

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend

### NORMAL

# Wayne unit 2

Component Landfill Biogas Engine Fluid

D-A Lubricant Blue Flame HB-8 40W (180 GAL)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### 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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

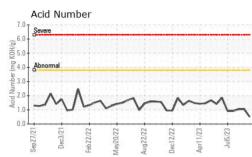
AL)		p2021 Dec20	Aug2022 Dec2022 Apr2023	III Dediti Andrea Andrea			
SAMPLE INFORM	<b>NATION</b>	method	limit/base	current	history1	history2	
Sample Number		Client Info		WC0831454	WC0831448	WC0831446	
Sample Date		Client Info		14 Nov 2023	08 Sep 2023	09 Aug 2023	
lachine Age	hrs	Client Info		109495	108285	107585	
)il Age	hrs	Client Info		554	1953	1253	
il Changed		Client Info		Not Changd	Not Changd	Not Changd	
Sample Status				NORMAL	NORMAL	NORMAL	
CONTAMINATIO	N	method	limit/base	current	history1	history2	
uel		WC Method	>4.0	<1.0	<1.0	<1.0	
Vater		WC Method	>.2	NEG	NEG	NEG	
àlycol		WC Method		NEG	NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2	
on	ppm	ASTM D5185m	>20	3	5	4	
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1	
lickel	ppm	ASTM D5185m	>2	0	0	<1	
ïtanium	ppm	ASTM D5185m		0	0	0	
Silver	ppm	ASTM D5185m	>5	0	0	0	
luminum	ppm	ASTM D5185m	>15	4	3	7	
ead	ppm	ASTM D5185m	>20	<1	<1	0	
opper	ppm	ASTM D5185m	>15	<1	2	2	
in	ppm	ASTM D5185m	>5	<1	1	1	
anadium	ppm	ASTM D5185m		<1	<1	0	
admium	ppm	ASTM D5185m		0	0	0	
ADDITIVES		method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		3	<1	<1	
arium	ppm	ASTM D5185m		0	0	0	
lolybdenum	ppm	ASTM D5185m		6	6	6	
langanese	ppm	ASTM D5185m		<1	<1	<1	
lagnesium	ppm	ASTM D5185m		12	29	28	
alcium	ppm	ASTM D5185m		2166	2488	2477	
hosphorus	ppm	ASTM D5185m		323	350	344	
linc	ppm	ASTM D5185m		410	444	462	
Sulfur	ppm	ASTM D5185m		3057	4277	4235	
CONTAMINANTS	;	method	limit/base	current	history1	history2	
ilicon	ppm	ASTM D5185m	>200	44	122	87	
Sodium	ppm	ASTM D5185m	>20	<1	1	2	
otassium	ppm	ASTM D5185m	>20	0	0	1	
INFRA-RED		method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844	>2	0	0	0	
litration	Abs/cm	*ASTM D7624	>20	5.7	6.5	5.9	
Sulfation	Abs/.1mm	*ASTM D7415	>30	15.9	20.2	19.3	
FLUID DEGRADA		method	limit/base	current	history1	history2	
Dxidation	Abs/.1mm	*ASTM D7414	>25	9.7	11.7	11.0	
cid Number (AN)	mg KOH/g	ASTM D8045		0.51	1.05	1.04	
Base Number (BN)	mg KOH/g	ASTM D2896	8	6.63	6.71	6.93	
57:56) Rev: 1					Submitted By: J	ASON CHENE	

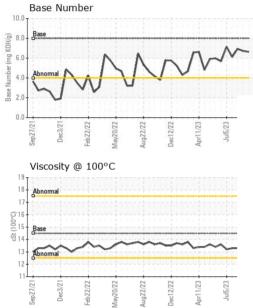
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Submitted By: JASON CHENEY



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					VISUAL White Metal	scalar	method *Visual	limit/base NONE	current	history1 NONE	history2 NONE
					Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
					Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
					Silt	scalar	*Visual	NONE	NONE	NONE	NONE
1	-	N	~	2	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
		4	11111	5	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
	2/22	2/22	1/23	Jul5/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
- for Louis	Aug22/22	Dec12/22	Apr11/23	Jul	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
					Emulsified Water	scalar	*Visual	>.2	NEG	NEG	NEG
					Free Water	scalar	*Visual		NEG	NEG	NEG
					FLUID PROPERT	IES	method	limit/base	current	history1	history2
1			N	M	Visc @ 100°C	cSt	ASTM D445	14.5	13.3	13.6	13.3
A	-	1 1			GRAPHS						
					Iron (ppm)				Lead (ppm)		
	2 -	2		~	50 Severe			50	Severe		
	Aug22/22	Dec12/22	Apr11/23	Jul5/23	TO T	A.1.1 A.1.4		4(			
	Au	De	AF	0.00	and a second sec			عامل المحمد ا	Abnormal		
					10			10			
					- Mar	~	~~	-			
						Aug22/22 -	Dec12/22	Jul5/23 -	Sep 27/21	2/22	Aprl 1/23 Jul5/23
					Sep27/21 Dec3/21 Feb22/22 May20/22	Aug2	Dec1 Apr1	лГ	Sepá Dec Feb2	May20/22 Aug22/22	Aprl Jul
					Aluminum (ppm)				Chromium (p		
~	$\sim$	$\sim$	~	~	40			12	Course		
					30 - Severe			10	8 <b>-</b>		
	22 -	22 -	23	23	E 20 - Abnormal			Ed (			
	Aug22/22	Dec12/22	Apr11/23	Jul5/23	Abnormal		Δ		4		
	A		Å		Man	~	-m	~			
					Sep27/21	2/22	Dec12/22 - Apr11/23 -	Jul5/23+	Sep21/21	2/22	Apr11/23 Jul5/23
					Sep 27/21 Dec3/21 Feb 22/22 May20/22	Aug22/22	Dec1 Apr1	nr	Sepź Dec Feb2	May20/22 Aug22/22	Apr1 Jul
					Copper (ppm)			-2,1704	Silicon (ppm)		
					40			500	Sauara		1001000100
					30 - Severe			400			
					Abnormal			E 300	0 - Abnormal		
					10+				1 1 1	111	1 ~ .
						2-	in	100		VVL	VVV
					3/21	2/22	2/22 -	Jul5/23	sep27/21	0/22	pr11/23 - Jul5/23 -
					Sep 27/21 Dec3/21 Feb 22/22	Aug22/22	Dec12/22 Apr11/23	Jul	Sep27/21 Dec3/21 Feb22/22	May20/22 Aug22/22	Aprl 1/23 Jul5/23
					Viscosity @ 100°C				Base Number		
					20			10.0 P	Page	000000000000000000000000000000000000000	00000000000
					18 - Abnormal	Contrast.		HOX B			a m
					(0.016 Base 314 Abmorma			E 6.0	Abaamad A	NAL	VV.
								(b)H0X (b) Bayes Number (mg K0H) Bayes 2.0			
					12			₩ 2.0 ₩ 0.0			
						2/22	2/22 -	Jul5/23+		0/22 -	pr11/23 -
					Sep27/21 Dec3/21 Feb22/22 May20/22	Aug22/22	Dec12/22 Apr11/23	Jul	Sep 27/21 Dec3/21 Feb 22/22	May20/22 Aug22/22	Apr11/23 Jul5/23
ړ			Labo	ratory	: WearCheck USA - 5		son Ave. C	arv. NC 2751	3		AYNE COUNT
Sample No.						leceived : 17 Nov 2023			-		H LANDFILL R
CCRE	DITE	D	Lab N	lumber		Diagnos		Nov 2023			DUDLEY, N
TESTING LAD	SORATORY			e Number		Diagnos	tician : Do	n Baldridge		Operator at 1	US 2833
Certificat				Package	e : MOB 2 contact Customer Servio	ce at 1.4	300-237-136	9	ich		ASON CHENE renewables.cor
	0000				are outside of the ISO 17				jci	iciney@terreva	T