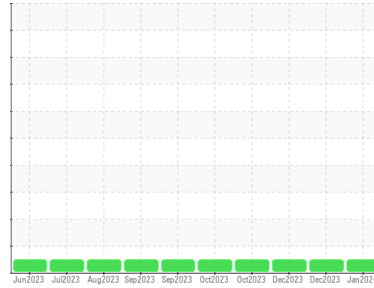




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Machine Id  
**ASRI-RIG-DSL-ENG0002 ASRI-RIG-DSL-ENG0002**

Component  
**Diesel Engine**

Fluid  
**DIESEL ENGINE OIL SAE 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining 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			<b>HLC0002265</b>	HLC0003152	HLC0002279
Sample Date	Client Info			<b>15 Jan 2024</b>	26 Dec 2023	05 Dec 2023
Machine Age	hrs	Client Info		<b>18650</b>	18243	17750
Oil Age	hrs	Client Info		<b>410</b>	490	351
Oil Changed	Client Info			<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<b>&lt;1.0</b>	<1.0	<1.0
Water	WC Method	>0.2		<b>NEG</b>	NEG	NEG
Glycol	WC Method			<b>NEG</b>	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	<b>15</b>	17	7
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>4	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	2	2
Lead	ppm	ASTM D5185m	>40	<b>6</b>	<1	<1
Copper	ppm	ASTM D5185m	>330	<b>3</b>	2	<1
Tin	ppm	ASTM D5185m	>15	<b>2</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	<b>60</b>	65	65
Barium	ppm	ASTM D5185m	10	<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185m	100	<b>2</b>	13	1
Manganese	ppm	ASTM D5185m		<b>2</b>	0	<1
Magnesium	ppm	ASTM D5185m	450	<b>798</b>	716	791
Calcium	ppm	ASTM D5185m	3000	<b>1353</b>	1406	1384
Phosphorus	ppm	ASTM D5185m	1150	<b>763</b>	832	685
Zinc	ppm	ASTM D5185m	1350	<b>885</b>	936	863
Sulfur	ppm	ASTM D5185m	4250	<b>3041</b>	3275	3090

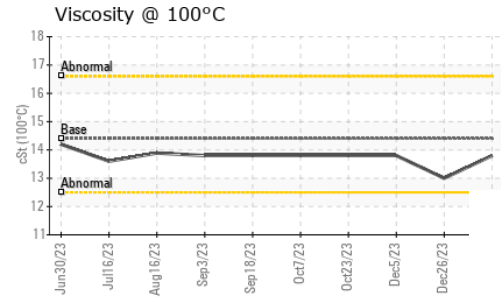
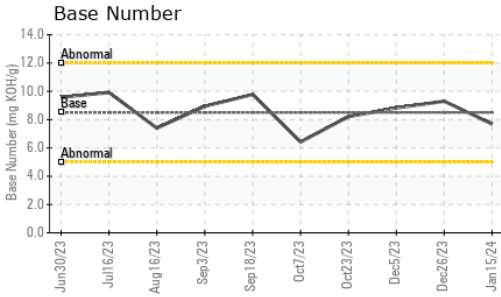
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	<b>6</b>	13	5
Sodium	ppm	ASTM D5185m	>158	<b>6</b>	0	4
Potassium	ppm	ASTM D5185m	>20	<b>7</b>	3	2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	<b>0.4</b>	0.5	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.0</b>	8.7	8.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.4</b>	21.2	20.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.2</b>	17.1	14.9
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>7.69</b>	9.30	8.82



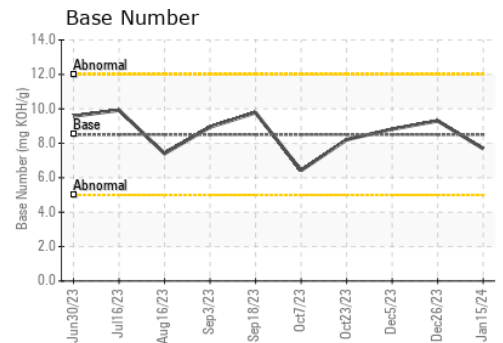
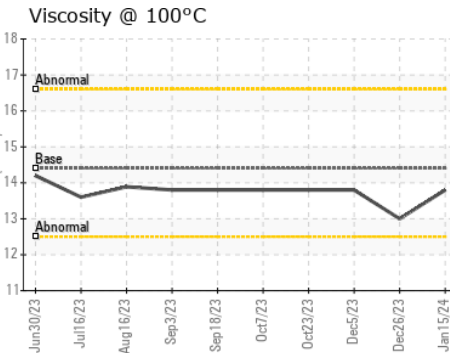
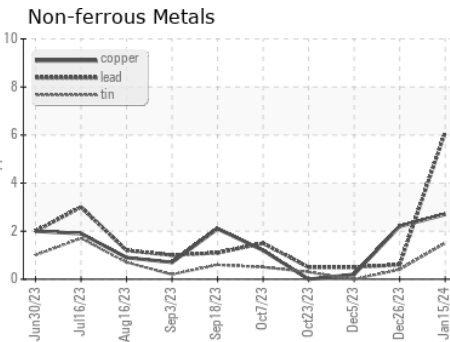
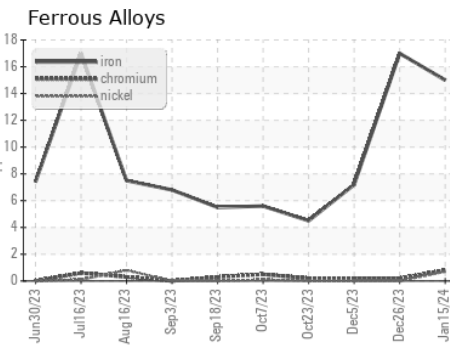
# OIL ANALYSIS REPORT



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	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.8</b>	13.0	13.8

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : HLC0002265 **Received** : 01 Feb 2024  
**Lab Number** : **06077798** **Diagnosed** : 02 Feb 2024  
**Unique Number** : 10859889 **Diagnostician** : Wes Davis  
**Test Package** : IND 2

**HILCORP EXPLORATION ALASKA - MILN POINT**  
 1000 MILN 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)