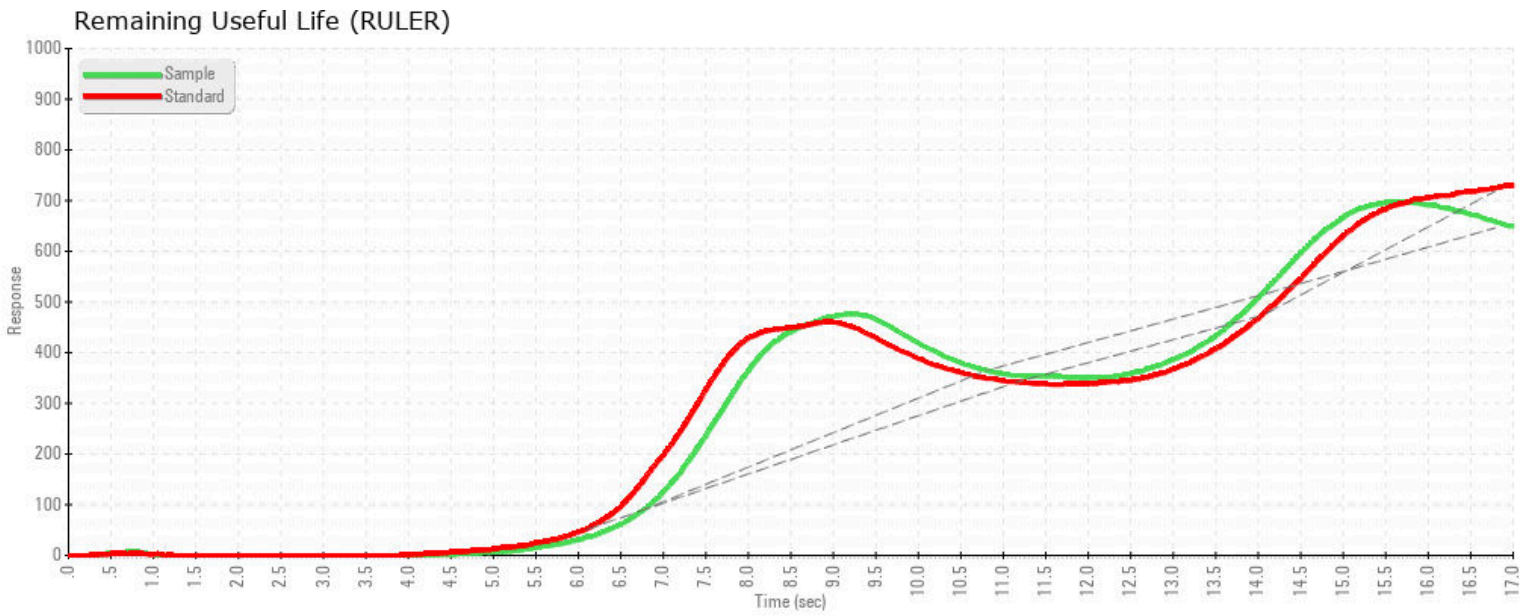
To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

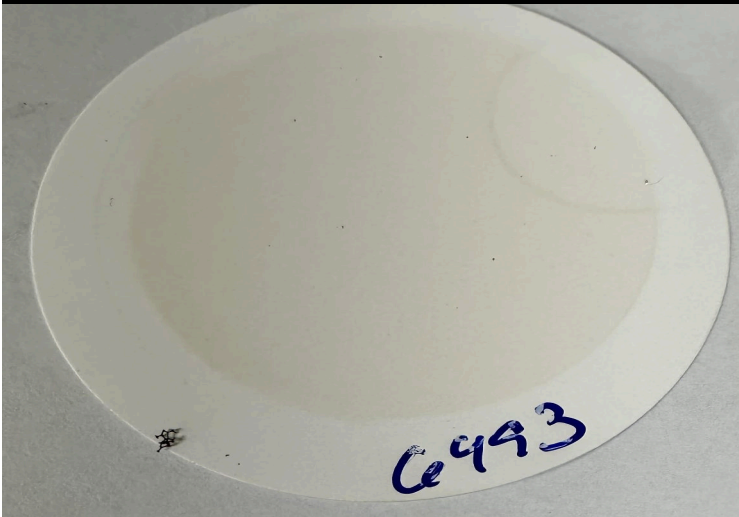
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

T: (907)670-4128

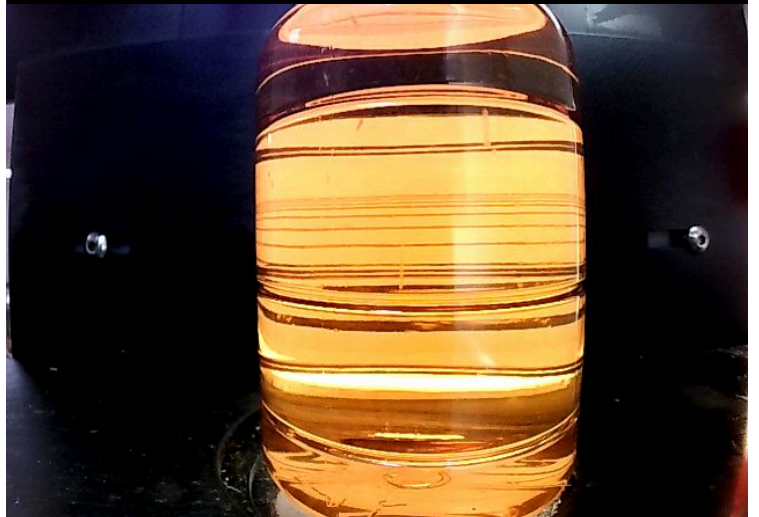
F: (907)670-4137



MPC (Varnish Test)



Sample Color & Clarity



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