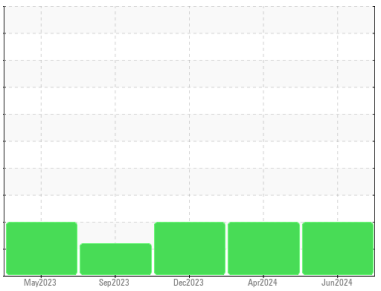
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
BLUE ORIGIN G1 HPU
Component
Hydraulic System
Fluid
RADCOLUBE FR282 (200 GAL)

DIAGNOSIS

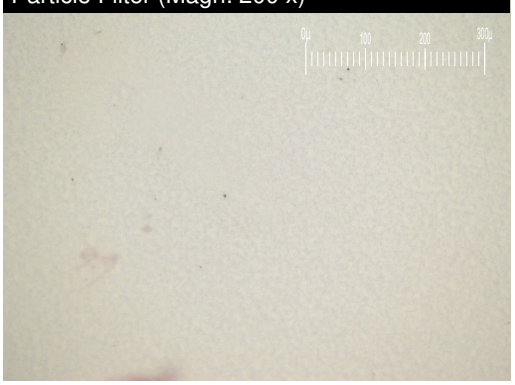
Recommendation
We recommend you service the filters on this component. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is a high amount of particulates present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. Chlorine 0.0 ppm.

Fluid Condition
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Particle Filter (Magn: 200 x)



SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PH0003818**	PH0003814	PH0003816
Sample Date		Client Info		**05 Jun 2024**	03 Apr 2024	11 Dec 2023
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	Filtered
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	**0**	0	0
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>20	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	<1	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**2**	2	1
Lead	ppm	ASTM D5185m	>20	**0**	0	0
Copper	ppm	ASTM D5185m	>20	**<1**	<1	0
Tin	ppm	ASTM D5185m	>20	**<1**	<1	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**	0	0
Barium	ppm	ASTM D5185m		**0**	0	8
Molybdenum	ppm	ASTM D5185m		**0**	0	0
Manganese	ppm	ASTM D5185m		**0**	0	0
Magnesium	ppm	ASTM D5185m		**0**	<1	<1
Calcium	ppm	ASTM D5185m		**0**	5	<1
Phosphorus	ppm	ASTM D5185m		**18**	20	32
Zinc	ppm	ASTM D5185m		**6**	6	7
Sulfur	ppm	ASTM D5185m		**132**	9	54

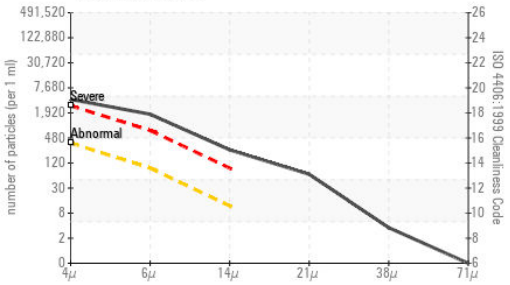
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**0**	0	0
Sodium	ppm	ASTM D5185m		**0**	0	0
Potassium	ppm	ASTM D5185m	>20	**<1**	<1	<1
Chlorine Content	ppm	ASTM D5185m		**0.000**	0.0	5.20
Water	%	ASTM D6304	>0.05	**0.008**	0.009	0.008
ppm Water	ppm	ASTM D6304	>500	**84**	90	82

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>320	▲ **3544**	▲ 8417	▲ 1721
Particles >6µm		ASTM D7647	>80	▲ **1563**	▲ 4005	▲ 757
Particles >14µm		ASTM D7647	>10	▲ **219**	▲ 734	▲ 114
Particles >21µm		ASTM D7647	>3	▲ **57**	▲ 208	▲ 26
Particles >38µm		ASTM D7647	>3	**3**	3	0
Particles >71µm		ASTM D7647	>3	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>15/13/10	▲ **19/18/15**	▲ 20/19/17	▲ 18/17/14

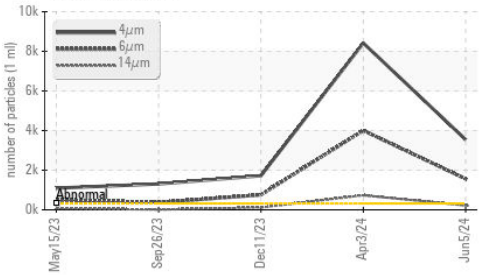
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.09	**0.18**	0.18	0.23

OIL ANALYSIS REPORT

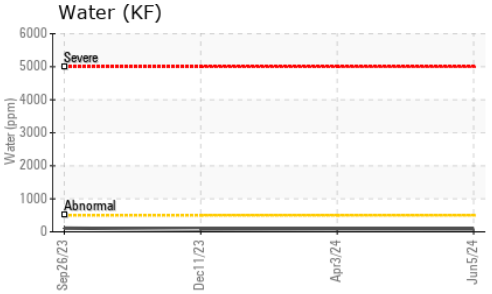
Particle Count



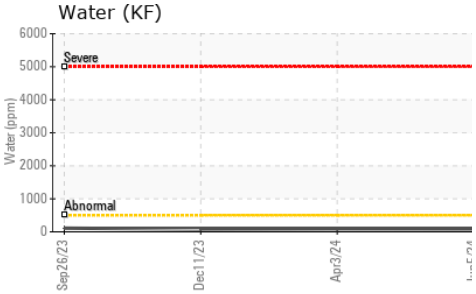
Particle Trend



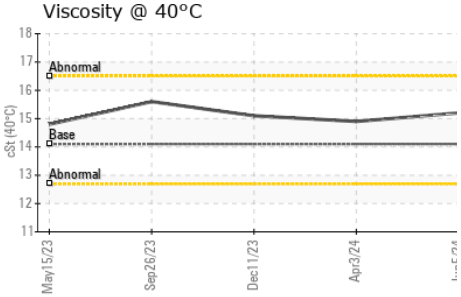
Water (KF)



Water (KF)



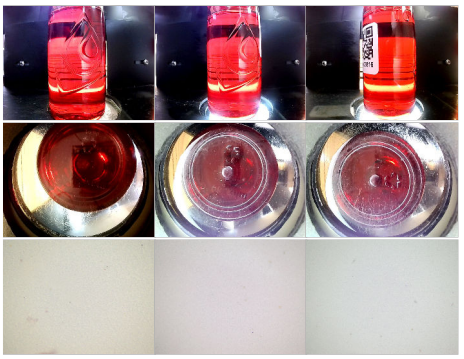
Viscosity @ 40°C



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	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	>0.05	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

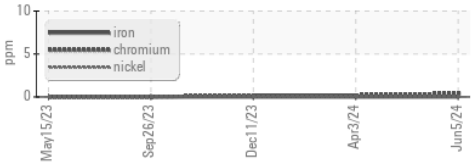
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	14.1	**15.2**	14.9	15.1

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

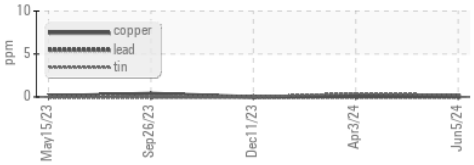


GRAPHS

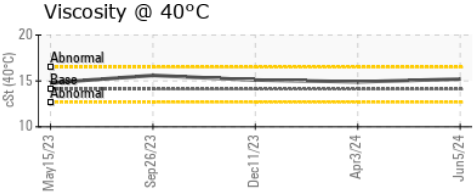
Ferrous Alloys



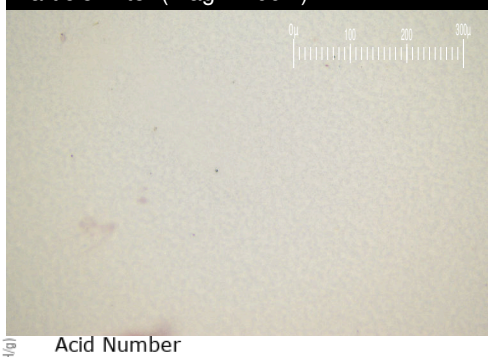
Non-ferrous Metals



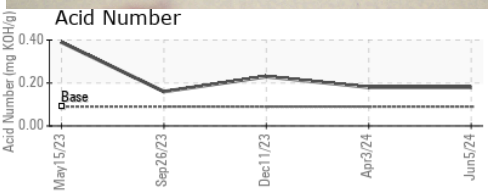
Viscosity @ 40°C



Particle Filter (Magn: 200 x)



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PH0003818
Lab Number : 06202696
Unique Number : 11070157
Test Package : PLANT (Additional Tests: CHLORINEXRF, KF, PrtFilter)
Received : 07 Jun 2024
Tested : 13 Jun 2024
Diagnosed : 13 Jun 2024 - Doug Bogart

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)

BLUE ORIGIN
35961 HWY 54
VAN HORN, TX
US 79855
Contact: MANUEL HERRERA
mherrera@blueorigin.com
T:
F: