

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW022

TOTAL DEPTH:

180'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
110	Sonic					No Recovery	
110						No Recovery	
115	Sonic						
120							
120						SP: 10YR(6/1) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 5% fine sand, 60% medium sand, 30% coarse sand, 5%	

Bentonite Seal

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DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
						fine gravel, loose, wet, gravel range 5-6mm	
					SP		121
					SP	SP: 10YR(6/1) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 35% medium sand, 35% coarse sand, 10% fine gravel, 20% coarse gravel, loose, wet, gravel range 18-32mm, trace cobble	122
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 80% medium sand, 10% coarse sand, trace fine gravel, loose, moist	123
					SP		124
125	Sonic					SP: 10YR(6/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 10% silt, 20% fine sand, 70% medium sand, trace coarse sand, trace fine gravel, loose, wet	125
							126
							127
	Sonic				SP		128
							129
130						No Recovery	130
							131
	Sonic				SP	SP: 10YR(6/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, 10% silt, 25% fine sand, 65% medium sand, loose, wet	132



# FIELD BOREHOLE LOG

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**GAAF-MW022**  
**180'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
133	Sonic						
134							
135							
136							
137	Sonic						1" PVC
138							
139							
140							
141	Sonic						
142							
143							
144							

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TOTAL DEPTH:

180'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
145	Sonic				CL	CL Continued: 10YR(6/1) LEAN CLAY, low plasticity, 90% clay, 10% silt, stiff, moist, at 146.5ft clay becomes very stiff	145
							146
							147
							148
	Sonic				CL		149
150						CL: 10YR(6/1) LEAN CLAY, low plasticity, 100% clay, stiff, moist	150
							151
							152
					CL		153
							154
155						CL Continued: 10YR(6/1) LEAN CLAY, low plasticity, 100% clay, stiff, moist, from 158.1 ft to 158.5 ft bgs is a wet medium sand seam	155
							156
							157



BOREHOLE NO: **GAAF-MW022**  
TOTAL DEPTH: **180'**

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BOREHOLE NO:  
TOTAL DEPTH:

**GAAF-MW022**  
**180'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
170	Sonic			CL		CL: 10YR(6/1) CLAY, low plasticity, 100% clay, very stiff moist	<p>2" PVC</p> <p>Sand Pack</p> <p>GAAF-MW022-177 (2" ID)</p>
175				SP		SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains, trace silt, 20% fine sand, 80% medium sand, trace coarse sand, loose, wet	
180	Sonic			CL		CL: 10YR(6/1) LEAN CLAY, low plasticity, 100% clay, stiff, moist	





# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF-MW023**  
TOTAL DEPTH: **100'**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Grayling Area PFAS			CONTRACTOR:	Mateco		
SITE LOCATION:	Grayling, MI			CREW CHIEF:	Jeff Croel		
PROJECT NO.:	60661441			DRILL RIG TYPE:	Geoprobe 8140DT		
PROJECT MANAGER:	Matt VanderEide			DRILLING METHOD:	Sonic		
LOGGED BY:	Kelly Moss			HOLE DIAMETER:	8 1/4"		
CREATED BY:	Stanley Krenz			DATE START:	10/16/19		
				DATE END:	10/23/19		

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
0	Sonic				SW	SW: 10YR(2/2) POORLY SORTED MEDIUM SAND, non plastic, sub rounded sub angular sand grains and gravel, 10% silt, 15% fine sand, 40% medium sand, 25% coarse sand, 10% fine gravel, trace coarse gravel, with organics, roots, and twigs	
					SW	SW: 10YR(4/4) POORLY SORTED MEDIUM SAND, non plastic, sub rounded sub angular sand grains and sub angular gravel, 5% fine sand, 75% medium sand, 15% coarse sand, 5% fine gravel, trace coarse gravel, with organics, roots, and twigs	
					SW	SW: 10YR(5/6) POORLY SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 10% fine sand, 70% medium sand, 20% coarse sand, trace fine gravel, fining downward	
					SW	SW: 10YR(5/4) POORLY SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 60% medium sand, 20% coarse sand, 10% fine gravel, trace coarse gravel, dense, moist, uniform	
5	Sonic					No Recovery	
					SW	SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, trace clay, 5% silt, 5% fine sand, 40% medium sand, 35% coarse sand, 15% fine gravel, trace coarse gravel, wet	
					SP	SP: 10YR(5/3) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 35% fine sand, 65% medium sand, trace coarse sand, wet, uniform, fining downward	
10							Bentonite Seal

# FIELD BOREHOLE LOG

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100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
							2" PVC
					SW	SW: 10YR(5/3) POORLY SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and sub rounded gravel, 10% fine sand, 45% medium sand, 30% coarse sand, 15% fine gravel	
					SP	SP: 10YR(5/3) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and sub rounded gravel, trace silt, 25% fine sand, 60% medium sand, 15% coarse sand, trace fine gravel, dense, wet, gravel seam	
15	Sonic				SW	SW: 10YR(5/4) POORLY SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 50% medium sand, 30% coarse sand, 10% fine gravel, wet	
					SW	SW: 10YR(5/3) POORLY SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, 15% fine sand, 55% medium sand, 25% coarse sand, 5% fine gravel, color change, gravel seam at 18 ft and 19 ft bgs	
	Sonic				SW		
20					SW	SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 55% medium sand, 25% coarse sand, 10% fine gravel, trace coarse sand, dense, wet, at 22 ft bgs a 45mm pebble	
							Sand Pack



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW023

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100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
23	Sonic					SP: 10YR(5/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 65% medium sand, 20% coarse sand, 5% fine gravel, trace coarse sand, dense, wet, fining downward, at 24 ft bgs a 45mm pebble	GAAF-MW023-25 (2" ID)
24					SP		
25					SW	SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 55% medium sand, 25% coarse sand, 10% fine gravel, trace coarse sand, dense, wet, at 26 ft bgs a 40mm pebble	
26					SP	SP: 10YR(5/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, 25% fine sand, 60% medium sand, 15% coarse sand, trace fine gravel, dense, wet, uniform	
27					SP	SP: 10YR(5/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, 15% fine sand, 40% medium sand, 40% coarse sand, 5% fine gravel, fining upward	
28	Sonic						Bentonite Seal
29					SP	SP: 10YR(5/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 60% medium sand, 30% coarse sand, trace fine gravel	
30					SW	SW: 10YR(5/3) POORLY SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 45% medium sand, 35% coarse sand, 10% fine gravel, trace coarse sand, wet, uniform, gravel range 10-20mm	
31							
32							
33	Sonic						
34							

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BOREHOLE NO:

GAAF-MW023

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
35	Sonic				SP	SP: 10YR(5/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 35% fine sand, 50% medium sand, 15% coarse sand, wet, uniform, coarsening downward	1" PVC  Sand Pack  GAAF-MW023-41 (1" ID)
						SP: 10YR(5/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, 15% fine sand, 45% medium sand, 35% coarse sand, 5% fine gravel	
				SW	SW	SW: 10YR(5/3) POORLY SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded to sub angular sand grains and gravel, 5% fine sand, 20% medium sand, 40% coarse sand, 15% fine gravel, 20% coarse gravel, gravel range 50-70mm, cobbles	
40	Sonic				SW	SW: 10YR(5/3) POORLY SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 20% medium sand, 40% coarse sand, 25% fine gravel, 5% coarse gravel, loose, wet	
						SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 40% medium sand, 30% coarse sand, 15% fine gravel, 5% coarse gravel, at 43.5 ft bgs a 80mm cobble, occasional large cobbles, fining downward	
				SP	SP	SP: 10YR(5/3) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 50% fine sand, 40% medium sand, 10% coarse sand, dense, wet	
45						SP: 10YR(5/3) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 50% fine sand, 40% medium sand, 10% coarse sand, trace fine gravel, dense, wet	



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DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	SP Continued: 10YR(5/3) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 50% fine sand, 40% medium sand, 10% coarse sand, trace fine gravel, dense, wet	
50	Sonic				SP	SP: 10YR(5/3) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 40% fine sand, 40% medium sand, 15% coarse sand, 5% fine gravel, dense, wet, uniform	Bentonite Seal
55	Sonic				SW	SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, trace silt, 15% fine sand, 40% medium sand, 30% coarse sand, 15% fine gravel, trace coarse gravel, gravel range 5-10mm, coarsening downward	
						SW: 10YR(5/3) POORLY SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 25% medium sand, 40% coarse sand, 25% fine gravel, trace coarse gravel, loose, wet	

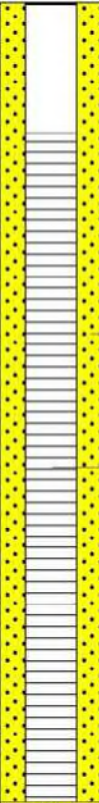

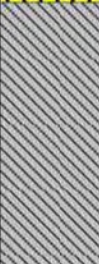
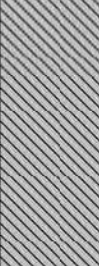


# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW023

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
60	Sonic				SW	SW Continued: 10YR(5/3) POORLY SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 25% medium sand, 40% coarse sand, 25% fine gravel, trace coarse gravel, loose, wet, at 63 ft bgs a 90mm cobble	
61					SW	SW: 10YR(5/3) POORLY SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 25% medium sand, 40% coarse sand, 25% fine gravel, trace coarse gravel, loose, wet, at 63 ft bgs a 90mm cobble	
62	Sonic				SP	SP: 10YR(5/3) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 30% fine sand, 50% medium sand, 20% coarse sand	
63					SW	SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 25% medium sand, 50% coarse sand, 15% fine gravel, trace coarse gravel	
64	Sonic				SP	SP: 10YR(5/3) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 30% fine sand, 50% medium sand, 20% coarse sand	
65					SW	SW: 10YR(5/3) POORLY SORTED COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 30% medium sand, 50% coarse sand, 10% fine gravel, trace coarse gravel, loose, wet	
66	Sonic				SP	SP: 10YR(5/3) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 15% fine sand, 50% medium sand, 35% coarse sand, dense, wet	
67					SW	SW: 10YR(5/3) POORLY SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 25% medium sand, 50% coarse sand, 15% fine gravel, trace coarse gravel, loose, wet, max gravel 50mm	
68	Sonic				SW	SW: 10YR(5/3) POORLY SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, 30% fine sand, 60% medium sand, 10% coarse sand, trace fine gravel, gravel range 30-40mm	
69					SW	SW: 10YR(5/3) POORLY SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, 30% fine sand, 60% medium sand, 10% coarse sand, trace fine gravel, gravel range 30-40mm	
70	Sonic				SW	SW: 10YR(5/3) POORLY SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, 30% fine sand, 60% medium sand, 10% coarse sand, trace fine gravel, gravel range 30-40mm	
71					SW	SW: 10YR(5/3) POORLY SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, 30% fine sand, 60% medium sand, 10% coarse sand, trace fine gravel, gravel range 30-40mm	



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW023

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SW	SW Continued: 10YR(5/3) POORLY SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, 30% fine sand, 60% medium sand, 10% coarse sand, trace fine gravel, gravel range 30-40mm	72
							73
					SW	SW: 10YR(5/3) POORLY SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 25% medium sand, 45% coarse sand, 20% fine gravel, trace coarse gravel, dense, wet	74
75							75
	Sonic				SP	SP: 10YR(5/3) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, 10% silt, 60% fine sand, 30% medium sand, trace coarse sand, dense, wet, uniform	76
							77
							78
							79
80					SP	SP: 10YR(6/2) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, trace silt, 25% fine sand, 50% medium sand, 20% coarse sand, 5% fine gravel, dense, wet	80
							81
							82
	Sonic					SP: 10YR(6/2) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 40% fine sand, 50% medium sand, 10% coarse sand, trace fine gravel, dense, wet, uniform, fining downward	83

Bentonite Seal

1" PVC

Sand Pack

GAAF-MW023-85  
(1" ID)

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW023

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
84	Sonic				SP	SP Continued: 10YR(6/2) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 40% fine sand, 50% medium sand, 10% coarse sand, trace fine gravel, dense, wet, uniform, fining downward	
85					SP	SP: 10YR(6/3) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 40% fine sand, 50% medium sand, 10% coarse sand, trace fine gravel	
86					SP	SP: 10YR(5/1) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 30% fine sand, 50% medium sand, 20% coarse sand, trace fine gravel, dense, wet	
87	Sonic				SP	SP: 10YR(5/1) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 40% fine sand, 50% medium sand, 10% coarse sand, trace fine gravel, dense, wet, at 87 ft bgs a 24mm pebble, fining downward	Bentonite Seal
88					SP		
89					SP		
90	Sonic				SP	SP: 10YR(5/2) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 35% fine sand, 55% medium sand, 10% coarse sand, trace fine gravel, dense, wet, with 10YR(5/6) mottling	
91					SP		
92					SP		
93	Sonic						2" PVC
94						SP: 10YR(4/2) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 35% fine sand, 55% medium sand, 10% coarse sand, trace fine gravel, dense, wet, with 10YR(5/6) mottling	
95							



# FIELD BOREHOLE LOG

BOREHOLE NO:

**GAAF-MW023**

TOTAL DEPTH:

**100'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	SP Continued: 10YR(4/2) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 35% fine sand, 55% medium sand, 10% coarse sand, trace fine gravel, dense, wet, with 10YR(5/6) mottling	96
							Sand Pack
							GAAF-MW023-100 (2" ID)
					SP	SP: 10YR(4/2) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 35% fine sand, 60% medium sand, 5% coarse sand, trace fine gravel, dense, wet, with N3 mottling	99
100							100



# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF-MW024**  
TOTAL DEPTH: **45'**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Grayling Area PFAS			CONTRACTOR:	Mateco		
SITE LOCATION:	Grayling, MI			CREW CHIEF:	Jeff Croel		
PROJECT NO.:	60661441			DRILL RIG TYPE:	Geoprobe 8140DT		
PROJECT MANAGER:	Matt VanderEide			DRILLING METHOD:	Sonic		
LOGGED BY:	Kelly Moss			HOLE DIAMETER:	8 1/4"		
CREATED BY:	Stanley Krenz			DATE START:	10/14/19		
				DATE END:	10/16/19		

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
0	Sonic				SP	SP: 10YR(5/6) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains, trace silt, 20% fine sand, 60% medium sand, 20% coarse sand, moist, with a few roots and twigs	
						SP: 10YR(5/6) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains, 20% fine sand, 65% medium sand, 15% coarse sand, color lightens	
					SP		
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains, 15% fine sand, 65% medium sand, 20% coarse sand	
5	Sonic					No Recovery	Bentonite Seal 2" PVC
					SP	SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, 15% fine sand, 60% medium sand, 25% coarse sand, trace fine gravel, wet from drilling, uniform, few grass	
						SW: 10YR(5/4) POORLY SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, 10% fine sand, 50% medium sand, 20% coarse sand, 10% fine gravel, 10% coarse gravel, gravel range 10-20mm, 40mm max, fining upward	
10							



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW024

TOTAL DEPTH:

45'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SW	SW Continued: 10YR(5/4) POORLY SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, 10% fine sand, 50% medium sand, 20% coarse sand, 10% fine gravel, 10% coarse gravel, gravel range 10-20mm, 40mm max, fining upward	
					SP	SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 10% fine sand, 60% medium sand, 25% coarse sand, 5% fine gravel	
					SW	SW: 10YR(5/4) POORLY SORTED COARSE SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, 10% fine sand, 20% medium sand, 60% coarse sand, 10% fine gravel, trace coarse gravel, gravel range 10mm	
15	Sonic				SW	SW: 10YR(5/4) POORLY SORTED COARSE SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, 10% fine sand, 20% medium sand, 60% coarse sand, 10% fine gravel, fining downward	
					SW		Sand Pack
					SP	SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, 20% fine sand, 60% medium sand, 20% coarse sand, trace fine gravel, dense, wet, uniform	
20					SW	SW: 10YR(5/4) POORLY SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 10% fine sand, 30% medium sand, 50% coarse sand, 10% fine gravel, trace coarse gravel, moist to wet, max gravel 60mm	
							GAAF-MW024-19 (2" ID)
							Bentonite Seal


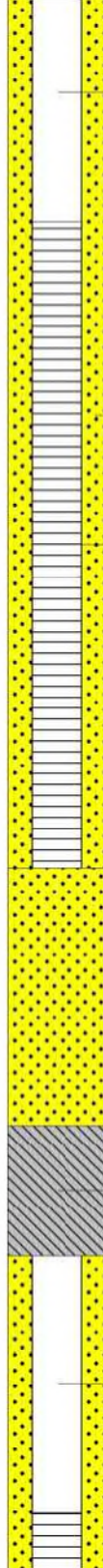

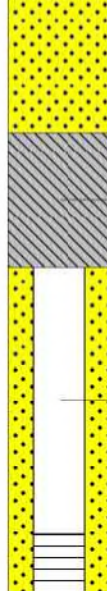
# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW024

TOTAL DEPTH:

45'


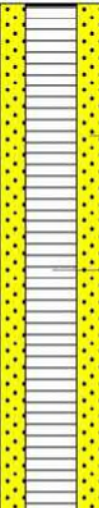


DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
25	Sonic				SW	SW Continued: 10YR(5/4) POORLY SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 10% fine sand, 30% medium sand, 45% coarse sand, 10% fine gravel, trace coarse gravel, moist to wet, max gravel 60mm	
					SP	SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, 20% fine sand, 70% medium sand, 10% coarse sand, trace fine gravel	
					SW	SW: 10YR(5/4) POORLY SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel. 10% fine sand, 35% medium sand, 45% coarse sand, 5% fine gravel, 5% coarse gravel, wet, max gravel 50mm	
					SW	SW: 10YR(5/4) POORLY SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, 20% fine sand, 50% medium sand, 25% coarse sand, trace fine gravel, 5% coarse gravel, wet, max gravel 35mm, uniform	
					SW	SW: 10YR(5/4) POORLY SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel. 15% fine sand, 40% medium sand, 35% coarse sand, 10% fine gravel, trace coarse gravel, dense, wet	
30	Sonic				SW	SW: 10YR(5/4) POORLY SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel. 15% fine sand, 40% medium sand, 35% coarse sand, 10% fine gravel, trace coarse gravel, dense, wet	
					SP	SP: 10YR(5/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 60% fine sand, 40% medium sand, dense, wet, uniform	



# FIELD BOREHOLE LOG

BOREHOLE NO:  
TOTAL DEPTH:

**GAAF-MW024**  
**45'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
35	Sonic				SP	SP: 10YR(5/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 60% fine sand, 40% medium sand, trace coarse sand, dense, wet, uniform	 <p>Sand Pack</p> <p>GAAF-MW024-39 (2" ID)</p>
38						SP: 10YR(5/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 50% fine sand, 40% medium sand, 10% coarse sand from 38-40 ft bgs 10YR(5/6) staining	
40	Sonic				CL	CH: 10YR(5/1) FAT CLAY, high plasticity, 90% clay, 10% silt, medium stiff, cohesive, with 5YR(5/4) mottling	
42						CH: 10YR(5/1) FAT CLAY, high plasticity, 90% clay, 10% silt, medium soft	
44						CH: 10YR(5/1) FAT CLAY, high plasticity, 90% clay, 10% silt, increasing softness with depth	
45							



# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF-MW025**  
TOTAL DEPTH: **40'**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Grayling Area PFAS			CONTRACTOR:	Mateco		
SITE LOCATION:	Grayling, MI			CREW CHIEF:	Jeff Croel		
PROJECT NO.:	60661441			DRILL RIG TYPE:	Geoprobe 8140DT		
PROJECT MANAGER:	Matt VanderEide			DRILLING METHOD:	Sonic		
LOGGED BY:	Kelly Moss			HOLE DIAMETER:	8 1/4"		
CREATED BY:	Stanley Krenz			DATE START:	10/10/19		
				DATE END:	10/11/19		

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
0	Sonic				SW	SW: 10YR(2/2) POORLY SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and sub angular gravel, 15% silt, 20% fine sand, 40% medium sand, 10% coarse sand, 15% fine gravel, loose, dry, gravel range 10mm, 25mm max, with trace twigs	
					SW	SW: 10YR(3/4) POORLY SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and sub angular gravel, trace clay, 20% silt, 20% fine sand, 50% medium sand, 5% coarse sand, 5% fine gravel, trace coarse gravel	
					SW	SW: 10YR(4/6) POORLY SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and sub angular gravel, 10% silt, 10% fine sand, 60% medium sand, 15% coarse sand, 5% fine gravel, trace coarse gravel	
					SW	SW: 10YR(5/6) POORLY SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and sub angular gravel, trace silt, 10% fine sand, 60% medium sand, 20% coarse sand, 10% fine gravel, trace coarse gravel, loose, dry, at 4 ft bgs 2 50mm cobble	
5	Sonic				SW	SW: 10YR(4/4) POORLY SORTED MEDIUM SAND TO COARSE SAND WITH GRAVEL, non plastic, sub rounded to sub angular sand grains and gravel, 5% fine sand, 40% medium sand, 30% coarse sand, 15% fine gravel, 10% coarse gravel, wet	Bentonite Seal 2" PVC
					SW	SW: 10YR(4/4) POORLY SORTED MEDIUM SAND TO COARSE SAND WITH GRAVEL, non plastic, sub rounded to sub angular sand grains and gravel, trace fine sand, 20% medium sand, 45% coarse sand, 25% fine gravel, 10% coarse gravel, gravel max 40mm	
					SP	SP: 10YR(4/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 60% medium sand, 30% coarse sand, trace fine gravel, loose, dry, uniform	
10							



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW025

TOTAL DEPTH:

40'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SW	SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and sub rounded gravel, 10% fine sand, 45% medium sand, 30% coarse sand, 15% fine gravel, loose, dry, uniform, wet, gravel range 10-20mm	
							11
							12
							13
							14
							Sand Pack
							GAAF-MW025-17 (2" ID)
15					SW	SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 40% medium sand, 35% coarse sand, 15% fine gravel, loose, dry, uniform, wet, gravel range 10-20mm	
							15
	Sonic				SW	SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 50% medium sand, 35% coarse sand, 5% fine gravel, wet, gravel range 5-10mm, 20mm max, coarsening downward	
							16
							17
							18
							19
					SW	SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 40% medium sand, 35% coarse sand, 15% fine gravel, trace coarse gravel	
							20
20					SW	SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 50% medium sand, 35% coarse sand, 5% fine gravel, at 22 ft bgs a 45mm pebble, fining upward	
							21
							22
							Bentonite Seal
							2" PVC

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW025

TOTAL DEPTH:

40'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
23	Sonic					SW: 10YR(5/3) POORLY SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded to sub angular sand grains and sub angular gravel, trace fine sand, 10% medium sand, 60% coarse sand, 25% fine gravel, 5% coarse gravel, at 23-23.5 ft bgs 7.5YR(5/8) iron staining, fining downward	Sand Pack
24					SW		
25					SW	SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 45% medium sand, 35% coarse sand, 10% fine gravel, trace coarse gravel	GAAF-MW025-26 (2" ID)
26					SW	SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, 10% fine sand, 50% medium sand, 35% coarse sand, 5% fine gravel, wet	
27	Sonic						
28					SW	SW: 10YR(5/3) POORLY SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded to sub angular sand grains and sub angular gravel, trace fine sand, 10% medium sand, 60% coarse sand, 25% fine gravel, 5% coarse gravel, gravel max 30mm	
29					SW	SW: 10YR(5/3) POORLY SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded to sub angular sand grains and sub angular gravel, trace fine sand, 10% medium sand, 60% coarse sand, 25% fine gravel, 5% coarse gravel, gravel max 30mm	Bentonite Seal
30					SW	SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and gravel, 20% fine sand, 50% medium sand, 25% coarse sand, 5% fine gravel, wet, fining downward	
31					SW	SW: 10YR(5/3) POORLY SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded to sub angular sand grains and sub angular gravel, 5% fine sand, 20% medium sand, 40% coarse sand, 25% fine gravel, 10% coarse gravel, with 2 100mm cobble	2" PVC
32					SW		
33	Sonic					SW: 10YR(5/2) POORLY SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and sub rounded gravel, 25% fine sand, 60% medium sand, 10% coarse sand, 5% coarse gravel, wet, gravel range 40-50mm, fining downward, sharp contact at 35 ft bgs	Sand Pack
34					SW		GAAF-MW025-35 (2" ID)






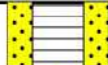


# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW025

TOTAL DEPTH:

40'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
35	Sonic						
					CH	CH: 10YR(5/2) FAT CLAY, high plasticity, 90% clay, 10% silt, medium stiff, at 36 ft and 39 ft bgs silt seam	
40							



# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF MW026**  
TOTAL DEPTH: **100'**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Grayling Area PFAS			CONTRACTOR:	Mateco		
SITE LOCATION:	Grayling, MI			CREW CHIEF:	Jeff Croel		
PROJECT NO.:	60661441			DRILL RIG TYPE:	Geoprobe 8140DT		
PROJECT MANAGER:	Matt VanderEide			DRILLING METHOD:	Sonic		
LOGGED BY:	Stanley Krenz			HOLE DIAMETER:	8 1/4"		
CREATED BY:	Stanley Krenz			DATE START:	1/20/20		
				DATE END:	1/23/20		

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
0	Sonic				SP	SP: 10YR(3/3) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and sub rounded gravel, 5% silt, 5% fine sand, 50% medium sand, 10% coarse sand, 10% fine gravel, 20% coarse gravel, loose, wet, gravel range 4-28mm	
					SP	SP: 10YR(4/6) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, trace silt, 10% fine sand, 30% medium sand, 10% coarse sand, trace fine gravel, loose, dry	
					SP	SP: 10YR(5/6) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains, 5% silt, 15% fine sand, 70% medium sand, 10% coarse sand, loose, dry	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains, 5% silt, 10% fine sand, 75% medium sand, 10% coarse sand, loose, dry	
5	Sonic					SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, trace coarse sand, loose, moist	
10							



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF MW026

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
						SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 70% medium sand, 15% coarse sand, 10% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-11mm	
					SP		11
						SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 55% medium sand, 30% coarse sand, 10% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-7mm, 50mm max	
					SP		12
						GP: 10YR(6/4) WELL SORTED FINE GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, trace medium sand, 30% coarse sand, 55% fine gravel, 15% coarse gravel, loose, wet, gravel range 4-48mm, 61mm max	
					GP		13
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 5% silt, 10% fine sand, 85% medium sand, trace coarse sand, loose, wet	
					SP		14
15						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 30% medium sand, 10% coarse sand, trace coarse gravel, loose, wet	
					SP		15
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 70% medium sand, 15% coarse sand, 10% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-20mm, at 18-18.2 ft bgs cobble	
					SP		16
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, trace coarse gravel, loose, wet	
					SP		17
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, loose, wet	
					SP		18
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 65% medium sand, 25% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-12mm, 18mm max	
					SP		19
20							20
							21
							22

GAAF-MW026-13.5  
(2" ID)

Sand Pack

Bentonite Chips

# FIELD BOREHOLE LOG

BOREHOLE NO:  
TOTAL DEPTH:

**GAAF MW026**  
**100'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	SP Continued: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 65% medium sand, 25% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-12mm, 18mm max	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 80% medium sand, 10% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-20mm	23
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 65% medium sand, 10% coarse sand, 10% fine gravel, 15% coarse gravel, loose, wet, gravel range 5-27mm, trace cobble	24
25						10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 75% medium sand, 15% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-10mm	25
						No Recovery	26
							27
							28
							29
30					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 5% fine sand, 70% medium sand, 10% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-35mm	30
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, loose, wet	31
						No Recovery	32
							33
							34



100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
35	Sonic					No Recovery Continued	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, 5% silt, 5% fine sand, 70% medium sand, 15% coarse sand, trace fine gravel, 5% coarse gravel, loose, wet, gravel range 5-8mm	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, 5% silt, 5% fine sand, 55% medium sand, 15% coarse sand, 15% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-9mm	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains, 5% silt, 5% fine sand, 75% medium sand, 15% coarse sand, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 50% medium sand, 30% coarse sand, 15% fine gravel, 5% coarse gravel, loose, wet, gravel range 4-14mm, 38mm max, with 10YR(6/8) mottling	
40	Sonic				SP		
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, trace fine gravel, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, trace coarse sand, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, trace silt, trace fine sand, 85% medium sand, 10% coarse sand, trace fine gravel, 5% coarse gravel, loose, wet, gravel range 7-12mm	
45						No Recovery	

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF MW026

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic					No Recovery	47
							48
							49
50							50
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, 5% silt, 5% fine sand, 80% medium sand, 10% coarse sand, trace fine gravel, trace coarse gravel, loose, wet	51
							52
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, 5% silt, 5% fine sand, 70% medium sand, 15% coarse sand, trace fine gravel, 5% coarse gravel, loose, wet, gravel range 5-17mm	53
							54
55					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains, 5% silt, 5% fine sand, 90% medium sand, trace coarse sand, loose, wet	55
							56
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, 5% silt, 5% fine sand, 80% medium sand, 10% coarse sand, trace fine gravel, loose, wet, gravel range 4-6mm	57
							58
							59

GAAF-MW026-50  
(2" ID)

Sand Pack



# FIELD BOREHOLE LOG

BOREHOLE NO:  
TOTAL DEPTH:

**GAAF MW026**  
**100'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
60	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 5% fine sand, 80% medium sand, 10% coarse sand, trace fine gravel, loose, wet, gravel range 10-22mm	
						No Recovery	Bentonite Chips
65	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 75% medium sand, 10% coarse sand, 5% fine gravel, 10% coarse gravel, loose, wet, gravel range 5-18mm	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 60% medium sand, 10% coarse sand, 10% fine gravel, 20% coarse gravel, loose, wet, gravel range 7-42mm, few cobble	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, trace fine gravel, loose, wet	1" PVC
70						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 85% medium sand, 5% coarse sand, loose, wet	

# FIELD BOREHOLE LOG

BOREHOLE NO:

**GAAF MW026**

TOTAL DEPTH:

**100'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
72	Sonic				SP	SP Continued: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 85% medium sand, 5% coarse sand, loose, wet	
73						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, trace fine gravel, trace coarse gravel, loose, wet	
74					SP		
75						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, trace fine gravel	
76					SP		
77	Sonic					SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace fine sand, 80% medium sand, 15% coarse sand, 5% fine gravel, loose, wet, gravel range 5-6mm	
78							
79					SP		
80						SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, 10% silt, trace fine sand, 45% medium sand, 25% coarse sand, 15% fine gravel, 5% coarse gravel, loose, wet, gravel range 4-12mm	
81							
82							
83	Sonic				SP		

GAAF-MW026-75  
(1" ID)

Sand Pack



# FIELD BOREHOLE LOG

BOREHOLE NO:  
TOTAL DEPTH:

**GAAF MW026**  
**100'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
84	Sonic				SP	SP Continued: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, 10% silt, trace fine sand, 45% medium sand, 25% coarse sand, 15% fine gravel, 5% coarse gravel, loose, saturated, gravel range 4-12mm	Bentonite Chips
85						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 5% fine sand, 80% medium sand, 10% coarse sand, trace fine gravel, trace coarse gravel, loose, wet, gravel range 4-7mm	
86							
87							
88	Sonic				SF-SM	SP-SM: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 15% silt, 10% fine sand, 65% medium sand, 10% coarse sand, loose, wet, color change to 10YR(6/3)	2" PVC
89							
90						SP-SM: 10YR(6/3) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, 15% silt, 10% fine sand, 55% medium sand, 20% coarse sand, trace fine gravel, trace coarse gravel, loose, wet, gravel range 4-8mm	
91							
92	Sonic				SF-SM		
93							
94						No Recovery	
95						SP: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 10% silt, 10% fine sand, 65% medium sand, 15% coarse sand, trace fine gravel, trace coarse gravel, loose, wet, gravel range 4-10mm	

BOREHOLE NO: **GAAF MW026**  
TOTAL DEPTH: **100'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	SP Continued: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 10% silt, 10% fine sand, 65% medium sand, 15% coarse sand, trace fine gravel, trace coarse gravel, loose, wet, gravel range 4-10mm	<div style="position: relative; height: 800px;"> <span style="position: absolute; top: 0; right: 0;">GAAF-MW026-100 (2" ID)</span> <!-- Vertical scale markings --> <div style="position: absolute; left: 0; bottom: 0; width: 10px; text-align: center;">100</div> <div style="position: absolute; left: 0; top: 0; width: 10px; text-align: center;">96</div> <div style="position: absolute; left: 0; top: 20%; width: 10px; text-align: center;">97</div> <div style="position: absolute; left: 0; top: 40%; width: 10px; text-align: center;">98</div> <div style="position: absolute; left: 0; top: 60%; width: 10px; text-align: center;">99</div> </div>





# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF-MW027**  
TOTAL DEPTH: **80'**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Grayling Area PFAS			CONTRACTOR:	Mateco		
SITE LOCATION:	Grayling, MI			CREW CHIEF:	Jeff Croel		
PROJECT NO.:	60661441			DRILL RIG TYPE:	Geoprobe 8140DT		
PROJECT MANAGER:	Matt VanderEide			DRILLING METHOD:	Sonic		
LOGGED BY:	Stanley Krenz			HOLE DIAMETER:	8 1/4"		
CREATED BY:	Stanley Krenz			DATE START:	1/14/20		
				DATE END:	1/17/20		

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
0	Sonic					10YR(3/3) TOPSOIL, non plastic, sub rounded sand grains and gravel, 20% silt, 20% fine sand, 60% medium sand, trace coarse sand, trace fine gravel, loose, moist, trace grass and roots	
					SP	SP: 10YR(3/6) WELL SORTED MEDIUM SAND, non plastic sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, loose, moist.	
					SP	SP: 10YR(4/6) WELL SORTED MEDIUM SAND, non plastic sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, loose, dry	
					SP	SP: 10YR(5/8) WELL SORTED MEDIUM SAND, non plastic sub rounded sand grains and gravel, trace silt, 10% fine sand, 80% medium sand, 10% coarse sand, trace fine gravel, trace coarse gravel, loose, dry	
					SP	SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic sub rounded sand grains, trace silt, trace fine sand, 80% medium sand, 20% coarse sand, loose, moist	
	Sonic					SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic sub rounded sand grains and gravel, trace silt, trace fine sand, 70% medium sand, 20% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet from 5 ft bgs, gravel range 5-11mm	Bentonite Seal
					SP		
5					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic sub rounded sand grains, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, loose, wet	2" PVC
	Sonic						
					SP	SP: 10YR(6/4) WELL SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 10% mediumsand, 55% coarse sand, 25% fine gravel, 10% coarse gravel, loose, wet, gravel range 4 to 38mm, few cobbles	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic sub rounded sand grains and gravel, 5% silt, 15% fine sand, 50% medium sand, 10% coarse sand, 10% fine gravel, 10% coarse gravel, loose, wet	
	Sonic						
					SP	SP: 10YR(6/4) WELL SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 20% medium sand, 50% coarse sand, 20% sub rounded fine gravel, 10% coarse gravel, loose, wet, gravel range 5 to 35mm, few cobbles	
10							

80'

[illegible]



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW027

TOTAL DEPTH:

80'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
23	Sonic					SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 60% medium sand, 15% coarse sand, 10% fine gravel, 15% coarse gravel, loose, wet, gravel range 5 to 31mm	
24					SP		
25						SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 55% medium sand, 15% coarse sand, 15% fine gravel, 15% coarse gravel, loose, wet, gravel range 5 to 48mm	
26							1" PVC
27	Sonic				SP		
28							
29							Sand Pack
30						SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 25% medium sand, 25% coarse sand, 35% fine gravel, 15% coarse gravel, loose, wet, gravel range 4 to 12mm	
31					SP		GAAF-MW027-32 (1" ID)
32						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 65% medium sand, 25% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 4 to 8mm, trace cobble	
33	Sonic				SP		
34						No Recovery	

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW027

TOTAL DEPTH:

80'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
35	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 50% medium sand, 20% coarse sand, 15% fine gravel, 15% coarse gravel, loose, wet, gravel range 4 to 6mm	
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 15% fine sand, 80% medium sand, trace coarse sand, trace coarse gravel, loose, wet, trace cobble	
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 10% fine sand, 70% medium sand, 10% coarse sand, 5% fine gravel, loose, wet, gravel range 4 to 5mm	Bentonite Seal
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 10% fine sand, 65% medium sand, 10% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 5 to 10mm	
40	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 10% fine sand, 70% medium sand, 10% coarse sand, 5% fine gravel, loose, wet, gravel range 4 to 5mm	2" PVC
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 10% fine sand, 65% medium sand, 10% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 5 to 10mm	
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 10% fine sand, 70% medium sand, 10% coarse sand, 5% fine gravel, loose, wet, gravel range 4 to 5mm	Sand Pack
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 10% fine sand, 70% medium sand, 15% coarse sand, trace coarse gravel, loose, wet	
45	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 10% fine sand, 70% medium sand, 15% coarse sand, trace coarse gravel, loose, wet	GAAF-MW027-47 (2" ID)
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 10% fine sand, 70% medium sand, 15% coarse sand, trace coarse gravel, loose, wet	



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW027

TOTAL DEPTH:

80'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	grains, 5% silt, 10% fine sand, 85% medium sand, loose, wet, at 47.9 to 48 ft bgs coarse sand seam	47
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 55% medium sand, 35% coarse sand, 10% fine gravel, loose, wet, gravel range 5 to 8mm	48
					SP	SP: 10YR(6/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 15% silt, 30% fine sand, 55% medium sand, trace fine gravel, trace coarse gravel, medium dense, wet, gravel range 6 to 13mm	49
50					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 10% silt, 10% fine sand, 80% medium sand, trace coarse sand, trace fine gravel, trace coarse gravel, loose, wet	50
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 10% silt, 10% fine sand, 80% medium sand, trace coarse sand, loose, wet, with 10YR(6/1) mottling throughout	51
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 10% silt, 25% fine sand, 55% medium sand, 10% coarse sand, trace fine gravel, trace coarse gravel, loose, wet, gravel range 4 to 9mm	52
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 90% medium sand, trace coarse sand, trace fine gravel, trace coarse gravel, loose, wet	53
55					SP	SP: 10YR(6/4) WELL SORTED COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 40% medium sand, 40% coarse sand, 10% fine gravel, 10% coarse gravel, loose, wet, gravel range 5 to 50mm, trace cobble	54
	Sonic				SP	ML: 10YR(6/4) WELL SORTED SILT AND SAND, non plastic, sub rounded sand grains and gravel, 35% silt, 25% fine sand, 30% medium sand, trace coarse sand, 5% fine gravel, 5% coarse gravel, medium stiff to stiff, wet, gravel range 5 to 32mm,	55
							56
							57
							58
							59

Bentonite Seal

1" PVC

Sand Pack

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW027

TOTAL DEPTH:

80'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
60	Sonic			ML	ML	trace cobble	GAAF-MW027-62 (1" ID)
				GW	GW	GW: 10YR(6/4) WELL SORTED COARSE GRAVEL, non plastic, sub rounded to sub angular gravel, 100% coarse gravel, loose, wet, gravel range 15 to 80mm	
				SP	SP	SP: 10YR(6/4) WELL SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, 10% silt, trace fine sand, 20% medium sand, 30% coarse sand, 35% fine gravel, 5% coarse gravel, loose, wet, gravel range 4 to 20mm, trace cobble	
				SP	SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 45% medium sand, 45% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 4 to 8mm, trace cobble	
				SP	SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, loose, wet	
65	Sonic					No Recovery	Bentonite Seal
70				SP	SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 10% silt, 10% fine sand, 70% medium sand, 10% coarse sand, loose, wet	2" PVC



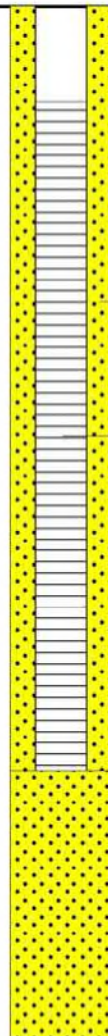
# FIELD BOREHOLE LOG

BOREHOLE NO:

**GAAF-MW027**

TOTAL DEPTH:

**80'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
72	Sonic				SP	SP: 10YR(6/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, 15% silt, 25% fine sand, 60% medium sand, loose, wet	 <p>Sand Pack</p> <p>GAAF-MW027-77 (2" ID)</p>
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 10% fine sand, 65% medium sand, 20% coarse sand, trace fine gravel, loose, wet, from 73.3 to 73.6 coarse sand seam	
					SP		
75	Sonic					SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, trace coarse gravel, loose, wet	
SP							
80							



# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF-MW028**  
TOTAL DEPTH: **100'**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Grayling Area PFAS			CONTRACTOR:	Mateco		
SITE LOCATION:	Grayling, MI			CREW CHIEF:	Jeff Croel		
PROJECT NO.:	60661441			DRILL RIG TYPE:	Geoprobe 8140DT		
PROJECT MANAGER:	Matt VanderEide			DRILLING METHOD:	Sonic		
LOGGED BY:	Stanley Krenz			HOLE DIAMETER:	8 1/4"		
CREATED BY:	Stanley Krenz			DATE START:	12/20/19		
				DATE END:	1/7/20		

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
0	Hand Auger					10YR(3/6) TOPSOIL, non plastic, sub rounded sand grains and gravel, 10% silt, 30% fine sand, 60% medium sand, trace coarse sand, trace fine gravel, trace coarse gravel, loose, dry, with trace grass and roots	0
					SP	SP: 10YR(5/8) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 15% silt, 25% fine sand, 50% medium sand, 10% coarse sand, loose, dry	
					SP	SP: 10YR(6/8) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 10% silt, 20% fine sand, 70% medium sand, trace coarse sand, trace fine gravel, loose, dry	-1
					SP	SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 10% silt, 10% fine sand, 80% medium sand, loose, dry	-2
	Sonic						-3
					SP	SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 10% silt, 10% fine sand, 80% medium sand, trace coarse sand, trace fine gravel, trace coarse gravel, loose, moist	-4
5					SP	SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, 5% silt, 10% fine sand, 75% medium sand, trace coarse sand, 10% fine gravel, trace coarse gravel, loose, moist, gravel range 5-7mm	-5
					SP	SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 15% silt, 25% fine sand, 60% medium sand, medium dense, moist	-6
							-7
					SP	SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 25% fine sand, 70% medium sand, trace coarse sand, trace coarse gravel, loose, moist	-8
					SP		-9
10							-10

Bentonite Seal

2" PVC



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW028

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
						SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains, trace silt, 20% fine sand, 80% medium sand, trace coarse sand, loose, moist	
					SP		
						SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, trace silt, 10% fine sand, 75% medium sand, 10% coarse sand, 5% fine gravel, trace coarse gravel, loose, moist, gravel range 5-8mm, 15mm max	
					SP		
						SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains, trace silt, 10% fine sand, 85% medium sand, 5% coarse sand, loose, moist to wet	
					SP		
15						SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, 5% silt, 10% fine sand, 75% medium sand, 10% coarse sand, trace fine gravel, loose, wet	
					SP		
						SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, trace silt, trace fine sand, 60% medium sand, 20% coarse sand, 20% fine gravel, trace coarse gravel, loose, wet, gravel range 4-8mm	
					SP		
						SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, trace silt, 10% fine sand, 90% medium sand, trace coarse sand, trace fine gravel, trace coarse gravel, loose, wet	
					SP		
20						SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, trace silt, trace fine sand, 80% medium sand, 15% coarse sand, 5% fine gravel, loose, wet, gravel range 4-5mm	
					SP		
						SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand	

Sand Pack

GAAF-MW028-19  
(2" ID)

BOREHOLE NO: **GAAF-MW028**  
TOTAL DEPTH: **100'**

Page 3 of 9



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW028

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
35	Sonic				SP	SP: 10YR(6/6) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 70% medium sand, 25% coarse sand, 5% fine gravel, loose, wet, gravel range 5-7mm	<div> <div>Sand Pack</div> <div>GAAF-MW028-39 (1" ID)</div> </div>
						SP: 10YR(6/6) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 55% medium sand, 30% coarse sand, 15% fine gravel, loose, wet, gravel range 5-10mm	
						No Recovery	
40	Sonic				SP	SP: 10YR(6/6) WELL SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 25% medium sand, 30% coarse sand, 25% fine gravel, 20% coarse gravel, loose, wet, gravel range 5-17mm	<div> <div>Bentonite Seal</div> <div>2" PVC</div> </div>
						SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 70% medium sand, 20% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet	
						SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 90% medium sand, trace coarse sand, trace coarse gravel, loose, wet	
45						SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand	Sand Pack

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW028

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	grains and gravel, trace silt, 10% fine sand, 80% medium sand, 10% coarse sand, trace fine gravel, loose, wet	47
						No Recovery	48
							49
50							50
	Sonic				SP	SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 5% fine sand, 85% medium sand, 10% coarse sand, trace fine gravel, loose, wet	51
							52
					SP	SP: 10YR(6/6) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 80% medium sand, 10% coarse sand, 10% fine gravel, loose, wet, gravel range 4 to 16mm	53
							54
55						No Recovery	55
							56
	Sonic						57
							58
							59

GAAF-MW028-50  
(2" ID)

Bentonite Seal



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW028

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
60	Sonic					No Recovery	
60						SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, trace fine gravel, loose, wet	
					SP		
						SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, trace fine gravel, trace coarse gravel, loose, wet, trace cobble	
					SP		1" PVC
65	Sonic					No Recovery	
							Sand Pack
							GAAF-MW028-70 (1" ID)
70						SP: 10YR(6/3) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 65% medium sand, 25% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 6-19mm	

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW028

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
					SP	SP Continued: 10YR(6/3) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 65% medium sand, 25% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 6-19mm	
	Sonic						
					SP	SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 80% medium sand, 10% coarse sand, trace fine gravel, trace coarse gravel, loose, wet	
					SP	SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 5% fine sand, 95% medium sand, trace coarse sand, trace fine gravel, trace coarse gravel, loose, wet	
75							
	Sonic						
					SP	SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 80% medium sand, 20% coarse sand, trace fine gravel, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 95% medium sand, 5% coarse sand, loose, wet	
80							
	Sonic						
					SP	SM: 10YR(6/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, 15% silt, 25% fine sand, 60% medium sand, loose, wet	

Bentonite Seal



# FIELD BOREHOLE LOG

BOREHOLE NO:




GAAF-MW028

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
84	Sonic			SM	SM	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 75% medium sand, 25% coarse sand, loose, wet	2" PVC
85				SP	SP	SP: 10YR(6/1) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 10% silt, 20% fine sand, 70% medium sand, loose, wet, color change to 10YR(6/1)	
86				SP	SP		
87				SM	SM	SM: 10YR(6/1) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, 20% silt, 30% fine sand, 50% medium sand, loose, wet	
88	Sonic			SP	SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 15% fine sand, 75% medium sand, 10% coarse sand, loose, wet	Sand Pack
89				SP	SP		
90				SP	SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, loose, wet	
91				SP	SP		
92	Sonic			SP	SP	SP: 10YR(6/6) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, trace fine gravel, trace coarse gravel, loose, wet	GAAF-MW028-90 (2" ID)
93				SP	SP		
94				SP	SP		
95						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, loose, wet, with 10YR(6/1) mottling	

BOREHOLE NO: **GAAF-MW028**  
TOTAL DEPTH: **100'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	SP Continued: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, loose, wet, with 10YR(6/1) mottling	-96
							-97
							-98
							-99
100							100





# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF-MW029**  
TOTAL DEPTH: **85'**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Grayling Area PFAS			CONTRACTOR:	Mateco		
SITE LOCATION:	Grayling, MI			CREW CHIEF:	Jeff Croel		
PROJECT NO.:	60661441			DRILL RIG TYPE:	Geoprobe 8140DT		
PROJECT MANAGER:	Matt VanderEide			DRILLING METHOD:	Sonic		
LOGGED BY:	Stanley Krenz			HOLE DIAMETER:	8 1/4"		
CREATED BY:	Stanley Krenz			DATE START:	12/12/19		
				DATE END:	12/19/19		

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
0	Hand Auger					10YR(3/4) TOPSOIL, non plastic, sub rounded sand grains, 20% silt, 25% fine sand, 55% medium sand, loose, dry, trace roots	0
					SP	SP: 10YR(4/6) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, 10% silt, 40% fine sand, 50% medium sand, loose, dry	
					SM	SM: 10YR(5/6) WELL SORTED SILTY SAND, non plastic, sub rounded sand grains, 35% silt, 30% fine sand, 35% medium sand, loose, moist	1
					SP	SP: 10YR(5/8) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 15% silt, 10% fine sand, 75% medium sand, trace coarse sand, trace fine gravel, trace coarse gravel, loose, moist	2
5	Sonic				SP	SP: 10YR(5/6) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, 15% silt, 55% fine sand, 30% medium sand, trace fine gravel, medium dense, moist	3
					SP	SP: 10YR(5/6) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, 15% silt, 55% fine sand, 30% medium sand, trace fine gravel, medium dense, moist	4
					SP	SP: 10YR(5/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 10% silt, 30% fine sand, 60% medium sand, trace fine gravel, trace coarse gravel, medium dense, moist, gravel range 6-11mm	5
					SP	SP: 10YR(5/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 60% medium sand, 10% coarse sand, 10% fine gravel, 10% coarse gravel, loose, dry, gravel range 8-31mm, 72mm max, trace cobble	6
10							7
							8
							9
							10

Bentonite Seal

2" PVC

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW029

TOTAL DEPTH:

85'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	SP: 10YR(5/6) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, 10% silt, 10% fine sand, 80% medium sand, trace fine gravel, medium dense, moist	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and gravel, trace silt, 10% fine sand, 90% medium sand, trace fine gravel, loose, moist	11
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 70% medium sand, 30% coarse sand, trace fine gravel, trace coarse gravel, loose, wet, gravel range 4-8mm, at 13.9 to 14 ft bgs coarse sand seam	12 13 14
15					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains, trace silt, trace fine sand, 80% medium sand, 20% coarse sand, loose, wet	15 16
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 40% medium sand, 20% coarse sand, 30% fine gravel, 10% coarse gravel, loose, wet, gravel range 4-12mm	17
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 75% medium sand, 15% coarse sand, 10% fine gravel, trace coarse gravel, loose, wet, gravel range 5-7mm	18
						No Recovery	19
20					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains and sub rounded to sub angular sand grains, trace silt, 10% fine sand, 80% medium sand, 10% coarse sand, trace fine gravel, trace coarse gravel, loose, wet	20 21
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic. sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, loose, wet	22

Sand Pack

GAAF-MW029-18  
(2" ID)



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW029

TOTAL DEPTH:

85'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	SP Continued: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 40% medium sand, 45% coarse sand, 10% fine gravel, 5% coarse gravel, loose, wet, gravel range 4-25mm	23
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, loose, wet	24
25					SP		25
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 10% fine sand, 60% medium sand, 20% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 4-8mm	26
	Sonic				SP	SP: 10YR(6/4) WELL SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 30% medium sand, 45% coarse sand, 15% fine gravel, 10% coarse gravel, loose, wet, gravel range 6-23mm	27
					SP		28
						No Recovery	29
30							30
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 65% medium sand, 35% coarse sand, trace fine gravel, loose, wet	31
					ML	ML: 10YR(6/4) WELL SORTED SILT, non plastic, sub rounded sand grains, 70% silt, 30% fine sand, loose, wet	32
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 15% fine sand, 85% medium sand, loose, wet	33
							34

Bentonite Seal

1" PVC

Sand Pack

GAAF-MW029-33  
(1" ID)

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW029

TOTAL DEPTH:

85'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
35	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, trace coarse sand, loose, wet	
36							
37	Sonic					No Recovery	Bentonite Seal
38							
40	Sonic				SP	SP: 10YR(6/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, 10% silt, 50% fine sand, 40% medium sand, loose, wet	
41						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 10% silt, 30% fine sand, 60% medium sand, loose, wet	
42	Sonic					No Recovery	2" PVC
43							
44	Sonic						Sand Pack
45						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 25% fine sand, 75% medium sand, loose, wet	
46	Sonic				SP		GAAF-MW029-48 (2" ID)



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW029

TOTAL DEPTH:

85'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
47	Sonic					SP Continued: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 25% fine sand, 75% medium sand, loose, wet	
48						SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains, trace silt, trace fine sand, 70% medium sand, 15% coarse sand, 5% sub rounded fine gravel, 10% coarse gravel, loose, wet, gravel range 6-40mm, at 48.2 to 48.3 ft bgs a coarse gravel seam	
49					SP		
50					GP	GP: 10YR(6/4) WELL SORTED GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, trace medium sand, trace coarse sand, 55% fine gravel, 45% coarse gravel, loose, wet, gravel range 5-38mm, trace cobble	
51					SP	SP: 10YR(6/4) WELL SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 10% medium sand, 15% coarse sand, 55% fine gravel, 20% coarse gravel, loose, wet, gravel range 4-12mm	
52					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 30% medium sand, 40% coarse sand, 25% fine gravel, 5% coarse gravel, loose, wet, gravel range 4-7mm	
53					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 15% medium sand, 30% coarse sand, 35% fine gravel, 20% coarse gravel, loose, wet, gravel range 6-27mm	Bentonite Seal
54							
55					GP	GP: 10YR(6/4) WELL SORTED GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 15% medium sand, 20% coarse sand, 55% fine gravel, 10% coarse gravel, loose, wet, gravel range 4-40mm	
56							
57							1" PVC
58					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, 5% silt, 5% fine sand, 65% medium sand, 10% coarse sand, 15% fine gravel, trace coarse gravel, loose, wet, gravel range 4-15mm, 20mm max	
59							

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW029

TOTAL DEPTH:

85'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
60	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, 5% silt, 10% fine sand, 85% medium sand, trace coarse sand, trace fine gravel, trace coarse gravel, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 55% medium sand, 15% coarse sand, 25% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-16mm, trace cobble, at 61.5 to 61.7 ft bgs a small gravel seam	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 70% medium sand, 15% coarse sand, 10% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-27mm	
65	Sonic					No Recovery	
70	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 45% medium sand, 30% coarse sand, 20% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-24mm	



# FIELD BOREHOLE LOG

BOREHOLE NO:  
TOTAL DEPTH:

**GAAF-MW029**  
**85'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
72	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 55% medium sand, 35% coarse sand, 10% fine gravel, loose, wet, gravel range 4-6mm	
						SP: 10YR(6/4) WELL SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 15% medium sand, 30% coarse sand, 25% fine gravel, 30% coarse gravel, loose, wet, gravel range 4-30mm	
						No Recovery	
75	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 80% medium sand, 10% coarse sand, trace fine gravel, trace coarse gravel, loose, wet	
80	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 50% medium sand, 40% coarse sand, trace fine gravel, trace coarse gravel, loose, wet, gravel range 12-40mm	
83	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 5% fine sand, 90% medium sand, 5% coarse sand, trace fine gravel, loose, wet	

# FIELD BOREHOLE LOG

BOREHOLE NO:

**GAAF-MW029**

TOTAL DEPTH:

**85'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
85					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 45% medium sand, 40% coarse sand, 5% fine gravel, loose, wet	84
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 5% fine sand, 90% medium sand, 5% coarse sand, trace fine gravel, loose, wet	85





# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF-MW030**  
TOTAL DEPTH: **45'**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Grayling Area PFAS			CONTRACTOR:	Mateco		
SITE LOCATION:	Grayling, MI			CREW CHIEF:	Jeff Croel		
PROJECT NO.:	60661441			DRILL RIG TYPE:	Geoprobe 8140DT		
PROJECT MANAGER:	Matt VanderEide			DRILLING METHOD:	Sonic		
LOGGED BY:	Stanley Krenz			HOLE DIAMETER:	8 1/4"		
CREATED BY:	Stanley Krenz			DATE START:	12/10/19		
				DATE END:	12/12/19		

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
0	Hand Auger					10YR(3/3) TOPSOIL, non plastic, sub rounded sand grains and gravel, 10% silt, 50% fine sand, 40% medium sand, trace fine gravel, trace coarse gravel, loose, dry, with trace roots	0
					SP	SP: 10YR(5/8) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 15% silt, 25% fine sand, 60% medium sand, loose, dry	-1
					SP	SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 10% silt, 30% fine sand, 60% medium sand, loose, dry	-2
					SP	SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 10% silt, 20% fine sand, 60% medium sand, 5% fine gravel, 5% coarse gravel, loose, moist, gravel range 8-35mm	-3
5	Sonic				SP	SP: 10YR(5/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 70% medium sand, 15% coarse sand, 10% fine gravel, 5% coarse gravel, loose, moist, gravel range 5-10mm	-4
					SP	SP: 10YR(5/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 15% fine sand, 80% medium sand, trace coarse sand, 5% fine gravel, trace coarse gravel, loose, moist, gravel range 5-7mm, at 7.9 to 8 ft bgs small gravel seam ranging 2-3mm	-5
					SP		-6
					SP	SP: 10YR(5/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 5% fine sand, 80% medium sand, 15% coarse sand, trace fine gravel, loose, moist	-7
10							-8
							-9
							-10

Bentonite Seal

1" PVC

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW030

TOTAL DEPTH:

45'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	SP: 10YR(5/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 50% medium sand, 20% coarse sand, 30% fine gravel, trace coarse gravel, loose, wet, gravel range 4-6mm	11 12 13 14 15 16 17 18 19 20 21 22
						No Recovery	Sand Pack GAAF-MW030-15 (1" ID)
15	Sonic				SP	SP: 10YR(5/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 35% medium sand, 15% coarse sand, 30% fine gravel, 20% coarse gravel, loose, wet, gravel range 5-28mm, 36mm max	
					SP	SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 15% fine sand, 35% medium sand, trace coarse gravel, loose, wet	Bentonite Seal
					SP	SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 90% medium sand, trace coarse sand, trace fine gravel, trace coarse gravel, loose, wet	2" PVC Sand Pack



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW030

TOTAL DEPTH:

45'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
23	Sonic					SP Continued: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 90% medium sand, trace coarse sand, trace fine gravel, trace coarse gravel, loose, wet	GAAF-MW030-25 (2" ID)
24					SP	SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 20% fine sand, 80% medium sand, trace coarse sand, loose, wet	
25						SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, trace coarse sand, loose, wet	
26					SP		
27	Sonic					SP: 10YR(5/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 75% medium sand, 25% coarse sand, trace fine gravel, loose, wet	Bentonite Seal
28					SP		
29						SP: 10YR(5/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 65% medium sand, 20% coarse sand, 15% fine gravel, trace coarse gravel, loose, wet, gravel range 6-7mm	1" PVC
30					SP		
31						SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 80% medium sand, 20% coarse sand, loose, wet	Sand Pack
32					SP		
33					SP	SP: 10YR(5/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 45% medium sand, 35% coarse sand, 15% fine gravel, 5% coarse gravel, loose, wet, gravel range 6-20mm	GAAF-MW030-35 (1" ID)
34	Sonic				SP	SP: 10YR(5/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 65% medium sand, 35% coarse sand, trace fine gravel, loose, wet	

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW030

TOTAL DEPTH:

45'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
35	Sonic				SP	SP: 10YR(5/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, trace fine gravel, loose, wet, at 36 ft bgs a small 5cm gravel seam	35
					SP	SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, trace coarse sand, loose, wet	36
					SP	SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, trace fine gravel, trace coarse gravel, loose, wet, gravel range 6-8mm	37
					SP	SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, loose, wet	38
40	Sonic				SP	SP: 10YR(5/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 40% medium sand, 35% coarse sand, 10% fine gravel, 15% coarse gravel, loose, wet, gravel range 6 to 33mm	40
					SP	SP: 10YR(5/4) WELL SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 15% medium sand, 55% coarse sand, 10% fine gravel, 20% coarse gravel, loose, wet, at 44 to 44.2 ft bgs a seam of coarse gravel ranging 22-56mm	41
45					SP		42

Bentonite Seal

2" PVC

Sand Pack

GAAF-MW030-45  
(2" ID)





# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF-MW031**  
TOTAL DEPTH: **90'**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Grayling Area PFAS			CONTRACTOR:	Mateco		
SITE LOCATION:	Grayling, MI			CREW CHIEF:	Jeff Croel		
PROJECT NO.:	60661441			DRILL RIG TYPE:	Geoprobe 8140DT		
PROJECT MANAGER:	Matt VanderEide			DRILLING METHOD:	Sonic		
LOGGED BY:	Stanley Krenz			HOLE DIAMETER:	8 1/4"		
CREATED BY:	Stanley Krenz			DATE START:	11/7/19		
				DATE END:	11/15/19		

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
0	Hand Auger					10YR(3/2) TOPSOIL, non plastic, sub rounded sand grains, 10% silt, 30% fine sand, 60% medium sand, loose, moist, with organics, trace roots	0
					SP-SM	SP-SM: 10YR(5/4) WELL SORTED MEDIUM SAND WITH SILT, non plastic, sub rounded sand grains, 10% silt, 10% fine sand, 80% medium sand, trace coarse sand, loose, moist	1
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 20% fine sand, 80% medium sand, trace coarse sand, trace fine gravel, loose, moist, gravel range 4-5mm	2
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, 20% fine sand, 50% medium sand, 20% coarse sand, 10% fine gravel, trace coarse gravel, loose, moist, gravel range 8-14mm	4
5	Sonic				SW	SW: 10YR(6/4) POORLY SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains, trace silt, trace fine sand, 60% medium sand, 20% coarse sand, 10% fine gravel, 10% coarse gravel, loose, wet, gravel range 13 to 37mm	5
					CH	CH: 10YR(6/1) FAT CLAY, high plasticity, 90% clay, 10% silt, moist, soft	7
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 75% medium sand, 15% coarse sand, loose, wet	9
10							10

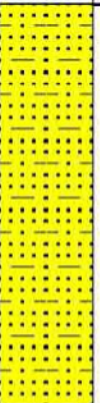
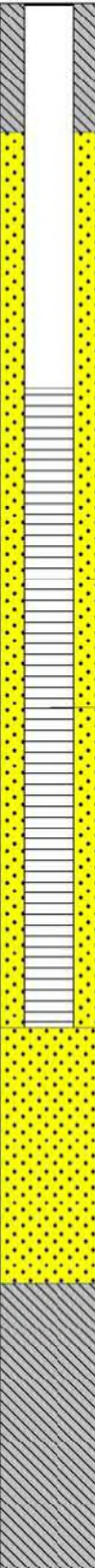

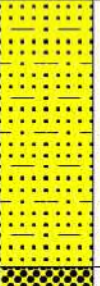

Bentonite Seal

2" PVC

# FIELD BOREHOLE LOG

BOREHOLE NO:  
TOTAL DEPTH:

**GAAF-MW031**  
**90'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP-SM	SP-SM: 10YR(6/4) WELL SORTED FINE TO MEDIUM SAND WITH SILT, non plastic, sub rounded sand grains, 10% silt, 60% fine sand, 30% medium sand, trace coarse sand, loose, wet	
						No Recovery	
15	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 25% fine sand, 75% medium sand, trace coarse sand, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, 5% fine sand, 60% medium sand, 35% coarse sand, trace fine gravel, trace coarse gravel, loose, wet, coarse gravel range 12 to 28mm	
20					SF-SM	SP-SM: 10YR(6/4) WELL SORTED FINE TO MEDIUM SAND WITH SILT, non plastic, sub rounded sand grains, 10% silt, 60% fine sand, 30% medium sand, trace coarse sand, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, 5% silt, 35% fine sand, 35% medium sand, 20%	



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW031

TOTAL DEPTH:

90'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	coarse sand, 5% fine gravel, trace coarse gravel, loose, wet, gravel range 4-8mm	
					SW	SW: 10YR(6/4) POORLY SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 15% medium sand, 40% coarse sand, 40% fine gravel, 5% coarse gravel, loose, wet, gravel range 4-12mm, trace cobble	23
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 20% fine sand, 70% medium sand, 5% coarse sand, trace fine gravel, loose, wet	24
25							
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 15% fine sand, 80% medium sand, trace coarse sand, trace fine gravel, trace coarse gravel, loose, wet, gravel range 8-25mm	25
							26
							27
	Sonic				SP		28
							29
30							
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 5% silt, 30% fine sand, 65% medium sand, loose, wet	30
							31
					SP		32
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 20% fine sand, 75% medium sand, trace coarse sand, trace fine gravel, loose, wet, gravel range 5-7mm	33
							34

Bentonite Seal

1" PVC

Sand Pack

GAAF-MW031-32  
(1" ID)

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW031

TOTAL DEPTH:

90'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
35	Sonic					SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 5% silt, 20% fine sand, 75% medium sand, trace coarse sand, loose, wet	
					SP		
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 50% medium sand, 20% coarse sand, 10% fine gravel, 10% coarse gravel, loose, wet, gravel range 6-15mm	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 20% fine sand, 80% medium sand, trace coarse sand, loose, wet	
	Sonic						Bentonite Seal
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 60% medium sand, 30% coarse sand, trace fine gravel, loose, wet	
40						SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH SILT, non plastic, sub rounded sand grains and gravel, 10% silt, 10% fine sand, 70% medium sand, 10% coarse sand, trace fine gravel, loose, wet	
					SP		
						No Recovery	2" PVC
45						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, trace fine gravel, loose, wet	Sand Pack
					SP		



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW031

TOTAL DEPTH:

90'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 60% medium sand, 30% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 4-10mm	47
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, 50% medium sand, 30% coarse sand, 10% fine gravel, 10% coarse gravel, loose, wet, gravel range 8-21mm	48
							49
50						No Recovery	50
	Sonic						51
							52
							53
							54
55					GW	GW: 10YR(6/4) POORLY SORTED COARSE GRAVEL, non plastic, sub rounded sand grains and gravel, 20% medium sand, trace coarse sand, 40% fine gravel, 40% coarse gravel, loose, wet, gravel range 10-40mm	55
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 20% fine sand, 80% medium sand, loose, wet, uniform	56
	Sonic						57
							58
							59

GAAF-MW031-50  
(2" ID)

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW031

TOTAL DEPTH:

90'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
60	Sonic					SP Continued: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 20% fine sand, 80% medium sand, loose, wet, uniform	
						No Recovery	Bentonite Seal
65	Sonic				SP	SP: 10YR(5/2) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, 60% medium sand, 40% coarse sand, trace fine gravel, loose, wet	
							1" PVC
70						SP: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, trace fine gravel, loose, wet, uniform	



# FIELD BOREHOLE LOG

BOREHOLE NO:

**GAAF-MW031**

TOTAL DEPTH:

**90'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
72	Sonic				SP	SP Continued: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, trace fine gravel, loose, wet, uniform	Sand Pack
73							GAAF-MW031-75 (1" ID)
74							
75	Sonic				SP	SP: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded grain, trace silt, 10% fine sand, 85% medium sand, 5% coarse sand, trace sub rounded fine gravel, loose, wet, gravel range 4 to 7mm	
76							
77	Sonic				SP	SP: 10YR(6/3) WELL SORTED MEDIUM SAND WITH COARSE GRAVEL, non plastic, sub rounded grain, trace silt, trace fine sand, 75% medium sand, 10% coarse sand, 5% sub rounded fine gravel, 10% coarse gravel. Loose, wet, gravel range 19-35mm.	
78							Bentonite Seal
79					SP	SP: 10YR(6/3) WELL SORTED FINE TO MEDIUM SAND WITH SILT, non plastic, sub rounded sand grains, 10% silt, 35% fine sand, 50% medium sand, 5% coarse sand, loose, wet	
80						No Recovery	
81							2" PVC
82	Sonic						
83							

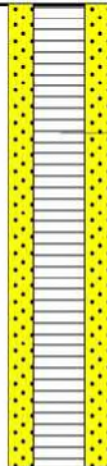
# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW031

TOTAL DEPTH:

90'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
85	Sonic					No Recovery	 <p>GAAF-MW031-87 (2" ID)</p>
				GP		GP: 10YR(6/3) WELL SORTED FINE GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 20% medium sand, 25% coarse sand, 55% fine gravel, loose, wet, gravel range 4-5mm	
				GP		GP: 10YR(6/3) WELL SORTED FINE GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, trace medium sand, 20% coarse sand, 70% fine gravel, 10% coarse gravel, loose, wet, gravel range 5-10mm	
90				SP		SP: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, trace fine gravel, loose, wet	





# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF-MW032**  
TOTAL DEPTH: **75'**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Grayling Area PFAS			CONTRACTOR:	Mateco		
SITE LOCATION:	Grayling, MI			CREW CHIEF:	Jeff Croel		
PROJECT NO.:	60661441			DRILL RIG TYPE:	Geoprobe 8140DT		
PROJECT MANAGER:	Matt VanderEide			DRILLING METHOD:	Sonic		
LOGGED BY:	Stanley Krenz			HOLE DIAMETER:	8 1/4"		
CREATED BY:	Stanley Krenz			DATE START:	1/9/20		
				DATE END:	1/13/20		

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
0	Hand Auger					10YR(3/3) TOPSOIL, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, loose, dry, trace grass and roots	0
						SP: 10YR(3/6) WELL SORTED MEDIUM SAND WITH SILT, non plastic, sub rounded sand grains, 10% silt, 10% fine sand, 80% medium sand, loose, dry	-1
					SP		-2
	Sonic					SP: 10YR(6/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 5% silt, 10% fine sand, 85% medium sand, loose, dry	-3
					SP		-4
5						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 15% fine sand, 85% medium sand, loose, moist	5
					SP		6
					SP-SM	SP-SM: 10YR(6/4) WELL SORTED FINE TO MEDIUM SAND WITH SILT, non plastic, sub rounded sand grains, 10% silt, 30% fine sand, 60% medium sand, loose, moist	7
						No Recovery	-8
10							-9
							-10

# FIELD BOREHOLE LOG

BOREHOLE NO:  
TOTAL DEPTH:

**GAAF-MW032**  
**75'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
						SP-SM: 10YR(6/4) WELL SORTED MEDIUM SAND WITH SILT, non plastic, sub rounded sand grains and gravel, 10% silt, 10% fine sand, 65% medium sand, 10% coarse sand, trace fine gravel, 5% coarse gravel, loose, wet, gravel range 5-13mm	
					SF-SM		11
						SP-SM: 10YR(6/4) WELL SORTED MEDIUM SAND WITH SILT, non plastic, sub rounded sand grains, 10% silt, 15% fine sand, 75% medium sand, trace coarse sand, loose, wet	
					SF-SM		12
							13
						No Recovery	14
15						SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 50% medium sand, 15% coarse sand, 25% fine gravel, 10% coarse gravel, loose, wet, gravel range 5-10mm	
					SP		15
						SP: 10YR(6/4) WELL SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 35% medium sand, 30% coarse sand, 30% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-7mm	
					SP		16
						SM: 10YR(6/4) WELL SORTED SILTY FINE SAND, non plastic, sub rounded sand grains, 15% silt, 75% fine sand, 10% medium sand, loose, wet	
					SM		17
						No Recovery	18
							19
20						SP-SM: 10YR(6/4) WELL SORTED FINE TO MEDIUM SAND WITH SILT, non plastic, sub rounded sand grains, 10% silt, 25% fine sand, 65% medium sand, trace coarse sand, loose, wet	
					SF-SM		20
						SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non	
							21
							22



BOREHOLE NO: **GAAF-MW032**  
TOTAL DEPTH: **75'**

Page 3 of 7

# FIELD BOREHOLE LOG

BOREHOLE NO:  
TOTAL DEPTH:

**GAAF-MW032**  
**75'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
35	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 70% medium sand, 30% coarse sand, loose, wet	(2" ID)
36							
37	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 70% medium sand, 20% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-22mm	Sand Pack
38							
40	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, trace sub rounded fine gravel, loose, wet	
41							
42	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 45% medium sand, 30% coarse sand, 10% fine gravel, 15% coarse gravel, loose, wet, gravel range 5-10mm	
43							
44	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, trace fine gravel, loose, wet	
45							
46	Sonic				SP	SP: 10YR(6/4) WELL SORTED COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 35% medium sand, 60% coarse sand, 5% fine gravel, trace coarse gravel, loose, wet	
47							
48	Sonic				SP	SP: 10YR(6/4) WELL SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 25% medium sand, 60% coarse sand, 10% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-8mm	Bentonite Seal
49							
50	Sonic				SP	SP: 10YR(6/4) WELL SORTED COARSE SAND, non plastic, sub rounded sand	
51							



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW032

TOTAL DEPTH:

75'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	grains and gravel, trace silt, trace fine sand, 40% medium sand, 60% coarse sand, trace fine gravel, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 60% medium sand, 35% coarse sand, trace fine gravel, 5% coarse gravel, loose, wet, gravel range 10-15mm	
50					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 70% medium sand, 20% coarse sand, loose, wet	
	Sonic				SP	SP: 10YR(6/4) WELL SORTED COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 40% medium sand, 60% coarse sand, trace fine gravel, loose, wet	
55						No Recovery	
	Sonic						

1" PVC

Sand Pack

GAAF-MW032-58  
(1" ID)

BOREHOLE NO:  
TOTAL DEPTH:

GAAF-MW032  
75'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
						No Recovery	
60	Sonic					SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, loose, wet	
					SP		
						SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 80% medium sand, 20% coarse sand, loose, wet	
					SP		
						SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 70% medium sand, 30% coarse sand, trace fine gravel, loose, wet, gravel range 4-6mm	
					SP		
65	Sonic					SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 80% medium sand, 10% coarse sand, loose, wet	
					SP		
						SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 65% medium sand, 20% coarse sand, 5% fine gravel, loose, wet, gravel range 4-6mm	
					SP		
70						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 5% silt, 10% fine sand, 75% medium sand, 10% coarse sand, loose, wet	
					SP		
						SM: 10YR(6/4) WELL SORTED SILTY MEDIUM SAND, non plastic, sub rounded	



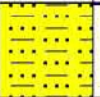
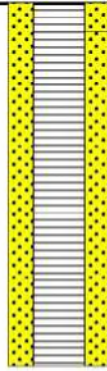


# FIELD BOREHOLE LOG

BOREHOLE NO:

**GAAF-MW032**

TOTAL DEPTH:

**75'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
75	Sonic				SM	sand grains, trace clay, 15% silt, 20% fine sand, 65% medium sand, loose, wet	 GAAF-MW032-74 (2" ID)
72					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 30% medium sand, 10% coarse sand, trace coarse gravel, loose, wet	
74					CL	CH: 10YR(6/1) FAT CLAY, high plasticity, 90% clay, 10% silt, moderately stiff, wet	
75							



# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF-MW033**  
TOTAL DEPTH: **35'**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Grayling Area PFAS			CONTRACTOR:	Mateco		
SITE LOCATION:	Grayling, MI			CREW CHIEF:	Jeff Croel		
PROJECT NO.:	60661441			DRILL RIG TYPE:	Geoprobe 8140DT		
PROJECT MANAGER:	Matt VanderEide			DRILLING METHOD:	Sonic		
LOGGED BY:	Stanley Krenz			HOLE DIAMETER:	8 1/4"		
CREATED BY:	Stanley Krenz			DATE START:	1/7/20		
				DATE END:	1/8/20		

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
0	Hand Auger				GW	GW-GM: 10YR(5/3) POORLY SORTED FINE TO COARSE GRAVEL WITH SAND AND SILT, non plastic, sub rounded sand grains and gravel, 10% silt, 5% fine sand, 10% medium sand, 15% coarse sand, 30% fine gravel, 30% coarse gravel, loose, dry, gravel range 5-35mm, trace cobble, ROAD GRAVEL	0
					SP	SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 15% fine sand, 35% medium sand, trace coarse sand, trace fine gravel, loose, moist and wet from 4ft bgs	2
	Sonic				SP	SP: 10YR(4/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 10% fine sand, 85% medium sand, trace coarse sand, trace fine gravel, loose, wet	5
					GW	GW: 10YR(4/3) POORLY SORTED FINE GRAVEL WITH SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 30% medium sand, 10% coarse sand, 40% fine gravel, 20% coarse gravel, loose, wet, gravel range 4-38mm	7
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 25% fine sand, 75% medium sand, loose, wet	9
10							10



# FIELD BOREHOLE LOG

BOREHOLE NO:  
TOTAL DEPTH:

**GAAF-MW033**  
**35'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 90% medium sand, trace coarse sand, trace fine gravel, trace coarse gravel, loose, wet, gravel range 4-8mm	11 12 13 14 15 16 17 18 19 20 21 22
							Bentonite Seal
							2" PVC
15	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 90% medium sand, trace coarse gravel, loose, wet	15 16 17 18 19 20 21 22
							Sand Pack
							GAAF-MW033-20 (2" ID)
						No Recovery	
20					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 80% medium sand, 10% coarse sand, loose, wet	

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW033

TOTAL DEPTH:

35'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic					SP Continued: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 80% medium sand, 10% coarse sand, loose, wet	
							23
							Bentonite Seal
						No Recovery	24
25							25
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 15% fine sand, 75% medium sand, 10% coarse sand, trace fine gravel, trace coarse gravel, loose, wet, gravel range 5-9mm, 12mm max	26
							2" PVC
							27
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 70% medium sand, 15% coarse sand, 5% fine gravel, trace coarse gravel, loose, wet, gravel range 5-12mm, 21mm max	28
							Sand Pack
							29
30					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 50% medium sand, 20% coarse sand, 10% fine gravel, 20% coarse gravel, loose, wet, gravel range 5-22mm	30
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 60% medium sand, 25% coarse sand, 5% fine gravel, 10% coarse gravel, loose, wet, gravel range 5-20mm	31
	Sonic				CL	CL: 10YR(6/1) LEAN CLAY, medium plasticity, 100% clay, moist, stiff	32
							GAAF-MW033-32 (2" ID)
							33
							34



# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF-MW033**  
TOTAL DEPTH: **35'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
35						CL Continued: 10YR(6/1) LEAN CLAY, medium plasticity, 100% clay, moist, stiff	35



# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF-MW034**  
TOTAL DEPTH: **100'**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Grayling Area PFAS			CONTRACTOR:	Mateco		
SITE LOCATION:	Grayling, MI			CREW CHIEF:	Jeff Croel		
PROJECT NO.:	60661441			DRILL RIG TYPE:	Geoprobe 8140DT		
PROJECT MANAGER:	Matt VanderEide			DRILLING METHOD:	Sonic		
LOGGED BY:	Stanley Krenz			HOLE DIAMETER:	8 1/4"		
CREATED BY:	Stanley Krenz			DATE START:	11/18/19		
				DATE END:	11/22/19		

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
0	Hand Auger					10YR(4/4) TOPSOIL, non plastic, sub rounded sand grains and gravel, trace fine sand, 80% medium sand, 20% coarse sand, trace fine gravel, trace coarse gravel, loose, moist, trace grass and roots	0
						SP: 10YR(4/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace fine sand, 90% medium sand, 10% coarse sand, trace fine gravel, loose, moist	-1
					SP		-2
					SP	SP: 10YR(4/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 5% fine sand, 85% medium sand, 10% coarse sand, trace fine gravel, loose, moist	-3
	Sonic				SP	SP: 10YR(4/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 15% fine sand, 80% medium sand, 5% coarse sand, trace fine gravel, trace coarse sand, loose, moist, trace gravel range 22-37mm, with 10YR (6/4) mottling	-4
5					SP	SP: 10YR(4/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 70% medium sand, 30% coarse sand, trace fine gravel, trace coarse gravel, loose, wet, gravel range 6-14mm	-5
					SP		-6
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, trace coarse sand, loose, moist	-7
						No Recovery	-8
10							-9
							-10

Bentonite Seal  
2" PVC



**GAAF-MW034**  
**100'**

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**GAAF-MW034**  
**100'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS		WELL CONSTRUCTION
	Sonic			(Green hatched box)			
				(Black cross-hatch box)	SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic; sub rounded sand grains, trace silt, 10% fine sand, 85% medium sand, 5% coarse sand, loose, wet	-23
			No Recovery				Bentonite Seal -24 -25 -26 -27 -28
25	Sonic						
	Sonic						
30				(Yellow dotted box)	SM	SM: 10YR(6/4) WELL SORTED SILTY FINE SAND, non plastic, sub rounded sand grains and gravel, 15% silt, 70% fine sand, 15% medium sand, trace fine gravel, trace coarse gravel, loose, wet	-29  1" PVC -30
			No Recovery				Sand Pack GAAF-MW034-35 (1" ID) -31 -32 -33 -34
	Sonic						



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW034

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
35	Sonic					No Recovery	
	Sonic				SP-SM	SP-SM: 10YR(6/4) WELL SORTED FINE SAND WITH SILT, non plastic, sub rounded sand grains, 10% silt, 80% fine sand, 10% medium sand, loose, wet	
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, 5% silt, 10% fine sand, 30% medium sand, 40% coarse sand, 15% fine gravel, loose, wet, gravel range 5-7mm	
40	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 30% medium sand, trace coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 3-11mm	
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 85% medium sand, 5% coarse sand, loose, wet	
45	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 5% fine sand, 85% medium sand, 10% coarse sand, trace fine gravel, loose, wet	
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand	

Bentonite Seal

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW034

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	grains and sub rounded to sub angular gravel, trace silt, 5% fine sand, 80% medium sand, 10% coarse sand, 5% fine gravel, loose, wet, gravel range 5-6mm	47
							48
					SP	SP: 10YR(6/4) WELL SORTED COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 20% medium sand, 35% coarse sand, 30% fine gravel, 15% coarse gravel, loose, wet, gravel range 5-20mm	49
					GP	GP: 10YR(6/4) WELL SORTED FINE TO COARSE GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, trace medium sand, trace coarse sand, 60% fine gravel, 40% coarse gravel, loose, wet, gravel range 5-37mm	50
50					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 75% medium sand, 15% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 6-9mm	51
	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, loose, wet	52
							53
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, 10% fine sand, 60% medium sand, 10% coarse sand, 10% fine gravel, 10% coarse gravel, loose, wet, gravel range 8-27mm, trace cobble	54
55							55
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 5% fine sand, 85% medium sand, 10% coarse sand, loose, wet	56
	Sonic						57
							58
						SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, trace fine gravel, trace coarse gravel, loose, wet	59

2" PVC

Sand Pack

GAAF-MW034-55  
(2" ID)



**GAAF-MW034**  
**100'**

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# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW034

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
72	Sonic				SP	SP Continued: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 75% medium sand, 10% coarse sand, 5% fine gravel, 10% coarse gravel, loose, wet, gravel range 7-18mm	Sand Pack
73					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 80% medium sand, 20% coarse sand, trace fine gravel, loose, wet	GAAF-MW034-75 (1" ID)
74					SP	SP: 10YR(6/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, 5% silt, 25% fine sand, 70% medium sand, loose, wet	
75					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, loose, wet	
76					SP		
77					SP		
78					SM	SM: 10YR(6/2) WELL SORTED SILTY FINE SAND, non plastic, sub rounded sand grains, 15% silt, 65% fine sand, 20% medium sand, loose, wet	
79					SM		
80					SP	SP: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 5% silt, 10% fine sand, 80% medium sand, 5% coarse sand, loose, wet, uniform	
81					SP		
82					SP		
83					SP		



# FIELD BOREHOLE LOG

BOREHOLE NO:

**GAAF-MW034**

TOTAL DEPTH:

**100'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
84	Sonic					SP Continued: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 5% silt, 10% fine sand, 80% medium sand, 5% coarse sand, loose, wet, uniform	Bentonite Seal
85						SP: 10YR(6/4) WELL SORTED MEDIUM SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 60% medium sand, 20% coarse sand, 10% fine gravel, 10% coarse gravel, loose, wet, gravel range 6-35	
86							
87	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 80% medium sand, 20% coarse sand, trace fine gravel, trace coarse gravel, loose, wet	
88							
89							
90	Sonic				SP	SP: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, loose, wet	2" PVC
91							
92						SP: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 95% medium sand, 5% coarse sand, medium dense, wet	
93	Sonic				SP		
94							
95						SP: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 5% silt, 10% fine sand, 85% medium sand, medium dense, wet	

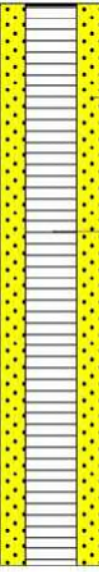
# FIELD BOREHOLE LOG

BOREHOLE NO:

**GAAF-MW034**

TOTAL DEPTH:

**100'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	SP Continued: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, 5% silt, 10% fine sand, 85% medium sand, medium dense, wet	 <p>Sand Pack</p> <p>GAAF-MW034-100 (2" ID)</p>
					SP	SP: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic sub rounded sand grains, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, loose, wet	
100							





# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF-MW035**  
TOTAL DEPTH: **70'**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Grayling Area PFAS			CONTRACTOR:	Mateco		
SITE LOCATION:	Grayling, MI			CREW CHIEF:	Jeff Croel		
PROJECT NO.:	60661441			DRILL RIG TYPE:	Geoprobe 8140DT		
PROJECT MANAGER:	Matt VanderEide			DRILLING METHOD:	Sonic		
LOGGED BY:	Stanley Krenz			HOLE DIAMETER:	8 1/4"		
CREATED BY:	Stanley Krenz			DATE START:	12/4/19		
				DATE END:	12/6/19		

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
0	Hand Auger					10YR(3/3) TOPSOIL, non plastic, sub rounded sand grains, 50% silt, 50% fine sand, loose, dry, trace roots	0
	Sonic				SM	SM: 10YR(3/3) WELL SORTED SILTY FINE TO MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 20% silt, 40% fine sand, 40% medium sand, trace fine gravel, trace coarse gravel, loose, dry, gravel range 8-14mm	1
					SF-SM	SP-SM: 10YR(3/6) WELL SORTED MEDIUM SAND WITH SILT, non plastic, sub rounded sand grains, 10% silt, 30% fine sand, 60% medium sand, loose, dry	2
					SP	SP: 10YR(6/8) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, 5% silt, 15% fine sand, 80% medium sand, trace fine gravel, loose, moist, wet from 5 ft bgs	3
							4
							5
5	Sonic				SF-SM	SP-SM: 10YR(5/8) WELL SORTED MEDIUM SAND WITH SILT, non plastic, sub rounded sand grains, trace clay, 10% silt, 25% fine sand, 60% medium sand, 5% coarse sand, loose, wet	5
					ML	ML: 10YR(5/6) WELL SORTED SILT, non plastic, sub rounded sand grains, 90% silt, 10% fine sand, loose, wet	6
					SP	SP: 10YR(5/6) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 10% fine sand, 90% medium sand, loose, wet	7
							8
							9
10							10

GAAF-MW035-11  
(2" ID)

BOREHOLE NO:  
TOTAL DEPTH:

**GAAF-MW035**  
**70'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 15% fine sand, 85% medium sand, loose, wet, from 11.6 to 11.7 ft bgs small silt lens	
					SP-SM	SP-SM: 10YR(5/4) WELL SORTED FINE TO MEDIUM SAND WITH SILT, non plastic, sub rounded sand grains, 10% silt, 30% fine sand, 60% medium sand, loose, wet	Sand Pack
					SP	SP: 10YR(5/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 30% fine sand, 70% medium sand, loose, wet	Bentonite Seal
15	Sonic				SP	SP: 10YR(5/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 30% fine sand, 70% medium sand, loose, wet	1" PVC Riser
					SP	SP: 10YR(5/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 75% medium sand, 20% coarse sand, 5% fine gravel, trace coarse gravel, loose, wet, gravel range 5-7mm, 21mm max, trace cobble	
					SP		
					SP		
					SP		
20					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 60% medium sand, 20% coarse sand, 5% fine gravel, 15% coarse gravel, loose, wet, gravel range 6-25mm	GAAF-MW035-20 (1" ID)
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 85% medium sand, 10% coarse sand, 5% fine gravel, trace coarse gravel, loose, wet	Sand Pack



# FIELD BOREHOLE LOG

BOREHOLE NO:

**GAAF-MW035**

TOTAL DEPTH:

**70'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
23	Sonic				SP	SP Continued: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 85% medium sand, 10% coarse sand, 5% fine gravel, trace coarse gravel, loose, wet	
24					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 85% medium sand, 15% coarse sand, trace fine gravel, trace coarse gravel, loose, wet	
25					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 65% medium sand, 30% coarse sand, 5% fine gravel, loose, wet	
26					SP		
27					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 55% medium sand, 30% coarse sand, 10% fine gravel, 5% coarse gravel, loose, wet, gravel range 6-19mm, 37mm max, trace cobble	
28					SP		
29					SP		2" PVC
30					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 10% fine sand, 50% medium sand, 30% coarse sand, 10% fine gravel, loose, wet, gravel range 4-6mm, from 31.9 to 32 ft bgs a small gravel seam	
31					SP		
32					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, 10% fine sand, 75% medium sand, 15% coarse sand, trace fine gravel, loose, wet	
33					SP		GAAF-MW035-35 (2" ID)
34					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 65% medium sand, 25% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-12mm	

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW035

TOTAL DEPTH:

70'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
35	Sonic				SP	SP Continued: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 65% medium sand, 25% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-12mm	<p>Sand Pack</p>
					GP	GP: 10YR(6/4) WELL SORTED FINE GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 20% medium sand, 20% coarse sand, 45% fine gravel, 15% coarse gravel, loose, wet, gravel range 5-15mm	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 75% medium sand, 15% coarse sand, 10% sub rounded fine gravel, trace coarse gravel, loose, wet	
						No Recovery	
40	Sonic				SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 80% medium sand, 20% coarse sand, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 40% medium sand, 35% coarse sand, 20% fine gravel, 5% coarse gravel, loose, wet, gravel range 5-12mm	
45							



BOREHOLE NO: **GAAF-MW035**  
TOTAL DEPTH: **70'**

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# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW035

TOTAL DEPTH:

70'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
60	Sonic					SP Continued: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded sand grains and sub rounded to sub angular gravel, trace silt, trace fine sand, 50% medium sand, 20% coarse sand, 10% fine gravel, 20% coarse gravel, loose, wet, gravel range 5-12mm	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 80% medium sand, 20% coarse sand, trace fine gravel, trace coarse gravel, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 60% medium sand, 30% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet, gravel range 8-10mm, trace cobble	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains and gravel, trace silt, trace fine sand, 80% medium sand, 20% coarse sand, trace fine gravel, trace coarse gravel, loose, wet	
65	Sonic					SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, 20% fine sand, 80% medium sand, trace coarse sand, loose, wet	
					SP	SP: 10YR(6/4) WELL SORTED MEDIUM SAND, non plastic, sub rounded sand grains, trace silt, trace fine sand, 90% medium sand, 10% coarse sand, trace fine gravel, trace coarse gravel, loose, wet	
					SP	GP: 10YR(6/4) WELL SORTED COARSE GRAVEL, non plastic, sub rounded gravel, 25% fine gravel, 75% coarse gravel, loose, wet, gravel range 5-37mm	
70					GP		

Sand Pack





# FIELD BOREHOLE LOG

BOREHOLE NO: **GAAF-MW036**  
TOTAL DEPTH: **100'**

PROJECT INFORMATION				DRILLING INFORMATION			
PROJECT:	Grayling Area PFAS			CONTRACTOR:	Mateco		
SITE LOCATION:	Grayling, MI			CREW CHIEF:	Jeff Croel		
PROJECT NO.:	60661441			DRILL RIG TYPE:	Geoprobe 8140DT		
PROJECT MANAGER:	Matt VanderEide			DRILLING METHOD:	Sonic		
LOGGED BY:	Russell Platte			HOLE DIAMETER:	8 1/4"		
CREATED BY:	Stanley Krenz			DATE START:	11/25/19		
				DATE END:	12/3/19		

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
0	Hand Auger				SM	SM: 10YR(4/3) POORLY SORTED SILTY MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and sub rounded gravel, 20% silt, 20% fine sand, 40% medium sand, 10% coarse sand, 5% fine gravel, 5% coarse gravel, loose, moist, roots	
					SM	SM: 10YR(2/2) WELL SORTED SILTY MEDIUM SAND, non plastic, sub rounded to sub angular sand grains, 25% silt, 15% fine sand, 45% medium sand, 15% coarse sand, loose, dry	
					SW	SW: 10YR(3/6) POORLY SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 45% fine sand, 35% medium sand, 20% coarse sand, loose, dry	
					SP	SP: 10YR(4/6) WELL SORTED FINE SAND, non plastic, sub rounded sand grains, trace silt, 65% fine sand, 25% medium sand, 10% coarse sand, loose, dry	
					SP	SP: 10YR(6/4) WELL SORTED FINE SAND, non plastic, sub rounded sand grains, trace silt, 60% fine sand, 30% medium sand, 10% coarse sand, loose, dry	
5	Sonic				SP	SP: 10YR(5/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and rounded gravel, trace silt, 55% fine sand, 30% medium sand, 15% coarse sand, trace fine gravel, loose, wet	2" PVC
					SP	SP: 10YR(6/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 70% fine sand, 20% medium sand, 10% coarse sand, loose, moist	
10					SP		

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW036

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic				SP	SP: 10YR(6/4) WELL SORTED FINE SAND, non plastic, sub rounded sand grains, trace silt, 90% fine sand, 10% medium sand, trace coarse sand, loose, wet	
					SW	SW: 10YR(6/4) POORLY SORTED MEDIUM TO COARSE SAND WITH GRAVEL, non plastic, sub rounded to sub angular sand grains and gravel, trace silt, 20% fine sand, 30% medium sand, 20% coarse sand, 15% fine gravel, 15% coarse gravel, loose, wet, gravel range 10-40mm, fining downward	
					SP	SP: 10YR(4/4) WELL SORTED FINE SAND, non plastic, sub rounded sand grains, trace silt, 100% fine sand	
15	Sonic				SW	SW: 10YR(6/4) POORLY SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and sub rounded to angular gravel, trace silt, 15% fine sand, 60% medium sand, 10% coarse sand, 5% fine gravel, 10% coarse gravel, loose, wet	
					SP	SP: 10YR(5/3) WELL SORTED FINE SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 80% fine sand, 20% medium sand, trace coarse sand, loose, wet	
20					SP	SP: 10YR(6/3) WELL SORTED MEDIUM TO FINE SAND, non plastic, sub rounded to sub angular sand grains and sub rounded to angular gravel, trace silt, 20% fine sand, 50% medium sand, 15% coarse sand, 5% fine gravel, 10% coarse gravel, loose, wet	

GAAF-MW036-17  
(2" ID)

Sand Pack



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW036

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic					SP Continued: 10YR(6/3) WELL SORTED MEDIUM TO FINE SAND, non plastic, sub rounded to sub angular sand grains and sub rounded to angular gravel, trace silt, 20% fine sand, 65% medium sand, 15% coarse sand, 5% fine gravel, 10% coarse gravel, loose, wet	
						SP-SM: 10YR(5/3) WELL SORTED FINE SAND WITH SILT, non plastic, sub rounded sand grains, 10% silt, 90% fine sand, loose, wet	23
					SF-SM		24
25						SP: 10YR(6/3) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 60% fine sand, 30% medium sand, 10% coarse sand, loose, wet	25
					SP		26
	Sonic						27
						No Recovery	28
							29
30						SP: 10YR(5/3) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 60% fine sand, 30% medium sand, 10% coarse sand, loose, wet	30
					SP		31
							Sand Pack
							32
	Sonic					SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and sub rounded gravel, trace silt, 20% fine sand, 35% medium sand, 20% coarse sand, 15% fine gravel, 10% coarse gravel, loose, moist, gravel range 10-25mm	33
					SW		34

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW036

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
35	Sonic						
					SP	SP: 10YR(5/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 15% fine sand, 60% medium sand, 25% coarse sand, loose, wet	
					SW	SW: 10YR(5/3) POORLY SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, trace silt, 10% fine sand, 15% medium sand, 35% coarse sand, 35% fine gravel, 5% coarse gravel, loose, wet, gravel range 10-20mm	
					SP	SP: 10YR(5/3) WELL SORTED FINE SAND, non plastic, sub rounded to sub angular sand grains and sub rounded gravel, trace silt, 65% fine sand, 25% medium sand, 10% coarse sand, trace fine gravel, trace coarse gravel, loose, wet	
	Sonic				SW	SW: 10YR(5/3) POORLY SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, trace silt, 30% fine sand, 30% medium sand, 20% coarse sand, 15% fine gravel, 5% coarse gravel	
40					SW	SW: 10YR(5/4) POORLY SORTED FINE SAND, non plastic, sub rounded to sub angular sand grains and gravel, trace silt, 65% fine sand, 20% medium sand, 10% coarse sand, 5% fine gravel, trace coarse gravel, loose, wet, gravel range 5-15mm	
					SW		
					SW	SW: 10YR(5/4) POORLY SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, trace silt, 25% fine sand, 25% medium sand, 10% coarse sand, 20% fine gravel, 20% coarse gravel, dense, wet, gravel range 5-30mm	
					SW	SW: 10YR(5/4) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and rounded to sub angular gravel, trace silt, 15% fine sand, 25% medium sand, 25% coarse sand, 25% fine gravel, 10% coarse gravel, loose, wet	
45					SP	SP: 10YR(5/4) WELL SORTED FINE SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 70% fine sand, 20% medium sand, 10% coarse sand, loose, wet	

2" PVC

GAAF-MW036-48  
(2" ID)



# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW036

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic					SP Continued: 10YR(5/4) WELL SORTED FINE SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 70% fine sand, 20% medium sand, 10% coarse sand, loose, wet	47
					SP	SP: 10YR(5/4) WELL SORTED FINE SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 60% fine sand, 25% medium sand, 15% coarse sand, loose, wet	48
					SW	SW: 10YR(5/4) POORLY SORTED FINE SAND, non plastic, sub rounded to sub angular sand grains and sub rounded gravel, trace silt, 45% fine sand, 25% medium sand, 20% coarse sand, 5% fine gravel, 5% coarse gravel, loose, wet	49
50					SW		50
	Sonic				SP	SP: 10YR(5/4) WELL SORTED FINE SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 65% fine sand, 20% medium sand, 15% coarse sand, loose, wet	52
					SP		53
							54
55					SW	SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and rounded to sub angular gravel, trace silt, 10% fine sand, 35% medium sand, 15% coarse sand, 20% fine gravel, 20% coarse gravel, loose, wet	55
							56
	Sonic					SW: 10YR(5/3) POORLY SORTED MEDIUM TO COARSE SAND, non plastic, sub rounded to sub angular sand grains and rounded to sub angular gravel, trace silt, 15% fines and, 35% medium sand, 25% coarse sand, 15% fine gravel, 10% coarse	59

Sand Pack

# FIELD BOREHOLE LOG

BOREHOLE NO:

GAAF-MW036

TOTAL DEPTH:

100'

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
60	Sonic				SW	gravel, loose, wet	
61							
62							
63							
64							
65	Sonic				SP	SP: 10YR(5/3) WELL SORTED FINE SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 50% fine sand, 40% medium sand, 10% coarse sand, loose, wet	
66							
67							
68							
69							1" PVC
70						No Recovery	
71							



# FIELD BOREHOLE LOG

BOREHOLE NO:  
TOTAL DEPTH:

**GAAF-MW036**  
**100'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
	Sonic					No Recovery	
75	Sonic					SW: 10YR(5/1) POORLY SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and gravel, trace silt, 10% fine sand, 55% medium sand, 20% coarse sand, 10% fine gravel, 5% coarse gravel, loose, wet	
					SW		
	Sonic					SP: 10YR(6/3) WELL SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 20% fine sand, 60% medium sand, 20% coarse sand	
					SP		
						SP: 10YR(5/1) WELL SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 20% fine sand, 60% medium sand, 20% coarse sand	
					SP		
						SP: 10YR(5/1) WELL SORTED MEDIUM SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 35% fine sand, 55% medium sand, 10% coarse sand	
					SP		
80						No Recovery	
	Sonic						

GAAF-MW036-75  
(1" ID)

Sand Pack

# FIELD BOREHOLE LOG

BOREHOLE NO:  
TOTAL DEPTH:

**GAAF-MW036**  
**100'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
85	Sonic					No Recovery	
90	Sonic					SP: 10YR(5/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 55% fine sand, 30% medium sand, 15% coarse sand	
95					SP		2" PVC




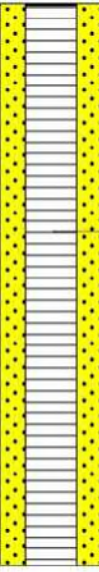

# FIELD BOREHOLE LOG

BOREHOLE NO:

**GAAF-MW036**

TOTAL DEPTH:

**100'**

DEPTH	SAMPLE TYPE	ATTEMPT	RECOVERY	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	WELL CONSTRUCTION
96	Sonic				SW	SW: 10YR(6/4) POORLY SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains and sub rounded gravel, trace silt, 55% fine sand, 25% medium sand, 10% coarse sand, 10% fine gravel, trace coarse gravel	 GAAF-MW036-100 (2" ID)
97						SP: 10YR(6/4) WELL SORTED FINE TO MEDIUM SAND, non plastic, sub rounded to sub angular sand grains, trace silt, 65% fine sand, 25% medium sand, 10% coarse sand	
98					SP		
99							
100							