

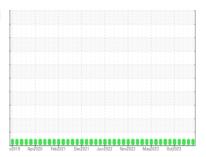
## **OIL ANALYSIS REPORT**

# UTILITIES Machine Id

# **GN-8001B (S/N EMERGENCY GENERATOR)**

**Diesel Engine** 

CHEVRON DELO 400 LE 15W40 (--- GAL)



Sample Rating Trend



### DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

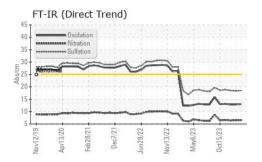
### **Fluid Condition**

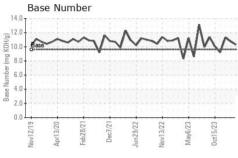
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

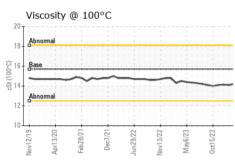
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		HLC0003216	HLC0003172	HLC0002845
Sample Date		Client Info		08 Mar 2024	07 Jan 2024	05 Dec 2023
Machine Age	hrs	Client Info		0	1337	586
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	V	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
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	3	0	2
Chromium	ppm	ASTM D5185m	>20	0	0	0
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	- 1	0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	2	<1
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m		0	1	0
Tin		ASTM D5185m		0	0	0
Vanadium	ppm	ASTM D5185m	>10	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
Caumum	ppm	ASTIVI DSTOSIII		U	U	U
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current	104	115
	ppm ppm		limit/base		104 0	115 0
Boron		ASTM D5185m	limit/base	115 0 11	104 0 12	115
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	115 0	104 0	115 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	115 0 11	104 0 12	115 0 13
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	115 0 11 0	104 0 12 <1	115 0 13 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1200	115 0 11 0 749	104 0 12 <1 665	115 0 13 <1 668
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		115 0 11 0 749 1668	104 0 12 <1 665 1415	115 0 13 <1 668 1483
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1200	115 0 11 0 749 1668 849	104 0 12 <1 665 1415 727	115 0 13 <1 668 1483 690
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1200 1300	115 0 11 0 749 1668 849 956	104 0 12 <1 665 1415 727 856	115 0 13 <1 668 1483 690 872
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1200 1300 3200	115 0 11 0 749 1668 849 956 4148	104 0 12 <1 665 1415 727 856 3018	115 0 13 <1 668 1483 690 872 3298
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1200 1300 3200 limit/base	115 0 11 0 749 1668 849 956 4148	104 0 12 <1 665 1415 727 856 3018 history1	115 0 13 <1 668 1483 690 872 3298 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1200 1300 3200 limit/base	115 0 11 0 749 1668 849 956 4148 current	104 0 12 <1 665 1415 727 856 3018 history1	115 0 13 <1 668 1483 690 872 3298 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1200 1300 3200 limit/base >25	115 0 11 0 749 1668 849 956 4148 current 2	104 0 12 <1 665 1415 727 856 3018 history1 2	115 0 13 <1 668 1483 690 872 3298 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1200 1300 3200 limit/base >25 >20	115 0 11 0 749 1668 849 956 4148 current 2 1	104 0 12 <1 665 1415 727 856 3018 history1 2 0	115 0 13 <1 668 1483 690 872 3298 history2 3 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1200 1300 3200 limit/base >25 >20 limit/base	115 0 11 0 749 1668 849 956 4148 current 2 1 3	104 0 12 <1 665 1415 727 856 3018 history1 2 0 1	115 0 13 <1 668 1483 690 872 3298 history2 3 <1 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1200 1300 3200 limit/base >25 >20 limit/base >3	115 0 11 0 749 1668 849 956 4148 current 2 1 3 current	104 0 12 <1 665 1415 727 856 3018 history1 2 0 1 history1 0.1	115 0 13 <1 668 1483 690 872 3298 history2 3 <1 1 history2 0.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1200 1300 3200 limit/base >25 >20 limit/base >3 >20	115 0 11 0 749 1668 849 956 4148 current 2 1 3 current 0.1 6.5	104 0 12 <1 665 1415 727 856 3018 history1 2 0 1 history1 0.1 6.5	115 0 13 <1 668 1483 690 872 3298 history2 3 <1 1 history2 0.1 6.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  Method  *ASTM D5185m ASTM D7844  *ASTM D7624  *ASTM D7415	1200 1300 3200 limit/base >25 >20 limit/base >3 >20 >30	115 0 11 0 749 1668 849 956 4148 current 2 1 3 current 0.1 6.5 18.5 current	104 0 12 <1 665 1415 727 856 3018 history1 2 0 1 history1 0.1 6.5 18.3	115 0 13 <1 668 1483 690 872 3298 history2 3 <1 1 history2 0.1 6.4 18.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method  *ASTM D5185m ASTM D5185m  ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  method  *ASTM D7624 *ASTM D7624 *ASTM D7615  method	1200 1300 3200 limit/base >25 >20 limit/base >3 >20 >30 limit/base	115 0 11 0 749 1668 849 956 4148 current 2 1 3 current 0.1 6.5 18.5	104 0 12 <1 665 1415 727 856 3018 history1 2 0 1 history1 0.1 6.5 18.3 history1	115 0 13 <1 668 1483 690 872 3298 history2 3 <1 1 history2 0.1 6.4 18.5

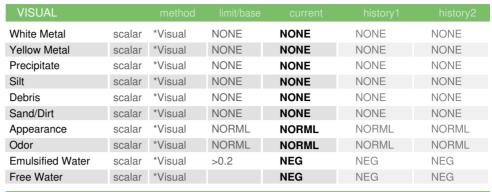


## **OIL ANALYSIS REPORT**



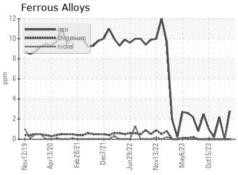




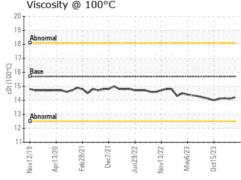


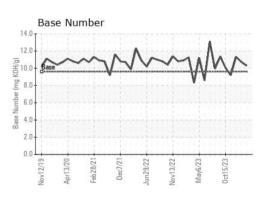
FLUID PHOPER	TILO	method			riistory i	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	15.7	14.2	14.1	14.14

### **GRAPHS**



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Certificate 12367

Laboratory Sample No.

Test Package : IND 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : HLC0003216 Lab Number : 06146753

Unique Number : 10976831

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Received : 11 Apr 2024 **Tested** : 12 Apr 2024

Diagnosed : 12 Apr 2024 - Wes Davis

PRUDHOE BAY, AK US 99734 Contact: PERRY NEEL pneel@hilcorp.com

T: (907)670-3514

F: (907)659-5377

HILCORP NORTHSTAR FACILITY

\* - 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)

Report Id: BPENOR [WUSCAR] 06146753 (Generated: 04/12/2024 16:57:07) Rev: 1

Contact/Location: PERRY NEEL - BPENOR