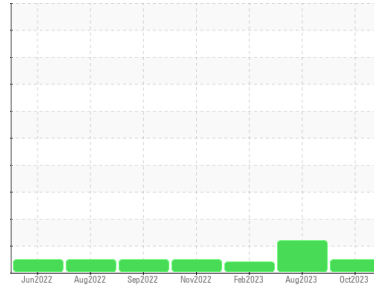




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
GRBX-NCO-0001 ASRI RIG GRBX-NCO-0001
 Component
Gearbox
 Fluid
GEAR OIL SAE 75W90 (5 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			HLC0002551	HLC0001923	HLC0001813
Sample Date	Client Info			20 Oct 2023	16 Aug 2023	06 Feb 2023
Machine Age	hrs	Client Info		24030	22620	18598
Oil Age	hrs	Client Info		1400	350	1000
Oil Changed	Client Info			Changed	Not Changd	Changed
Sample Status				NORMAL	ABNORMAL	ATTENTION

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	25	17	35
Chromium	ppm	ASTM D5185m	>15	0	<1	<1
Nickel	ppm	ASTM D5185m	>15	0	<1	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	3	0
Aluminum	ppm	ASTM D5185m	>25	0	0	2
Lead	ppm	ASTM D5185m	>100	0	<1	0
Copper	ppm	ASTM D5185m	>200	4	3	<1
Tin	ppm	ASTM D5185m	>25	0	1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0

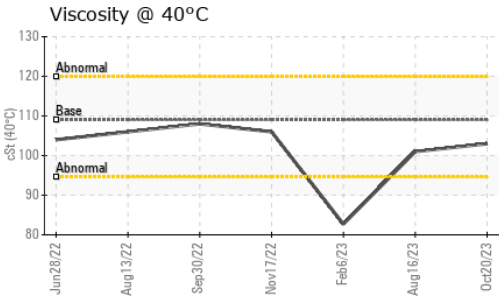
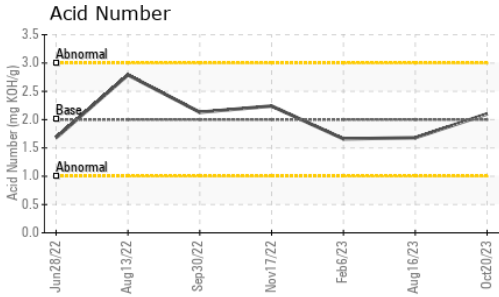
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	400	235	306	200
Barium	ppm	ASTM D5185m	200	0	0	0
Molybdenum	ppm	ASTM D5185m	12	0	0	<1
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m	12	<1	0	0
Calcium	ppm	ASTM D5185m	150	3	2	22
Phosphorus	ppm	ASTM D5185m	1650	1441	1453	1141
Zinc	ppm	ASTM D5185m	125	5	5	11
Sulfur	ppm	ASTM D5185m	22500	22717	27291	22167

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	5	6	12
Sodium	ppm	ASTM D5185m		3	2	2
Potassium	ppm	ASTM D5185m	>20	<1	0	<1

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	---	▲ 40682	---
Particles >6µm		ASTM D7647	>5000	---	▲ 5744	---
Particles >14µm		ASTM D7647	>640	---	121	---
Particles >21µm		ASTM D7647	>160	---	19	---
Particles >38µm		ASTM D7647	>40	---	1	---
Particles >71µm		ASTM D7647	>10	---	0	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	---	▲ 23/20/14	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	2.00	2.10	1.68	1.66

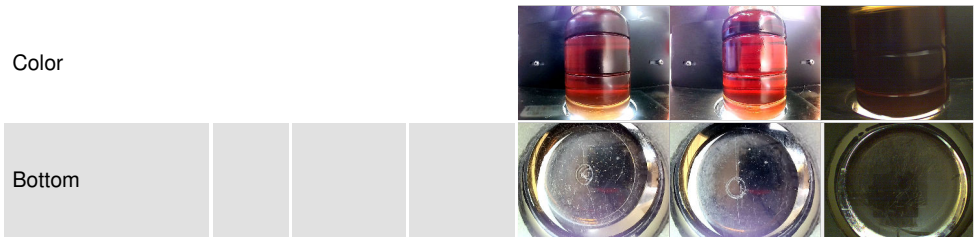
OIL ANALYSIS REPORT



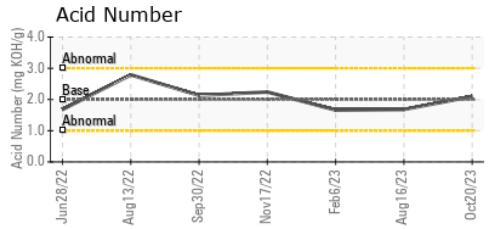
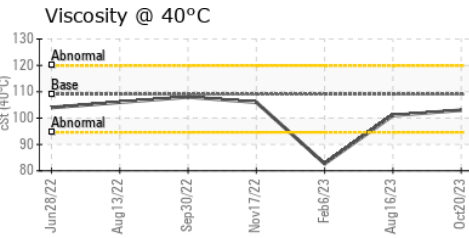
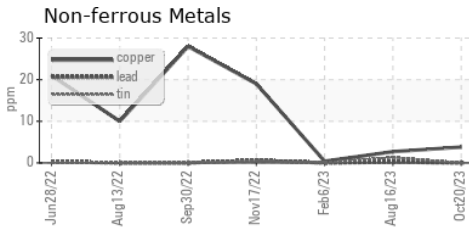
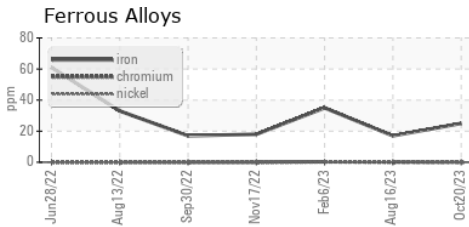
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 109	103	101	▲ 82.7

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HLC0002551 **Received** : 30 Oct 2023
Lab Number : 05993743 **Diagnosed** : 03 Nov 2023
Unique Number : 10722103 **Diagnostician** : Jonathan Hester
Test Package : IND 2 (Additional Tests: PrtCount)

HILCORP EXPLORATION ALASKA - MILNE POINT
 1000 MILNE POINT RD
 PRUDOE BAY, AK
 US 99734
 Contact: Evan Reilly
 evan.reilly@hilcorp.com
 T: (907)670-3231
 F: x:

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)