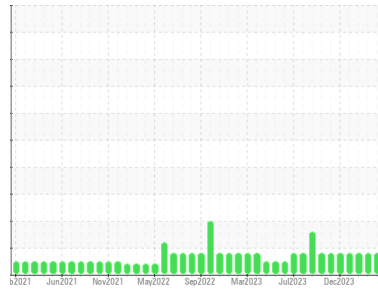




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area

IRIG [7008220]

Machine Id

IRIG-PIP-HPU-2001 IRIG-PIP-HPU-2001 HPU PIPE SHED MODULE

Component

Hydraulic System

Fluid

MOBIL DTE 10 EXCEL 32 (140 GAL)

DIAGNOSIS

Recommendation

The filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code.

Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		HLC0003059	HLC0003055	HLC0003035
Sample Date	Client Info		27 Apr 2024	09 Mar 2024	06 Feb 2024
Machine Age	hrs	Client Info	4523	4434	4349
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		Filtered	N/A	N/A
Sample Status			ABNORMAL	ABNORMAL	ATTENTION

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.05	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>20	1	1	5
Chromium	ppm	ASTM D5185m	>20	0	<1	0
Nickel	ppm	ASTM D5185m	>20	<1	<1	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	<1	1
Lead	ppm	ASTM D5185m	>20	0	0	0
Copper	ppm	ASTM D5185m	>20	<1	3	3
Tin	ppm	ASTM D5185m	>20	0	0	<1
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	1
Molybdenum	ppm	ASTM D5185m		0	0	0
Manganese	ppm	ASTM D5185m		0	<1	0
Magnesium	ppm	ASTM D5185m		<1	<1	0
Calcium	ppm	ASTM D5185m	120	91	92	79
Phosphorus	ppm	ASTM D5185m	475	428	456	414
Zinc	ppm	ASTM D5185m		30	33	21
Sulfur	ppm	ASTM D5185m	1275	1468	1650	1186

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>15	<1	<1	4
Sodium	ppm	ASTM D5185m		4	4	6
Potassium	ppm	ASTM D5185m	>20	3	2	2

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	▲ 14918	▲ 16941	● 4868
Particles >6µm	ASTM D7647	>640	506	600	204
Particles >14µm	ASTM D7647	>80	11	11	11
Particles >21µm	ASTM D7647	>20	5	4	3
Particles >38µm	ASTM D7647	>4	0	0	0
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ 21/16/11	▲ 21/16/11	● 19/15/11

FLUID DEGRADATION

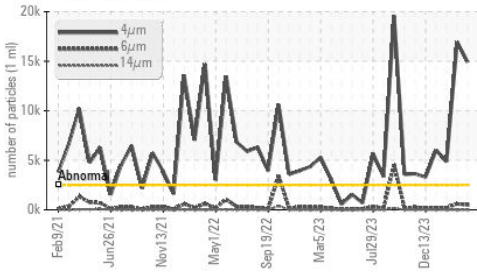
	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.11	0.174	0.08



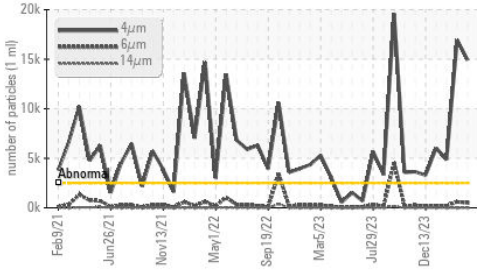
Hilcorp Alaska, LLC

OIL ANALYSIS REPORT

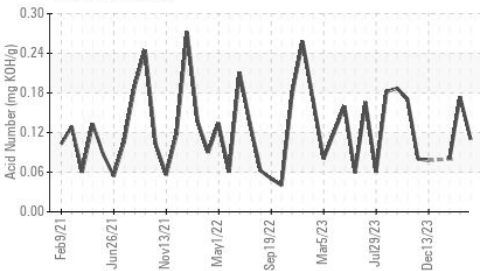
▲ Particle Trend



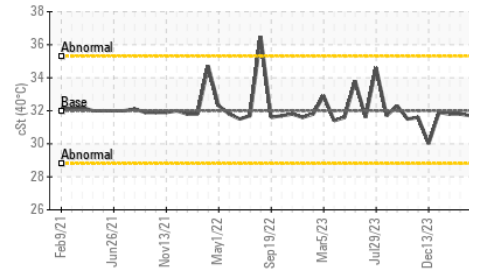
▲ Particle Trend



Acid Number



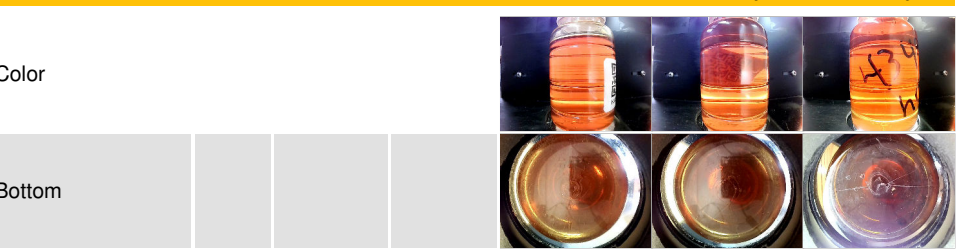
Viscosity @ 40°C



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	>0.05	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

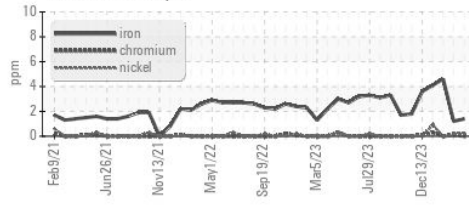
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	32	31.7	31.8

SAMPLE IMAGES

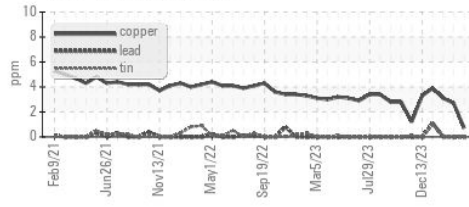


GRAPHS

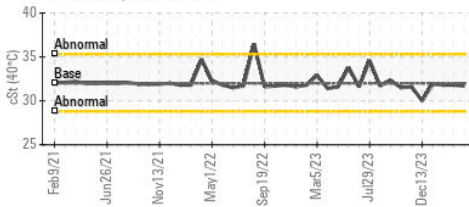
Ferrous Alloys



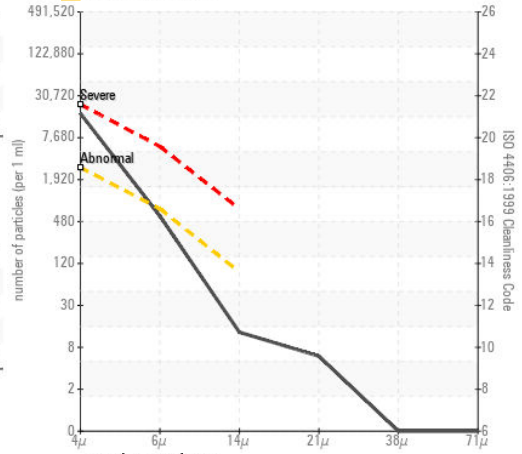
Non-ferrous Metals



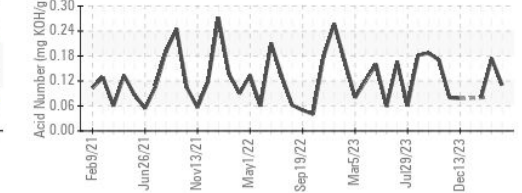
Viscosity @ 40°C



▲ Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HLC0003059
Lab Number : 06176081
Unique Number : 11022134
Test Package : IND 2

HILCORP EXPLORATION ALASKA - MILNE POINT
 1000 MILNE POINT RD
 PRUDOE BAY, AK
 US 99734

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)

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 T: (907)670-3231

F: x: