

# **OIL ANALYSIS REPORT**

## Sample Rating Trend

## **DEGRADATION**



# EDLTAY Machine Id TAYM01BE (S/N 1256576)

Biogas Engine

CHEVRON HDAX 6500 LFG GAS ENGINE OIL (180 GAL)





## DIAGNOSIS

#### Recommendation

We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the

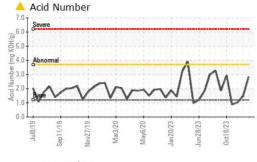
### ▲ Fluid Condition

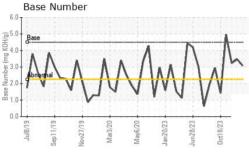
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is at the top-end of the recommended limit.

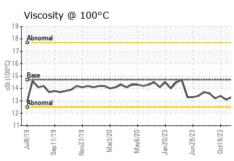
SAMPLE INFORMATION   method   limit/base   current   history1   history2	GAS ENGINE OIL (18	30 GAL)	12019 Sep 20	19 Nov2019 Mar2020	May2020 Jan2023 Jun2023	Det2023	
Sample Date   Client Info   12 Jan 2024   27 Nov 2023   16 Nov 2023   Machine Age   Client Info   7209   54540   54540   54540   54340   500   Client Info   N/A   N/A   N/A   N/A   N/A   N/A   Sample Status	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date   Client Info   12 Jan 2024   27 Nov 2023   16 Nov 2023   Machine Age   Client Info   54340   54340   54340   200     Oil Age   Client Info   N/A   N/A	Sample Number		Client Info		WC0788192	WC0788160	WC0788232
Oil Age         Client Info         54340         54340         200           Oil Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         Client Info         N/A         N/A         N/A         N/A         N/A           CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >4.0         <1.0			Client Info		12 Jan 2024	27 Nov 2023	16 Nov 2023
Oil Changed Status	Machine Age		Client Info		7209	54540	54540
Sample Status	Oil Age		Client Info		54340	54340	200
ABNORMAL   NORMAL   NORMAL	Oil Changed		Client Info		N/A	N/A	N/A
Fuel	-				ABNORMAL	NORMAL	NORMAL
Water Glycol         WC Method WC Method         >.2         NEG NEG         NEG NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >15         2         0         0           Chromium         ppm         ASTM D5185m         >4         <1	CONTAMINATION	١	method	limit/base	current	history1	history2
Glycol         WC Method         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >15         2         0         0           Chromium         ppm         ASTM D5185m         >4         <1	Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium         ppm         ASTM D5185m         >4         <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel         ppm         ASTM D5185m         >2         0         0         0           Titanium         ppm         ASTM D5185m         0         <1	Iron	ppm	ASTM D5185m	>15	2	0	0
Titanium         ppm         ASTM D5185m         0         <1         0           Silver         ppm         ASTM D5185m         >5         0         0         0           Aluminum         ppm         ASTM D5185m         >6         1         <1         <1           Lead         ppm         ASTM D5185m         >6         1         2         0           Copper         ppm         ASTM D5185m         >6         1         2         0           Tin         ppm         ASTM D5185m         <4         2         2         2         2           Vanadium         ppm         ASTM D5185m         <1         <1         0         0         0           Cadmium         ppm         ASTM D5185m         <1         <1         0         0         0           Boron         ppm         ASTM D5185m         0         <1         0         0         0           Barium         ppm         ASTM D5185m         2         1         0         0         0           Barium         ppm         ASTM D5185m         2         1         0         0         0         0         0         0         0         <	Chromium	ppm	ASTM D5185m	>4	<1	0	0
Silver         ppm         ASTM D5185m         >5         0         0         0           Aluminum         ppm         ASTM D5185m         >6         1         <1         <1           Lead         ppm         ASTM D5185m         >20         0         1         0           Copper         ppm         ASTM D5185m         >6         1         2         0           Tin         ppm         ASTM D5185m         >4         2         2         2           Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         2         1         1         1	Nickel	ppm	ASTM D5185m	>2	0	0	0
Aluminum         ppm         ASTM D5185m         >6         1         <1         <1           Lead         ppm         ASTM D5185m         >20         0         1         0           Copper         ppm         ASTM D5185m         >6         1         2         0           Tin         ppm         ASTM D5185m         >4         2         2         2           Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadmium         ppm         ASTM D5185m         0         <1	Titanium	ppm	ASTM D5185m		0	<1	0
Lead         ppm         ASTM D5185m         >20         0         1         0           Copper         ppm         ASTM D5185m         >6         1         2         0           Tin         ppm         ASTM D5185m         >4         2         2         2         2           Vanadium         ppm         ASTM D5185m         -1         <1         <1         0           Cadmium         ppm         ASTM D5185m         0         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         <1         0           Barium         ppm         ASTM D5185m         0         <1         0           Barium         ppm         ASTM D5185m         2         1         0           Manganese         ppm         ASTM D5185m         2         1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1	Silver	ppm	ASTM D5185m	>5	0	0	0
Copper         ppm         ASTM D5185m         >6         1         2         0           Tin         ppm         ASTM D5185m         >4         2         2         2           Vanadium         ppm         ASTM D5185m         <1	Aluminum	ppm	ASTM D5185m	>6	1	<1	<1
Tin         ppm         ASTM D5185m         >4         2         2         2           Vanadium         ppm         ASTM D5185m         <1         <1         0           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         <1         0           Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         2         1         0           Manganese         ppm         ASTM D5185m         7         0         6           Calcium         ppm         ASTM D5185m         1890         1635         1848           Phosphorus         ppm         ASTM D5185m         243         229         279           Zinc         ppm         ASTM D5185m         332         297         345           Sulfur         ppm         ASTM D5185m         3317         1569         2889           CONTAMINANTS         method         limit/base         current         history1         hi	Lead	ppm	ASTM D5185m	>20	0	1	0
Vanadium         ppm         ASTM D5185m         <1         <1         0           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         <1         0           Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         2         1         0           Manganese         ppm         ASTM D5185m         <1         <1         <1         <1           Magnesium         ppm         ASTM D5185m         7         0         6            Calcium         ppm         ASTM D5185m         1890         1635         1848           Phosphorus         ppm         ASTM D5185m         332         229         279           Zinc         ppm         ASTM D5185m         3317         1569         2889           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20	Copper	ppm	ASTM D5185m	>6	1	2	0
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         <1         0           Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         2         1         0           Manganese         ppm         ASTM D5185m         21         <1         <1           Magnesium         ppm         ASTM D5185m         7         0         6           Calcium         ppm         ASTM D5185m         1890         1635         1848           Phosphorus         ppm         ASTM D5185m         332         297         345           Sulfur         ppm         ASTM D5185m         3317         1569         2889           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         3         5         1           Potassium         ppm         ASTM D5185m         >20         9	Tin	ppm	ASTM D5185m	>4	2	2	2
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         <1	Vanadium	ppm	ASTM D5185m		<1	<1	0
Boron         ppm         ASTM D5185m         0         <1	Cadmium	ppm	ASTM D5185m		0	0	0
Barium         ppm         ASTM D5185m         0         0         0           Molybdenum         ppm         ASTM D5185m         2         1         0           Manganese         ppm         ASTM D5185m         <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         2         1         0           Manganese         ppm         ASTM D5185m         <1         <1         <1           Magnesium         ppm         ASTM D5185m         7         0         6           Calcium         ppm         ASTM D5185m         1890         1635         1848           Phosphorus         ppm         ASTM D5185m         243         229         279           Zinc         ppm         ASTM D5185m         332         297         345           Sulfur         ppm         ASTM D5185m         3317         1569         2889           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >181         22         56         24           Sodium         ppm         ASTM D5185m         >20         3         5         1           Potassium         ppm         ASTM D5185m         >20         9         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         *ASTM D7844 <th< td=""><td>Boron</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>0</th><td>&lt;1</td><td>0</td></th<>	Boron	ppm	ASTM D5185m		0	<1	0
Manganese         ppm         ASTM D5185m         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1 <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>0</th> <td>0</td> <td>0</td>	Barium	ppm	ASTM D5185m		0	0	0
Magnesium         ppm         ASTM D5185m         7         0         6           Calcium         ppm         ASTM D5185m         1890         1635         1848           Phosphorus         ppm         ASTM D5185m         243         229         279           Zinc         ppm         ASTM D5185m         332         297         345           Sulfur         ppm         ASTM D5185m         3317         1569         2889           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >181         22         56         24           Sodium         ppm         ASTM D5185m         >20         3         5         1           Potassium         ppm         ASTM D5185m         >20         9         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >2         0         0         0           Nitration         Abs/:1mm         *ASTM D7624         >20         5.0         5.0         5.0           <	Molybdenum	ppm	ASTM D5185m		2	1	0
Calcium         ppm         ASTM D5185m         1890         1635         1848           Phosphorus         ppm         ASTM D5185m         243         229         279           Zinc         ppm         ASTM D5185m         332         297         345           Sulfur         ppm         ASTM D5185m         3317         1569         2889           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >181         22         56         24           Sodium         ppm         ASTM D5185m         >20         3         5         1           Potassium         ppm         ASTM D5185m         >20         9         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >2         0         0         0           Nitration         Abs/:nm         *ASTM D7624         >20         5.0         5.0         5.0           Sulfation         Abs/:nm         *ASTM D7415         >30         21.8         21.8         18.9<	Manganese	ppm	ASTM D5185m		<1	<1	<1
Phosphorus         ppm         ASTM D5185m         243         229         279           Zinc         ppm         ASTM D5185m         332         297         345           Sulfur         ppm         ASTM D5185m         3317         1569         2889           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >181         22         56         24           Sodium         ppm         ASTM D5185m         >20         3         5         1           Potassium         ppm         ASTM D5185m         >20         9         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >2         0         0         0           Nitration         Abs/cm         *ASTM D7624         >20         5.0         5.0         5.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         21.8         21.8         18.9           FLUID DEGRADATION         method         limit/base         current         history1 <td>-</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>7</th> <td>0</td> <td>6</td>	-	ppm	ASTM D5185m		7	0	6
Zinc         ppm         ASTM D5185m         332         297         345           Sulfur         ppm         ASTM D5185m         3317         1569         2889           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >181         22         56         24           Sodium         ppm         ASTM D5185m         >20         3         5         1           Potassium         ppm         ASTM D5185m         >20         9         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >2         0         0         0           Nitration         Abs/cm         *ASTM D7624         >20         5.0         5.0         5.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         21.8         21.8         18.9           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25 <th>Calcium</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>1890</th> <th>1635</th> <th>1848</th>	Calcium	ppm	ASTM D5185m		1890	1635	1848
Sulfur         ppm         ASTM D5185m         3317         1569         2889           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >181         22         56         24           Sodium         ppm         ASTM D5185m         >20         3         5         1           Potassium         ppm         ASTM D5185m         >20         9         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >2         0         0         0           Nitration         Abs/cm         *ASTM D7624         >20         5.0         5.0         5.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         21.8         21.8         18.9           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         10.6         10.4         8.9           Acid Number (AN)         mg KOH/g         ASTM D8045	Phosphorus	ppm	ASTM D5185m		243	229	279
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >181         22         56         24           Sodium         ppm         ASTM D5185m         >20         3         5         1           Potassium         ppm         ASTM D5185m         >20         9         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >2         0         0         0           Nitration         Abs/cm         *ASTM D7624         >20         5.0         5.0         5.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         21.8         21.8         18.9           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         10.6         10.4         8.9           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         2.84         1.47         1.	Zinc	ppm	ASTM D5185m		332	297	345
Silicon         ppm         ASTM D5185m         >181         22         56         24           Sodium         ppm         ASTM D5185m         >20         3         5         1           Potassium         ppm         ASTM D5185m         >20         9         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >2         0         0         0           Nitration         Abs/cm         *ASTM D7624         >20         5.0         5.0         5.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         21.8         21.8         18.9           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         10.6         10.4         8.9           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         2.84         1.47         1.03	Sulfur	ppm	ASTM D5185m		3317	1569	2889
Sodium         ppm         ASTM D5185m         >20         3         5         1           Potassium         ppm         ASTM D5185m         >20         9         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >2         0         0         0           Nitration         Abs/cm         *ASTM D7624         >20         5.0         5.0         5.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         21.8         21.8         18.9           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         10.6         10.4         8.9           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         2.84         1.47         1.03	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         9         0         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >2         0         0         0           Nitration         Abs/cm         *ASTM D7624         >20         5.0         5.0         5.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         21.8         21.8         18.9           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         10.6         10.4         8.9           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         2.84         1.47         1.03	Silicon	ppm	ASTM D5185m	>181	22	56	24
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >2         0         0         0           Nitration         Abs/cm         *ASTM D7624         >20         5.0         5.0         5.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         21.8         21.8         18.9           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         10.6         10.4         8.9           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         2.84         1.47         1.03	Sodium	ppm	ASTM D5185m	>20	3	5	1
Soot %         %         *ASTM D7844         >2         0         0         0           Nitration         Abs/cm         *ASTM D7624         >20         5.0         5.0         5.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         21.8         21.8         18.9           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         10.6         10.4         8.9           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         2.84         1.47         1.03	Potassium	ppm	ASTM D5185m	>20	9	0	5
Nitration         Abs/cm         *ASTM D7624         >20         5.0         5.0         5.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         21.8         21.8         18.9           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         10.6         10.4         8.9           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         2.84         1.47         1.03	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         21.8         21.8         18.9           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         10.6         10.4         8.9           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         2.84         1.47         1.03	Soot %	%	*ASTM D7844	>2	0	0	0
FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         10.6         10.4         8.9           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         ▲ 2.84         1.47         1.03	Nitration	Abs/cm	*ASTM D7624	>20	5.0	5.0	5.0
Oxidation         Abs/.1mm         *ASTM D7414         >25         10.6         10.4         8.9           Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         2.84         1.47         1.03	Sulfation	Abs/.1mm	*ASTM D7415	>30	21.8	21.8	18.9
Acid Number (AN)         mg KOH/g         ASTM D8045         1.2         2.84         1.47         1.03	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 4.5 <b>3.08</b> 3.47 3.23	Oxidation	Abs/.1mm	*ASTM D7414	>25	10.6	10.4	8.9



# **OIL ANALYSIS REPORT**





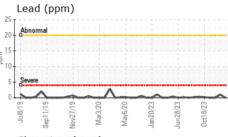


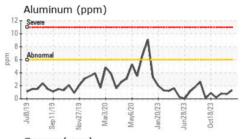
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

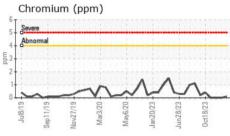
I LOID I NOI LI	TILO	memou	IIIIII/Dase	Current	HISTOLAL	TIISTOI YZ
Visc @ 100°C	cSt	ASTM D445	14.7	13.2	13.5	13.3

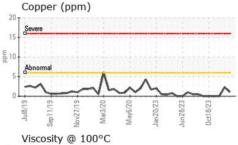
Severe					
Abnormal					
			Λ		
^	N	1	1	7	
~	A .	VV	V	1	M

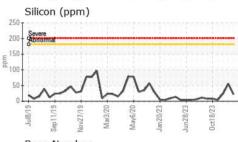
**GRAPHS** 

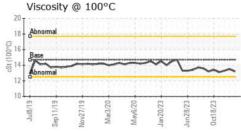


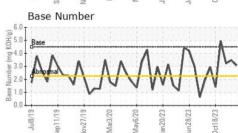
















Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : MOB 2

: WC0788192 : 06062960 : 10834342

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved Diagnosed Diagnostician

: 17 Jan 2024 : 19 Jan 2024 : Don Baldridge **EDL NA Recips-Taylor County** 

TAYLOR COUNTY POWER STATION, COUNTY ROAD 33 & STEWART ROAD MAUK, GA US 31058

Contact: STEVEN BABB steven.babb@edlenergy.com T:

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)

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