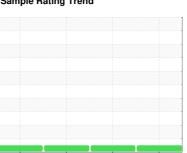


OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id G1 Component **Diesel Engine**

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

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

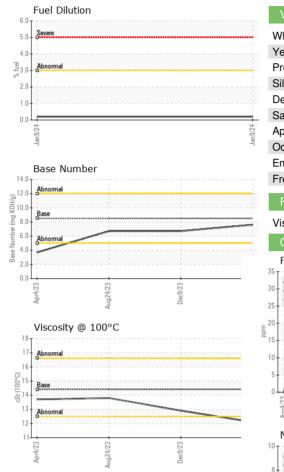
Fluid Condition

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

Sample Date Client Info 09 Jan 2024 09 Dec 2023 24 Aug 2023 Machine Age hrs Client Info 10415 10237 9667 Oil Age hrs Client Info Changed Changed Changed Changed Changed NORMAL NORMAL NORMAL OII Changed Sample Status Image: Changed NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >12.0 4 1.2 1.2 Chromium ppm ASTM D5185m >2.0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <td< th=""><th colspan="6">SAE 15W40 (GAL)</th></td<>	SAE 15W40 (GAL)						
Client Info	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age	Sample Number		Client Info		WC0874276	WC0874368	WC0783980
Oil Age hrs Client Info 3355 569 332 Oil Changed Client Info Changed Changed Changed Changed Changed Changed Changed NORMAL NORMAL	Sample Date		Client Info		09 Jan 2024	09 Dec 2023	24 Aug 2023
Contained Client Info Changed NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL	Machine Age	hrs	Client Info		10415	10237	9667
NORMAL NORMAL NORMAL NORMAL NORMAL	Oil Age	hrs	Client Info		3355	569	332
Water	Oil Changed		Client Info		Changed	Changed	Changed
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imitibase current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 4 12 12 Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >5 0 <1 0 Silver ppm ASTM D5185m >2 0 0 <1 Silver ppm ASTM D5185m >20 1 2 1 Aluminum ppm ASTM D5185m >20 1 2 1 Lead ppm ASTM D5185m >330 <1 2 <1 Copper ppm ASTM D5185m >30 <1 2 <1 Tin ppm ASTM D5185m >30 0 0 0	Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS	CONTAMINATION	N	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 4 12 12 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Continum	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >5 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	4	12	12
Silver	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>5	0	<1	0
Aluminum	Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Lead	Silver	ppm	ASTM D5185m	>2	0	0	
Copper ppm ASTM D5185m >330 <1 2 <1 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>20	1	2	1
Tin	Lead	ppm	ASTM D5185m	>40	0	<1	<1
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 250 21 8 18 Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 89 62 75 Manganese ppm ASTM D5185m 100 89 62 75 Magnesium ppm ASTM D5185m 100 873 846 446 Calcium ppm ASTM D5185m 3000 1133 1203 1864 Phosphorus ppm ASTM D5185m 1350 1190 1194 1280 Sulfur ppm ASTM D5185m 4250 2993 2659 3861 CONTAMINANTS method limit/base current history1 <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>330</td> <th><1</th> <td>2</td> <td><1</td>	Copper	ppm	ASTM D5185m	>330	<1	2	<1
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 21 8 18 Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 89 62 75 Manganese ppm ASTM D5185m 100 873 846 446 Calcium ppm ASTM D5185m 450 873 846 446 Calcium ppm ASTM D5185m 3000 1133 1203 1864 Phosphorus ppm ASTM D5185m 1350 1190 1194 1280 Sulfur ppm ASTM D5185m 1350 1190 1194 1280 Sulfur ppm ASTM D5185m >25 7 9 4 CONTAMINANTS method limit/base current	Tin	ppm	ASTM D5185m	>15	<1	1	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	<1	0
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 89 62 75 Manganese ppm ASTM D5185m 100 873 846 446 Calcium ppm ASTM D5185m 3000 1133 1203 1864 Phosphorus ppm ASTM D5185m 3000 1133 1203 1864 Phosphorus ppm ASTM D5185m 1150 1053 1026 1021 Zinc ppm ASTM D5185m 1350 1190 1194 1280 Sulfur ppm ASTM D5185m 4250 2993 2659 3861 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 9 4 Sodium ppm ASTM D5185m >20 0 <1 2 Fuel % ASTM D51	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 100 89 62 75 Manganese ppm ASTM D5185m <1 <1 <1 Magnesium ppm ASTM D5185m 450 873 846 446 Calcium ppm ASTM D5185m 3000 1133 1203 1864 Phosphorus ppm ASTM D5185m 1150 1053 1026 1021 Zinc ppm ASTM D5185m 1350 1190 1194 1280 Sulfur ppm ASTM D5185m 4250 2993 2659 3861 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 9 4 Sodium ppm ASTM D5185m >158 2 8 5 Potassium ppm ASTM D5185m >20 0 <1 2 Fuel % ASTM D7844 >4	Boron	nnm	ACTM DE195m	250	21	Q	10
Manganese ppm ASTM D5185m <1 <1 <1 Magnesium ppm ASTM D5185m 450 873 846 446 Calcium ppm ASTM D5185m 3000 1133 1203 1864 Phosphorus ppm ASTM D5185m 1150 1053 1026 1021 Zinc ppm ASTM D5185m 1350 1190 1194 1280 Sulfur ppm ASTM D5185m 4250 2993 2659 3861 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 9 4 Sodium ppm ASTM D5185m >158 2 8 5 Potassium ppm ASTM D5185m >20 0 <1	20.0	ppiii	ASTIVI DOTOSIII	230		O	10
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Calcium ppm ASTM D5185m 3000 1133 1203 1864 Phosphorus ppm ASTM D5185m 1150 1053 1026 1021 Zinc ppm ASTM D5185m 1350 1190 1194 1280 Sulfur ppm ASTM D5185m 4250 2993 2659 3861 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >25 7 9 4 Solicon ppm ASTM D5185m >25 7 9 4 Solicon ppm ASTM D5185m >20 0 <1	Barium	ppm	ASTM D5185m	10	0	0	0
Phosphorus ppm ASTM D5185m 1150 1053 1026 1021 Zinc ppm ASTM D5185m 1350 1190 1194 1280 Sulfur ppm ASTM D5185m 4250 2993 2659 3861 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 9 4 Sodium ppm ASTM D5185m >25 7 9 4 Sodium ppm ASTM D5185m >20 0 <1	Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	10	0 89	0 62	0 75
Zinc ppm ASTM D5185m 1350 1190 1194 1280 Sulfur ppm ASTM D5185m 4250 2993 2659 3861 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 9 4 Sodium ppm ASTM D5185m >158 2 8 5 Potassium ppm ASTM D5185m >20 0 <1	Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	100	0 89 <1	0 62 <1	0 75 <1
Sulfur ppm ASTM D5185m 4250 2993 2659 3861 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 9 4 Sodium ppm ASTM D5185m >158 2 8 5 Potassium ppm ASTM D5185m >20 0 <1	Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450	0 89 <1 873	0 62 <1 846	0 75 <1 446
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 9 4 Sodium ppm ASTM D5185m >158 2 8 5 Potassium ppm ASTM D5185m >20 0 <1	Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000	0 89 <1 873 1133	0 62 <1 846 1203	0 75 <1 446 1864
Silicon ppm ASTM D5185m >25 7 9 4 Sodium ppm ASTM D5185m >158 2 8 5 Potassium ppm ASTM D5185m >20 0 <1 2 Fuel % ASTM D3524 >3.0 0.2 <1.0 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.7 0.5 Nitration Abs/cm *ASTM D7624 >20 6.1 9.1 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 20.3 20.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.2 15.1 14.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150	0 89 <1 873 1133 1053	0 62 <1 846 1203 1026	0 75 <1 446 1864 1021
Sodium ppm ASTM D5185m >158 2 8 5 Potassium ppm ASTM D5185m >20 0 <1	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350	0 89 <1 873 1133 1053 1190	0 62 <1 846 1203 1026 1194	0 75 <1 446 1864 1021 1280
Potassium ppm ASTM D5185m >20 0 <1 2 Fuel % ASTM D3524 >3.0 0.2 <1.0 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.7 0.5 Nitration Abs/cm *ASTM D7624 >20 6.1 9.1 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 20.3 20.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.2 15.1 14.4	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	10 100 450 3000 1150 1350 4250	0 89 <1 873 1133 1053 1190 2993	0 62 <1 846 1203 1026 1194 2659	0 75 <1 446 1864 1021 1280 3861
Fuel % ASTM D3524 >3.0 0.2 <1.0 <1.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.7 0.5 Nitration Abs/cm *ASTM D7624 >20 6.1 9.1 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 20.3 20.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.2 15.1 14.4	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	10 100 450 3000 1150 1350 4250	0 89 <1 873 1133 1053 1190 2993	0 62 <1 846 1203 1026 1194 2659	0 75 <1 446 1864 1021 1280 3861 history2
INFRA-RED	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25	0 89 <1 873 1133 1053 1190 2993 current	0 62 <1 846 1203 1026 1194 2659 history1	0 75 <1 446 1864 1021 1280 3861 history2
Soot % % *ASTM D7844 >4 0.3 0.7 0.5 Nitration Abs/cm *ASTM D7624 >20 6.1 9.1 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 20.3 20.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.2 15.1 14.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158	0 89 <1 873 1133 1053 1190 2993 current 7	0 62 <1 846 1203 1026 1194 2659 history1	0 75 <1 446 1864 1021 1280 3861 history2 4
Nitration Abs/cm *ASTM D7624 >20 6.1 9.1 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 20.3 20.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.2 15.1 14.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	0 89 <1 873 1133 1053 1190 2993 current 7 2	0 62 <1 846 1203 1026 1194 2659 history1 9 8 <1	0 75 <1 446 1864 1021 1280 3861 history2 4 5
Sulfation Abs/.1mm *ASTM D7415 >30 17.7 20.3 20.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.2 15.1 14.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >3.0	0 89 <1 873 1133 1053 1190 2993 current 7 2 0	0 62 <1 846 1203 1026 1194 2659 history1 9 8 <1	0 75 <1 446 1864 1021 1280 3861 history2 4 5 2 <1.0
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.2 15.1 14.4	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >3.0	0 89 <1 873 1133 1053 1190 2993 current 7 2 0 0.2	0 62 <1 846 1203 1026 1194 2659 history1 9 8 <1 <1.0	0 75 <1 446 1864 1021 1280 3861 history2 4 5 2 <1.0 history2
Oxidation	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >3.0 limit/base	0 89 <1 873 1133 1053 1190 2993 current 7 2 0 0.2 current	0 62 <1 846 1203 1026 1194 2659 history1 9 8 <1 <1.0 history1 0.7	0 75 <1 446 1864 1021 1280 3861 history2 4 5 2 <1.0 history2 0.5
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >3.0 limit/base >4 >20	0 89 <1 873 1133 1053 1190 2993 current 7 2 0 0.2 current 0.3 6.1	0 62 <1 846 1203 1026 1194 2659 history1 9 8 <1 <1.0 history1 0.7 9.1	0 75 <1 446 1864 1021 1280 3861 history2 4 5 2 <1.0 history2 0.5 8.2
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D76185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >3.0 limit/base >4 >20 >30	0 89 <1 873 1133 1053 1190 2993 current 7 2 0 0.2 current 0.3 6.1 17.7	0 62 <1 846 1203 1026 1194 2659 history1 9 8 <1 <1.0 history1 0.7 9.1 20.3	0 75 <1 446 1864 1021 1280 3861 history2 4 5 2 <1.0 history2 0.5 8.2 20.0
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7824 *ASTM D7844	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 >3.0 limit/base >4 >20 >30 limit/base	0 89 <1 873 1133 1053 1190 2993 current 7 2 0 0.2 current 0.3 6.1 17.7	0 62 <1 846 1203 1026 1194 2659 history1 9 8 <1 <1.0 history1 0.7 9.1 20.3 history1	0 75 <1 446 1864 1021 1280 3861 history2 4 5 2 <1.0 history2 0.5 8.2 20.0 history2



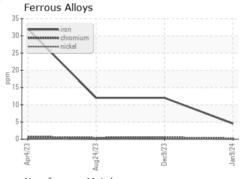
OIL ANALYSIS REPORT



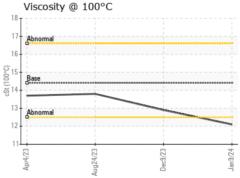
VICLIAL		us sales sal	line:4/lenene		la i a t a m . d	history.O
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	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
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
ELLID DDODEDT	IEC	mathad	limit/bass	ourront.	hiotomit	hiotom/2

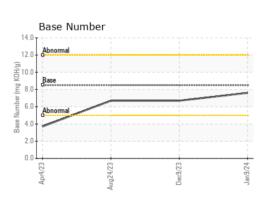
FLUID PROPER	HES	method	ilmit/base		nistory i	nistoryz
Visc @ 100°C	cSt	ASTM D445	14.4	12.1	12.9	13.8

GRAPHS



Non-fe	rrous Metals		
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0	THE RESERVE TO LABORATE AND ADDRESS OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN CO	***************************************	State Special
Apr4/23	Aug24/23	Dec9/23	Jan9/24
Viscosi	ty @ 100°C		









Laboratory Sample No. Lab Number **Unique Number**

: 06060553 : 10831935

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0874276

Recieved : 16 Jan 2024 Diagnosed

: 18 Jan 2024 Diagnostician : Wes Davis

Test Package : CONST (Additional Tests: FuelDilution, PercentFuel, TBN)

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)

Apple Valley Waste - EHT Location

6626 Delilah Road Egg Harbor Township, NJ US 08234

Contact: Service Manager

T: