

APPENDIX 10.13

GEOTECHNICAL INFORMATION IN RELATION TO THE RESOURCE RECOVERY PLANT SITE

SUBSURFACE INVESTIGATION,
SITE 7 - PROPOSED
RESOURCE RECOVERY PLANT,
PALM BEACH COUNTY, FLORIDA

JAMMAL & ASSOCIATES, INC. Consulting Engineers

MEMBER

Associated Soil and Foundation Engineers, Inc.
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5640 Corporate Way, West Palm Beach, Florida 33407 ■ Telephone (305) 689-3400

JAMMAL & ASSOCIATES, INC. Consulting Engineers

February 25, 1985
Project No. 85-22005

TO: Hayden-Wegman Consulting Engineers
5114 Okeechobee Boulevard - Suite 2-B
West Palm Beach, Florida 33409

Attention: Mr. Stan Timmerman

SUBJECT: Subsurface Investigation,
Site 7-Proposed Resource Recovery Plant,
Palm Beach County, Florida.

Dear Mr. Timmerman:

As requested by you and Messrs. Smith and Kald of your New York office, we have completed a subsurface investigation at Site 7 of the proposed Resource Recovery Plant. The methods and results of our investigation are discussed in detail below and are summarized on Sheets 1 and 2, attached.

FIELD STUDY

We drilled a total of four test borings to depths of between 82 and 157-feet below the existing ground surface within the site. The borings were located generally around the site perimeter due to very heavy vegetation which prevented access into the site interior. The locations of the test borings are shown on Sheet 1.

The borings were advanced between January 26 and February 4, 1985, by rotary drill methods using a 3 7/8-inch diameter tri-cone bit powered by a mobile B-61 drilling rig. Casing and bentonite slurry were used to stabilize the sides and bottoms of the holes. Standard penetration tests (ASTM D-1586) were conducted in each of the borings. Standard penetration resistance, "N-value", was recorded as the number of blows of a 140 pound hammer falling 30 inches required to drive a 24-inch long, 2-inch diameter (O.D.) split-spoon sampler a distance of 12-inches. The soil samples were collected from the split-spoon sampler, field classified and returned to our laboratory in sealed glass jars. Also, in boring B-1 a rock core run (ASTM D-2113) was made (with an NX, diamond-tip-core barrel between depths of 60 and 65 feet). The recovered core consisted of shelly sand but nonetheless was placed in a core box and returned to our laboratory.

SUBSURFACE CONDITIONS

The test borings encountered very loose to medium dense, relatively clean to slightly silty, and occasionally silty fine to medium sands underlain at depths of 40 to 50 feet by mostly dense to very dense slightly silty fine to medium sands with shell and rock fragments and intermittent, but relatively thin sandstone and limestone lenses. These dense, shelly, partially cemented sands extended to the bottoms of the borings.

Drilling logs for each of the borings are presented within the appendix. Also, we summarized the boring results in the form of soil profiles depicted graphically on Sheet 2.



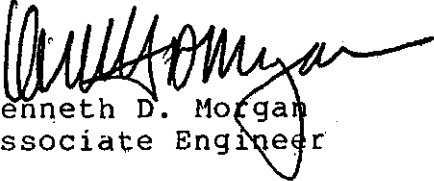
Hayden-Wegman Consulting Engineers
Project No. 85-22005

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We trust this information is complete and sufficient to meet your needs. If you have any questions concerning the contents of this report or if you desire additional information, please feel free to give us a call.

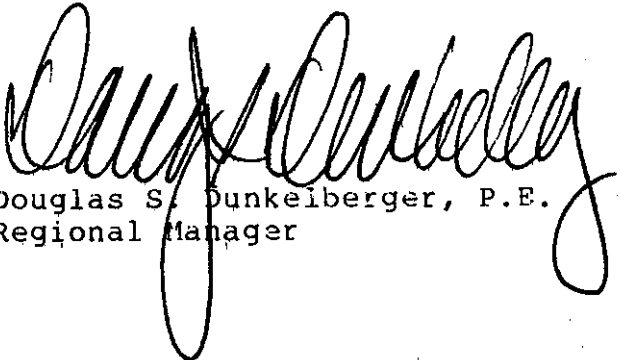
Very truly yours,

JAMMAL & ASSOCIATES, INC.


Kenneth D. Morgan
Associate Engineer

DSD/KDM:tl

cc: Mr. Lembit Kald


Douglas S. Dunkelberger, P.E.
Regional Manager

Palm Beach County Solid Waste Authority
Attention: Mr. Tom Keith



APPENDIX

BORING LOGS



PROJECT NO. 85-22005 CLIENT Hayden-Wegman
 PROJECT Resource Recovery Plant
 DRILLED BY WG-KR Boring started on 1/26/85
 Depth 127' Completed on 1/28/85
 Hammer drop 30" weight 140 lb.
 Casing size 4"/3" length 40'/110'

BORING No. B-1 SHEET NO. 1 of 5
 LOCATION OF BORING (See Plan)
 DEPTH TO GROUND WATER TABLE _____
 GROUND ELEVATION 18.4' (MSL)
 Engineer: Inst. by KDM Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES				
					10	20	40	60	80
0									
5		1A	brown to gray silty fine to medium SAND with traces of clay, trace roots.	5-5-2-4					
		1B	gray fine to medium SAND with a trace of silt; shell fragments.						
10		2	gray to tan fine to medium SAND with a trace of silt; shell fragments.	7-5-8-7					
15		3A	dark brown slightly silty fine to medium SAND; organic stained.	2-3-6-7					
		3B	gray to brown fine to medium SAND with a trace of silt; shell fragments.						
20		4	gray to brown fine to medium SAND with a trace of silt; shell fragments.	4-4-5-7					
25		5A	gray to tan fine to medium SAND with very thin clayey lenses.	5-2-2-3					

Remarks

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PROJECT NO. 85-22005 CLIENT Hayden-Wegman
 PROJECT Resource Recovery Plant
 DRILLED BY WG-KR Boring started on 1/26/85
 Depth 127' Completed on 1/28/85
 Hammer drop 30" weight 140 lb.
 Casing size 4"/3" length 40'/110'

BORING No. B-1 SHEET NO. 2 of 5
 LOCATION OF BORING (See Plan)
 DEPTH TO GROUND WATER TABLE _____
 GROUND ELEVATION 18.4' (MSL)
 Engineer: Inst. by KDM Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES 10 20 40 60 80
25		5B	dark gray silty fine SAND.	5-2-2-3	
		5C	gray to dark gray slightly silty fine to medium SAND with silty lenses.		
30		6	dark gray silty fine SAND.	* W.O.H.	
35		7	gray to dark gray slightly silty fine to medium SAND with silty lenses.	1-1-2-4	
40		8	gray to light gray fine to medium SAND with a trace of silt.	6-7-11-11	
45		9A	blue-gray silty fine SAND.	2-3-8-10	
		9B	blue-gray CLAY with traces of sand and rock fragments.		
50		10	gray fine to medium SAND with numerous shell fragments; slightly calcareous.	10-13-14-16	

Remarks *Sampler fell under static weight of hammer and rods.

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PROJECT NO. 85-22005 CLIENT Hayden-Wegman
 PROJECT Resource Recovery Plant
 DRILLED BY WG-KR Boring started on 1/26/85
 Depth 127' Completed on 1/28/85
 Hammer drop 30" weight 140 lb.
 Casing size 4"/3" length 40'/110'

BORING No. B-1 SHEET NO. 3 of 5
 LOCATION OF BORING (See Plan)
 DEPTH TO GROUND WATER TABLE _____
 GROUND ELEVATION 18.4' (MSL)
 Engineer: Inst. by KDM Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES				
					10	20	40	60	80
50				10-13- 14-16					
55		11	light gray slightly silty fine to medium SAND.	11-7-9-5					
60			blue-gray silty fine SAND with shell fragments.	NX core run 60'-65' 28% rec 9% RQD					
65		12	green-gray slightly silty fine SAND with shells and shell fragments; trace rock fragments.	8-6-12-10					
70		13	green-gray slightly silty fine SAND with shells and shell fragments; some cementation; slightly calcareous.	11-16- 14-11					
75		14	green-gray slightly silty fine SAND with shells and shell fragments; numerous rock fragments; slightly calcareous with some cementation.	24-24- 25-29					

Remarks

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PROJECT NO. 85-22005 CLIENT Hayden-WegmanPROJECT Resource Recovery PlantDRILLED BY WG-KR Boring started on 1/26/85Depth 127' Completed on 1/28/85Hammer drop 30" weight 140 lb.Casing size 4"/3" length 40'/110'BORING No. B-1 SHEET NO. 4 of 5LOCATION OF BORING (See Plan)

DEPTH TO GROUND WATER TABLE

GROUND ELEVATION 18.4' (MSL)Engineer: Inst. by KDM Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES 10 20 40 60 80
75				24-24- 25-29	
80		15	green-gray slightly silty fine SAND with shells and shell fragments; numerous rock fragments; slightly calcareous with some cementation.	32-15- 15-26	
85		16	green-gray slightly silty fine SAND with shells and shell fragments; limestone lenses.	10-6-8-10	
90		17	green-gray slightly silty fine SAND with shells and shell fragments; limestone lenses.	12-28- 27-66	
95		18	green-gray slightly silty fine SAND with shells and shell fragments; sandstone lenses.	10-15- 35-40	
100		19	green-gray slightly silty fine SAND with shells and shell fragments; numerous shell fragments.	16-14- 17-20	

Remarks

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PROJECT NO. 85-22005 CLIENT Hayden-Wegman
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 DRILLED BY WG-KR Boring started on 1/26/85
 Depth 127' Completed on 1/28/85
 Hammer drop 30" weight 140 lb.
 Casing size 4"/3" length 40'/110'

BORING No. B-1 SHEET NO. 5 of 5
 LOCATION OF BORING (See Plan)
 DEPTH TO GROUND WATER TABLE _____
 GROUND ELEVATION 18.4' (MSL)
 Engineer: Inst. by KDM Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES				
					10	20	40	60	80
100				16-14- 17-20					
105		20	green-gray slightly silty fine SAND with shells and shell fragments; calcite crystals.	24-18- 19-20					
110			rock layer 114.5' - 115.0'; other highly cemented lenses intermittent 115.0' to 125.0'.						
115									
120		21	green-gray slightly silty fine SAND with shells and shell fragments; trace of phosphate nodules.	25-26- 41-27					
125			bottom of boring at 127'.						

Remarks

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PROJECT NO. 85-22005 CLIENT Hayden-Wegman
 PROJECT Resource Recovery Plant
 DRILLED BY WG-KR Boring started on 1/29/85
 Depth 82' Completed on 1/30/85
 Hammer drop 30" weight 140 lb.
 Casing size 3"/4" length 80'/40'

BORING No. B-5 SHEET NO. 1 of 4
 LOCATION OF BORING (See Plan)
 DEPTH TO GROUND WATER TABLE -
 GROUND ELEVATION 18.0' (MSL)
 Engineer: Inst. by PDW Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES				
					10	20	40	60	80
0									
5		1	light gray to tan SAND, trace of silt; some shell fragments.	4-6-7-10					
10		2	light gray to tan SAND, trace of silt; some shell fragments.	6-7-7-11					
15		3	light gray to tan SAND, trace of silt, no shell.	2-3-6-11					
20		4	dark gray SAND, trace of silt; some shell fragments - slight organic stain.	2-2-7-10					
25		5	gray fine to medium SAND, trace of silt; some shell & rock fragments.	3-7-8-12					

Remarks

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PROJECT NO. 85-22005 CLIENT Hayden-WegmanPROJECT Resource Recovery PlantDRILLED BY WG-KR Boring started on 1/29/85Depth 82' Completed on 1/30/85Hammer drop 30" weight 140 lb.Casing size 3"/4" length 80'/40'BORING No. B-5 SHEET NO. 2 of 4LOCATION OF BORING (See Plan)DEPTH TO GROUND WATER TABLE -GROUND ELEVATION 18.0' (MSL)Engineer: Inst. by PDW Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES				
					10	20	40	60	80
25		5		3-7-8-12					
30		6	gray fine to medium SAND, trace of silt; numerous shells & shell fragments.	9-14-15-20					
35		7	green-brown fine SAND, trace of silt & trace of small shell fragments.	2-4-6-8					
40		8	green-brown fine SAND, trace of rock fragments.	6-5-5-6					
45		9	dark green-gray silty fine to medium SAND; numerous shell fragments, some rock fragments.	5-5-4-7					
50		10	gray fine to medium SAND, trace of silt; numerous shells & shell fragments.	11-11-15-21					

Remarks

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PROJECT NO. 85-22005 CLIENT Hayden-Wegman
 PROJECT Resource Recovery Plant
 DRILLED BY WG-KR Boring started on 1/29/85
 Depth 82' Completed on 1/30/85
 Hammer drop 30" weight 140 lb.
 Casing size 3"/4" length 80'/40'

BORING No. B-5 SHEET NO. 3 Of 4
 LOCATION OF BORING (See Plan)
 DEPTH TO GROUND WATER TABLE -
 GROUND ELEVATION 18.0' (MSL)
 Engineer: Inst. by PDW Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES				
					10	20	40	60	80
50		10		11-11- 15-21					
55		11	gray fine to medium SAND, trace of silt numerous shells and shell fragments, trace of rock fragments.	18-13- 18-15					
60		12	gray to brown slightly silty fine SAND, some slightly cemented.	11-27- 53-71					
65		13	tan to gray slightly silty fine SAND, trace of small shell fragments; some pebble- size rock fragments.	13-23- 34-49					
70		14	light gray fine to medium SAND, trace of silt; numerous shell fragments.	15-21- 30-44					
75		15	light gray fine to medium SAND, trace of silt; numerous rock and shell fragments.	16-22- 22-25					

Remarks

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BORING No. B-5 SHEET NO. 4 of 4
LOCATION OF BORING (See Plan)

DEPTH TO GROUND WATER TABLE -
GROUND ELEVATION 18.0' (MSL)
Engineer: Inst. by PDW Rev. by DSD

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PROJECT NO. 85-22005 CLIENT Hayden-WegmanPROJECT Resource Recovery PlantDRILLED BY WG-KR Boring started on 1/30/85Depth 152' Completed on 2/01/85Hammer drop 30" weight 140 lb.Casing size 3 3/4" length 150'/85'BORING No. B-6 SHEET NO. 1 OF 6LOCATION OF BORING (See Plan)DEPTH TO GROUND WATER TABLE -GROUND ELEVATION 18.0' (MSL)Engineer: Inst. by PDW Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES				
					10	20	40	60	80
0			"hardpan" 3.0' - 5.0'						
5		1	light green-gray to tan slightly silty fine SAND, small shell and limerock fragments.	4-4-4-4					
10		2	light green-gray to tan fine to medium SAND with a trace of silt; numerous shell fragments.	7-7-9-9					
15		3	dark gray/brown slightly silty fine SAND, traces of shell fragments, traces of roots.	1-1-1-4					
20		4	light gray-brown fine to medium SAND; trace of silt and slight iron stain.	4-6-10-12					
25		5	light gray-brown fine to medium SAND; trace of silt and slight iron stain; traces of very small shell fragments.	3-3-8-9					

Remarks

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PROJECT NO. 85-22005 CLIENT Hayden-WegmanPROJECT Resource Recovery PlantDRILLED BY WG-KR Boring started on 1/30/85Depth 152' Completed on 2/01/85Hammer drop 30" weight 140 lb.Casing size 3"/4" length 150'/85'BORING No. B-6 SHEET NO. 2 of 6LOCATION OF BORING (See Plan)DEPTH TO GROUND WATER TABLE --GROUND ELEVATION 18.0' (MSL)Engineer: Inst. by PDW Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES				
					10	20	40	60	80
25		5		3-3-8-9					
30		6A	light gray-brown fine to medium SAND; trace of silt and slight iron stain; traces of very small shell fragments.	1-2-7-17					
		6B	dark gray fine to medium SAND; trace of silt and some small shell fragments.						
35		7	dark gray fine to medium SAND; trace of silt and some small shell fragments; some light green-gray.	2-4-8-9					
40		8A	6" thick layer of gray SANDSTONE	21-11-10-10					
		8B	green-gray slightly silty fine SAND; traces of shell fragments.						
45		9	green-gray slightly silty fine SAND; traces of shell fragments.	3-8-8-10					
		10A	tan slightly silty fine to medium SAND; slightly calcareous with numerous shell fragments.	17-11-9-7					
50		10B	green-gray slightly silty fine SAND; traces of shell fragments.						

Remarks

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PROJECT NO. 85-22005 CLIENT Hayden-WegmanPROJECT Resource Recovery PlantDRILLED BY WG-KR Boring started on 1/30/85Depth 152' Completed on 2/01/85Hammer drop 30" weight 140 lb.Casing size 3 1/4" length 150'/85'BORING No. B-6 SHEET NO. 3 of 6LOCATION OF BORING (See Plan)DEPTH TO GROUND WATER TABLE -GROUND ELEVATION 18.0' (MSL)Engineer: Inst. by PDW Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES				
					10	20	40	60	80
50		10		17-11- 9-7					
55		11	tan slightly silty fine to medium SAND; slightly calcareous with numerous shell frag- ments; gray SANDSTONE lenses.	22-38- 40-43					
60		12	gray fine to medium SAND; trace of silt; numerous shell fragments.	10-8-5 -7					
65		13	gray slightly silty fine to medium SAND; large shell fragments and some pebble-size rock fragments.	8-14-20 -25					
70		14	gray slightly silty fine to medium SAND; large shell fragments and some pebble-size rock fragments; very small shell fragments.	20-30- 40-46					
75		15	tan silty fine SAND; slightly calcareous with shell and rock fragments.	1-W.O.P.					

Remarks

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PROJECT NO. 85-22005 CLIENT Hayden-Wegman
 PROJECT Resource Recovery Plant
 DRILLED BY WG-KR Boring started on 1/30/85
 Depth 152' Completed on 2/01/85
 Hammer drop 30" weight 140 lb.
 Casing size 3"/4" length 150'/85'

BORING No. B-6 SHEET NO. 4 OF 6
 LOCATION OF BORING (See Plan)
 DEPTH TO GROUND WATER TABLE -
 GROUND ELEVATION 18.0' (MSL)
 Engineer: Inst. by PDW Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES			
					10	20	40	60 80
75		15		1-W.O.H.				
80		16	tan to gray fine to medium SAND; lenses of SANDSTONE; slightly calcareous with shell fragments.	30 - 75				
85		17	gray slightly silty fine SAND; some small rock and shell fragments.	34-35- 45-35				
90		18	gray slightly silty fine SAND; some small rock and shell fragments; lenses of SANDSTONE.	30-50- 100				
95		19A	green-gray fine to medium SAND; trace of silt calcareous with numerous shell fragments; and SANDSTONE lense.	35-23- 29-29				
		19E	tan slightly silty fine SAND; traces of small shell and rock fragments.					
		20A	tan to gray fine to medium SAND; lenses of SANDSTONE; slightly calcareous with shell fragments; foul odor.	31-35- 55-58				
100		20E	gray slightly silty fine SAND; some small rock and shell fragments; lenses of SANDSTONE.					

Remarks

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PROJECT NO. 85-22005 CLIENT Hayden-WegmanPROJECT Resource Recovery PlantDRILLED BY WG-KR Boring started on 1/29/85Depth 152' Completed on 2/01/85Hammer drop 30" weight 140 lb.Casing size 3"/4" length 150'/85'BORING No. B-6 SHEET NO. 5 of 6LOCATION OF BORING (See Plan)DEPTH TO GROUND WATER TABLE ---GROUND ELEVATION 18.0' (MSL)Engineer: Inst. by PDW Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES			
					10	20	40	60 80
100				31-35- 55-58				
105								
110	21A		tan to gray fine to medium SAND; lenses of SANDSTONE; slightly calcareous with shell fragments.	32-20- 30-24				
	21B		gray slightly silty fine SAND; some small rock and shell fragments.					
115								
120	22A		tan to gray fine to medium SAND; lenses of SANDSTONE; slightly calcareous with shell fragments.	30-45- 78-98				
	22B		tan to gray fine to medium SAND, lenses of SANDSTONE, slightly calcareous with shell fragments.					
125								

Remarks

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PROJECT NO. 85-22005 CLIENT Hayden-Wegman
 PROJECT Resource Recovery Plant
 DRILLED BY WG-KR Boring started on 1/29/85
 Depth 152' Completed on 2/01/85
 Hammer drop 30" weight 140 lb.
 Casing size 3"/4" length _____

BORING No. B-6 SHEET NO. 6 OF 6
 LOCATION OF BORING (See Plan)
 DEPTH TO GROUND WATER TABLE -
 GROUND ELEVATION 18.0' (MSL)
 Engineer: Inst. by PDW Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES			
					10	20	40	60 80
125								
130		23	gray slightly silty fine SAND; some pebble-size rock fragments and traces of very small shell fragments.	48-64- 80-105				
135			6" rock lense at 137'.					
140		24	tan to gray fine to medium SAND; lenses of SANDSTONE; slightly calcareous with shell fragments.	32-27- 26-15				
145			intermittant rock lenses 147' - 150'.					
		25A	tan to gray fine to medium SAND; lenses of SANDSTONE; slightly calcareous with shell fragments.	16-23- 33-40				
150		25B	same as 25A. bottom of boring @ 152'.					

Remarks

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PROJECT NO. 85-22005 CLIENT Hayden-Wegman
 PROJECT Resource Recovery Plant
 DRILLED BY WG-KR Boring started on 2/04/85
 Depth 82' Completed on 2/04/85
 Hammer drop 30" weight 140 lb.
 Casing size 3"/4" length 80'/40'

BORING No. B-7 SHEET NO. 1 Of 4
 LOCATION OF BORING (See Plan)
 DEPTH TO GROUND WATER TABLE -
 GROUND ELEVATION 17.0' (MSL)
 Engineer: Inst. by PDW Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES				
					10	20	40	60	80
0			gray clayey fine to medium SAND, 0' - 4'.						
5		1	light gray to tan slightly silty fine to medium SAND; calcareous with numerous shell fragments.	6-6-7-8					
10		2	light gray to tan fine to medium SAND; calcareous with numerous shell fragments; trace of silt.	7-4-4-5					
15		3	brown to dark brown fine to medium SAND; trace of silt, some shell fragments; slight iron stain.	1-2-2-3					
20		4	brown to dark brown fine to medium SAND; trace of silt, some shell fragments; slight iron stain.	9-6-9-9					
25		5	dark gray fine to medium SAND with a trace of silt.	4-6-8-11					

Remarks

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PROJECT NO. 85-22005 CLIENT Hayden-Wegman
 PROJECT Resource Recovery Plant
 DRILLED BY WG-KR Boring started on 2/04/85
 Depth 82' Completed on 2/04/85
 Hammer drop 30" weight 140 lb.
 Casing size 3"/4" length 80'/40'

BORING No. B-7 SHEET NO. 2 of 4
 LOCATION OF BORING (See Plan)
 DEPTH TO GROUND WATER TABLE -
 GROUND ELEVATION 17.0' (MSL)
 Engineer: Inst. by PDW Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES				
					10	20	40	60	80
25				4-6-8-11					
30		6	gray fine to medium SAND; trace of silt with numerous shells and shell fragments.	5-9-9-19					
35		7	gray fine to medium SAND; trace of silt with some shells and shell fragments; decreasing shell content.	7-8-12-17					
40		8	gray slightly silty fine SAND; some small shell fragments.	3-6-6-8					
45		9A	green-gray clayey fine SAND with large shell fragments.	4-4-6-8					
		9B	gray to tan fine to medium SAND; traces of silt and shell.						
50		10	gray fine to medium SAND; trace of silt with numerous shells and shell fragments; very thin SANDSTONE lenses.	14-24-22-22					

Remarks

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 Consulting Geotechnical Engineers

PROJECT NO. 85-22005 CLIENT Hayden-WegmanPROJECT Resource Recovery PlantDRILLED BY WG-KR Boring started on 2/04/85Depth 82' Completed on 2/04/85Hammer drop 30" weight 140 lb.Casing size 3"/4" length 80'/40'BORING No. B-7 SHEET NO. 3 of 4LOCATION OF BORING (See Plan)DEPTH TO GROUND WATER TABLE -GROUND ELEVATION 17.0' (MSL)Engineer: Inst. by PDW Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES				
					10	20	40	60	80
50				14-24- 22-22					
55		11A	gray fine to medium SAND; trace of silt with numerous shells and shell fragments; very thin SANDSTONE lenses.	17-22- 32-34					
		11B	brown silty fine SAND; slightly calcareous with some shell and SANDSTONE lenses.						
60		12	light green-gray slightly silty, cemented fine to medium SAND; some shell and rock fragments.	24-36- 40-42					
65		13A	light green-gray slightly silty, cemented fine to medium SAND; some shell and rock fragments.	35-35- 25-40					
		13B	light green-gray slightly silty, cemented fine to medium SAND; some shell and rock fragments.						
70		14A	light green-gray slightly silty, cemented fine to medium SAND; some shell and rock fragments; foul odor.	43-33- 32-35					
		14B	gray silty fine SAND; slightly calcareous with some shell and SANDSTONE lenses.						
		15A	gray silty fine SAND; slightly calcareous with some shell and SANDSTONE lenses.	22-60- 100					
75		15B	tan silty fine SAND; slightly calcareous with some shell and SANDSTONE lenses.						

Remarks

JAMMAL & ASSOCIATES, INC.
Consulting Geotechnical Engineers

PROJECT NO. 85-22005 CLIENT Hayden-Wegman

PROJECT Resource Recovery Plant

DRILLED BY WG-KR Boring started on 2/04/85

Depth 82' Completed on 2/04/85

Hammer drop 30" weight 140 lb

Casing size 3" / 4" length 80' / 40'

BORING No. B-7 SHEET NO. 4 Of 4

LOCATION OF BORING (See Plan)

DEPTH TO GROUND WATER TABLE _____

GROUND ELEVATION 17.0' (MSL)

Engineer: Inst. by PDW Rev. by DSD

DEPTH ft	SYMBOL	SAMPLE NO.	DESCRIPTION OF SOIL	BLOWS PER 6"	"N" VALUES				
					10	20	40	60	80
75				22-60-100					
80		16	light gray slightly silty fine to medium SAND; cemented with thin SANDSTONE lenses.	29-33-31-36					
85			bottom of boring @ 82'.						

Remarks

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