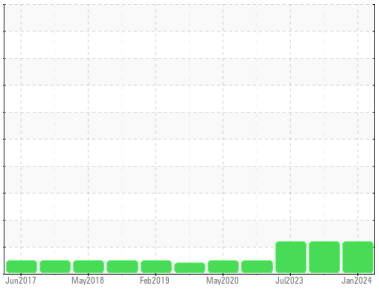
Hilcorp Alaska, LLC

OIL ANALYSIS REPORT

Area
IRIG [5963379]
Machine Id
IRIG-GENR-GN-1105 IRIG-GENR-GN-1105 COLD START GEN-UTILITY MOD
Component
Diesel Engine
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (10 GAL)

Sample Rating Trend



FUEL

DIAGNOSIS

Recommendation
The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Light fuel dilution occurring.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**HLC0003048**	HLC0002793	HLC0002730
Sample Date		Client Info		**01 Jan 2024**	16 Sep 2023	26 Jul 2023
Machine Age	hrs	Client Info		**2623**	2549	2517
Oil Age	hrs	Client Info		**25**	32	500
Oil Changed		Client Info		**Changed**	Not Changd	N/A
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**0**	2	11
Chromium	ppm	ASTM D5185m	>20	**0**	0	0
Nickel	ppm	ASTM D5185m	>2	**0**	0	0
Titanium	ppm	ASTM D5185m	>2	**0**	<1	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>25	**1**	2	<1
Lead	ppm	ASTM D5185m	>40	**0**	0	2
Copper	ppm	ASTM D5185m	>330	**1**	5	206
Tin	ppm	ASTM D5185m	>15	**0**	<1	0
Antimony	ppm	ASTM D5185m		**---**	---	---
Vanadium	ppm	ASTM D5185m		**0**	0	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	151	**96**	119	78
Barium	ppm	ASTM D5185m	0.4	**0**	0	0
Molybdenum	ppm	ASTM D5185m	250	**0**	<1	2
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	0	**715**	749	732
Calcium	ppm	ASTM D5185m	2046	**1247**	1303	1388
Phosphorus	ppm	ASTM D5185m	1043	**685**	693	677
Zinc	ppm	ASTM D5185m	943	**781**	800	823
Sulfur	ppm	ASTM D5185m	5012	**2860**	3071	3274

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**2**	3	4
Sodium	ppm	ASTM D5185m		**0**	2	4
Potassium	ppm	ASTM D5185m	>20	**<1**	1	3
Fuel	%	ASTM D3524	>5	▲ **3.3**	▲ 3.5	▲ 4.8

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.1**	0.1	0.3
Nitration	Abs/cm	*ASTM D7624	>20	**6.6**	6.1	8.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**17.3**	16.6	19.7

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**11.8**	10.9	15.5
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	**10.08**	10.14	8.87

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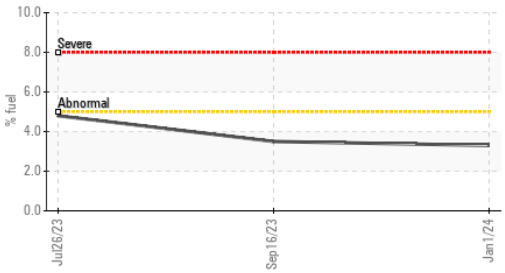
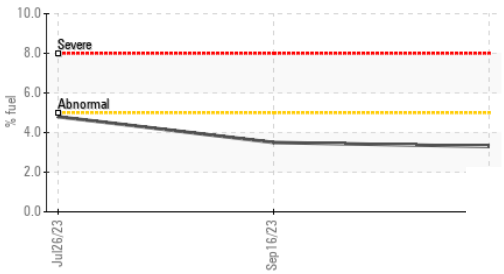
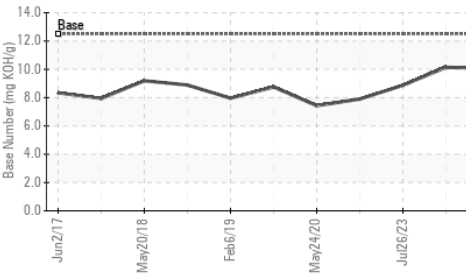
Fuel Dilution



Fuel Dilution



Base Number

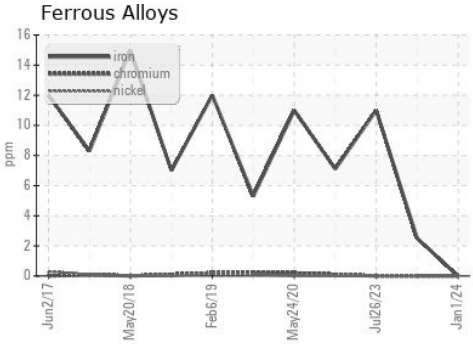


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

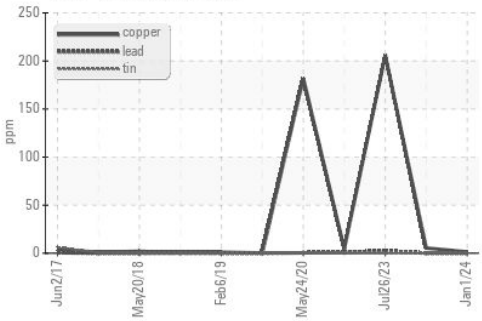
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	▲ **11.7**	▲ 11.4	▲ 11.3

GRAPHS

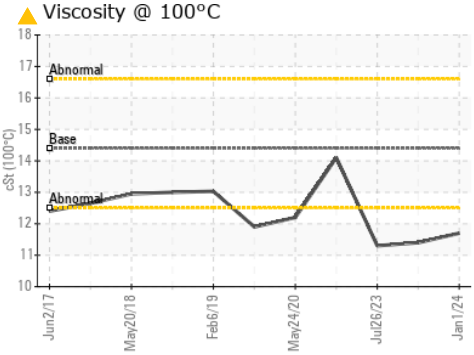
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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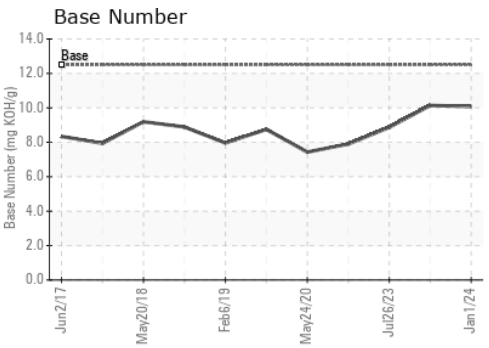

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HLC0003048 **Recieved** : 16 Jan 2024
Lab Number : 06061384 **Diagnosed** : 18 Jan 2024
Unique Number : 10832766 **Diagnostician** : Wes Davis
Test Package : IND 2 (Additional Tests: FuelDilution, PercentFuel)

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 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: