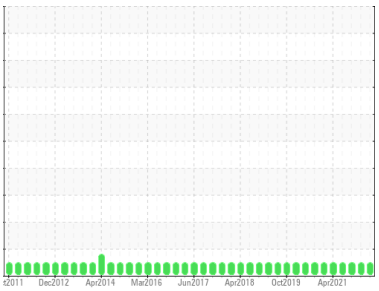
Hilcorp Alaska, LLC

OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
GTRB-1510A Main Gas Compressor
Component
Tank Sealing System
Fluid
PHILLIPS 66 Diamond Class® Turbine Oil AW 32 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

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

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		**HLC0001656**	HLC0001416	HLC0001335
Sample Date		Client Info		**30 Dec 2021**	08 Dec 2021	29 Aug 2021
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				**NORMAL**	NORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m		**0**	0	0
Chromium	ppm	ASTM D5185m		**0**	0	0
Nickel	ppm	ASTM D5185m		**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**<1**	0	<1
Aluminum	ppm	ASTM D5185m		**0**	0	0
Lead	ppm	ASTM D5185m		**0**	<1	0
Copper	ppm	ASTM D5185m		**0**	0	0
Tin	ppm	ASTM D5185m		**0**	0	0
Antimony	ppm	ASTM D5185m		**0**	0	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	<1	0
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**<1**	0	0
Manganese	ppm	ASTM D5185m		**0**	0	0
Magnesium	ppm	ASTM D5185m		**0**	0	0
Calcium	ppm	ASTM D5185m		**0**	0	0
Phosphorus	ppm	ASTM D5185m		**27**	34	28
Zinc	ppm	ASTM D5185m		**0**	0	0
Sulfur	ppm	ASTM D5185m		**731**	695	849

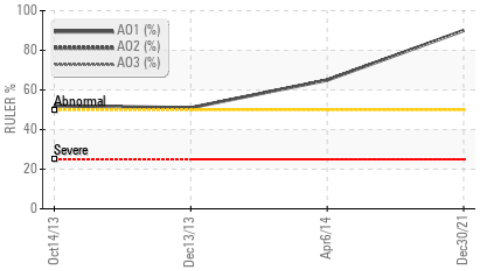
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m		**<1**	<1	0
Sodium	ppm	ASTM D5185m		**0**	0	0
Potassium	ppm	ASTM D5185m	>20	**0**	0	0
Water	%	ASTM D6304		**0.001**	---	---
ppm Water	ppm	ASTM D6304		**7.9**	---	---

FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	**240**	1291	2041
Particles >6µm	ASTM D7647	>320	**68**	235	573
Particles >14µm	ASTM D7647	>40	**6**	13	72
Particles >21µm	ASTM D7647	>10	**1**	3	22
Particles >38µm	ASTM D7647	>3	**0**	0	3
Particles >71µm	ASTM D7647	>3	**0**	0	0
Oil Cleanliness	ISO 4406 (c)	>18/15/12	**15/13/10**	17/15/11	18/16/13

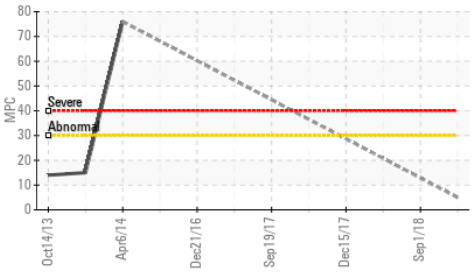
OIL ANALYSIS REPORT

Hilcorp Alaska, LLC

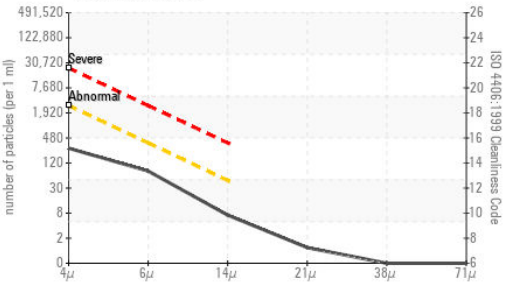
Remaining Life (RULER)



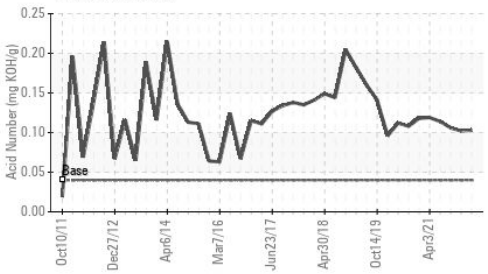
Varnish Potential



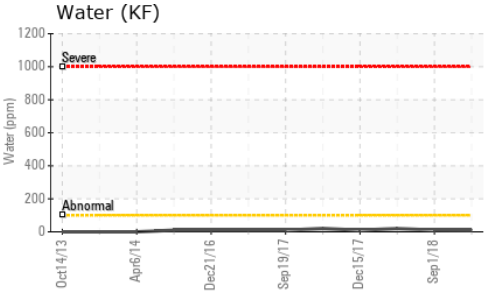
Particle Count



Acid Number



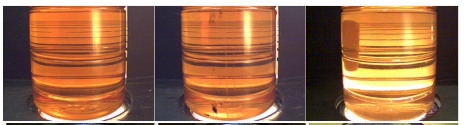
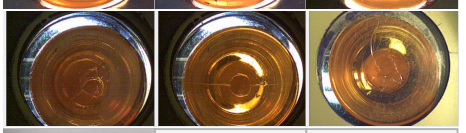
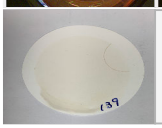
Water (KF)



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.04	**0.103**	0.102	0.106
Anti-Oxidant 1	%	ASTM D6971	<25	**90**	---	---
Anti-Oxidant 2	%	ASTM D6971	<25	**51**	---	---
MPC Varnish Potential	Scale	ASTM D7843	>15	**5**	---	---

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**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	VLITE
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		**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	32.7	**31.4**	31.9	31.5

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

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HLC0001656
Lab Number : 05440139
Unique Number : 9804332
Test Package : AOM 1 (Additional Tests: KF)

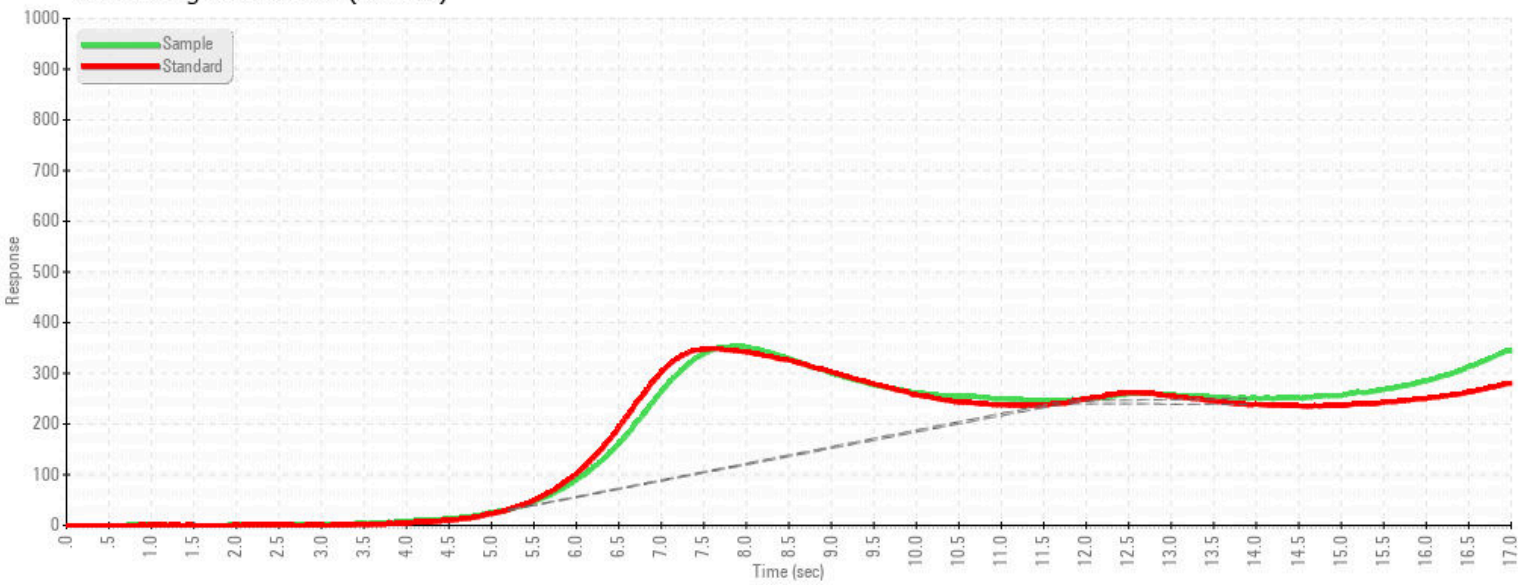
Received : 10 Jan 2022
Tested : 21 Jan 2022
Diagnosed : 21 Jan 2022 - Doug Bogart

Certificate L2367

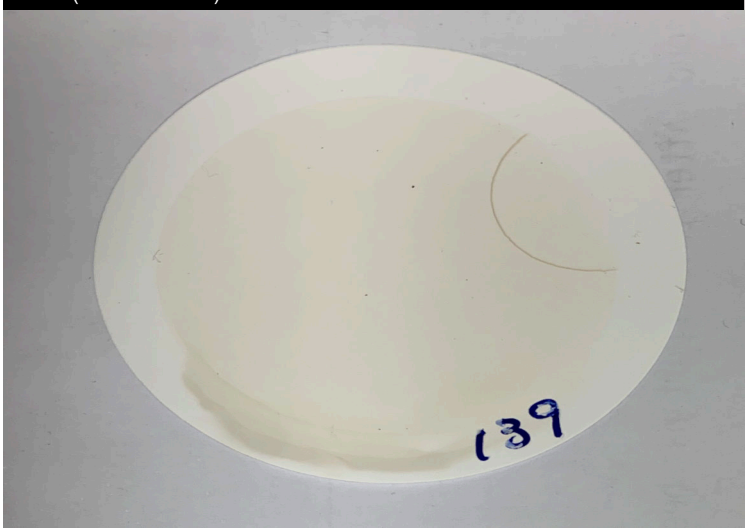
To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

HILCORP ALASKA LLC - ENDICOTT
604 WAREHOUSE ENDICOTT
PRUDHOE BAY, AK
US 99734
Contact: SEAN LOWTHER
slowther@hilcorp.com
T: (907)659-6800
F:

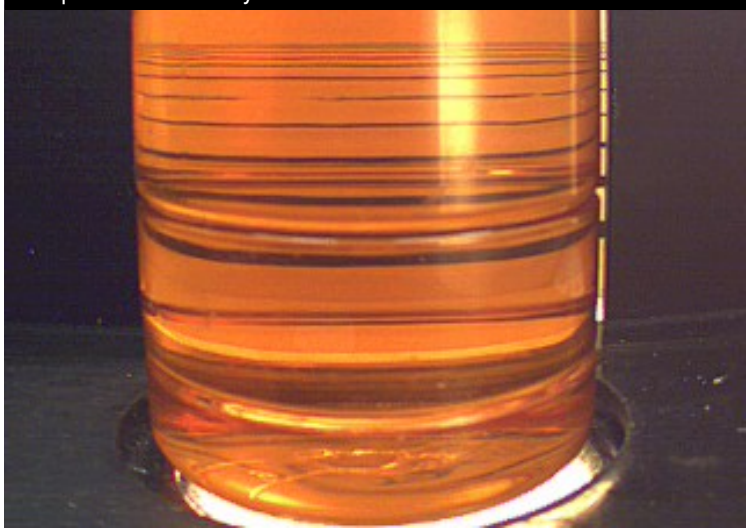
Remaining Useful Life (RULER)



MPC (Varnish Test)



Sample Color & Clarity



This page left intentionally blank