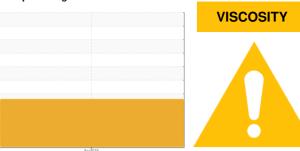


# **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

# **NOT GIVEN WC0798807**

Hydraulic System

ESSO UNIVIS N 32 (--- GAL)

### **DIAGNOSIS**

#### Recommendation

We recommend an early resample to monitor this condition.

#### Wear

All component wear rates are normal.

## Contamination

Insufficient sample was received to confirm some laboratory tests. There is a high amount of particulates present in the oil.

#### Fluid Condition

Viscosity of sample indicates oil is within ISO 46 range, advise investigate. Confirm oil type. The condition of the oil is suitable for further service.

				Apr2024		
				NJIZOZ4		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0798807		
Sample Date		Client Info		20 Apr 2024		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed	1113	Client Info		N/A		
Sample Status		Ollerit IIIIO		ABNORMAL		
				ABNOTIMAL		
CONTAMINATION	V	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	0		
Chromium	ppm	ASTM D5185m	>10	0		
Nickel	ppm	ASTM D5185m	>10	0		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m		0		
Aluminum	ppm	ASTM D5185m	>10	0		
Lead	ppm	ASTM D5185m	>10	0		
Copper	ppm	ASTM D5185m	>75	0		
Tin	ppm	ASTM D5185m	>10	0		
Vanadium	ppm	ASTM D5185m	710	0		
Cadmium	ppm	ASTM D5185m		0		
Oddinani	PPIII	710 1111 20 100111		U		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1	history2
	ppm ppm					
Boron		ASTM D5185m		0		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	.1	0 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	.1	0 0 0		
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	.1	0 0 0 0		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	.3	0 0 0 0		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	.1 .3 0 74	0 0 0 0 0		
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	.1 .3 0 74 266	0 0 0 0 0		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	.1 .3 0 74 266	0 0 0 0 0 0		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	.1 .3 0 74 266 338	0 0 0 0 0 0 0 0 0 3		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m	.1 .3 0 74 266 338	0 0 0 0 0 0 0 0 0 3	     history1	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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	.1 .3 .74 266 338 limit/base >20	0 0 0 0 0 0 0 0 3 0 current	     history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	.1 .3 .74 .266 .338  limit/base >20 >20	0 0 0 0 0 0 0 0 3 0 current	history 1	history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	.1 .3 .0 .74 .266 .338  limit/base >20  s20  limit/base	0 0 0 0 0 0 0 0 3 0 current 0 0	history1 history1	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m	.1 .3 .0 .74 .266 .338	0 0 0 0 0 0 0 0 0 0 0 0 current 0 0 current 12431	history1 history1	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m	.1 .3 .74 266 338 limit/base >20 >20 limit/base >10000 >1300	0 0 0 0 0 0 0 0 0 0 0 0 current 0 0 current 12431 3383	history1 history1	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m ASTM D7647 ASTM D7647	.1 .3 .0 .74 .266 .338  limit/base >20 .10000 >1300 >160	0 0 0 0 0 0 0 0 0 0 0 0 current 0 0 current 12431 3383 177	history1 history1	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur  CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647	.1 .3 .74 266 338  limit/base >20 .10000 >1300 >160 >40	0 0 0 0 0 0 0 0 0 0 0 0 0 current 0 0 current 12431 3383 177 40	history1 history1	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	.1 .3 .74 .266 .338  limit/base >20 .20 .300 .300 .300 .300 .300 .300 .30	0 0 0 0 0 0 0 0 0 0 0 0 0 current 0 0 current 12431 3383 177 40 3	history1 history1	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur  CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >21µm Particles >38µm Particles >71µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	.1 .3 .74 .266 .338  limit/base >20  >20  limit/base >10000 >1300 >160 >40 >10 >3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 current 0 0 current  12431 3383 177 40 3	history1	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	.1 .3 .74 .266 .338  limit/base >20 .20 .300 .300 .300 .300 .300 .300 .30	0 0 0 0 0 0 0 0 0 0 0 0 0 current 0 0 current 12431 3383 177 40 3	history1 history1	history2 history2

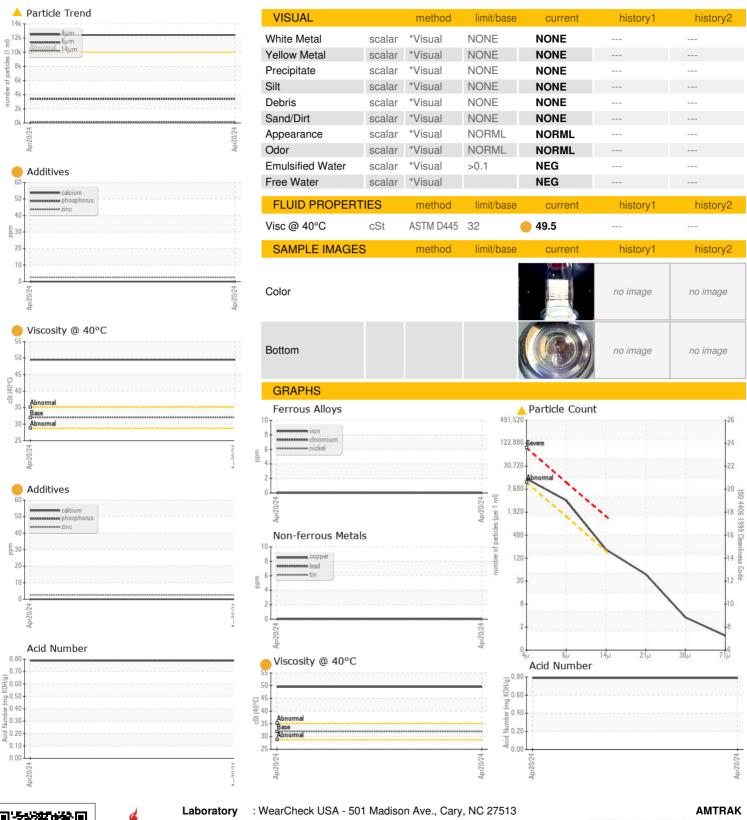
Acid Number (AN)

mg KOH/g ASTM D8045

0.788



## **OIL ANALYSIS REPORT**





Certificate 12367

Sample No.

: WC0798807 Lab Number : 06159038 Unique Number : 10994461

Test Package : MOB 2

Received : 24 Apr 2024 **Tested** Diagnosed

: 30 Apr 2024 : 30 Apr 2024 - Jonathan Hester

1401 W STREET NE, HIGH SPEED RAIL 2ND FLOOR

WASHINGTON, DC US 20018 Contact: MICHAEL PORTER michael.porter@amtrak.com T: (202)870-1399

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

 $^st$  - 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)