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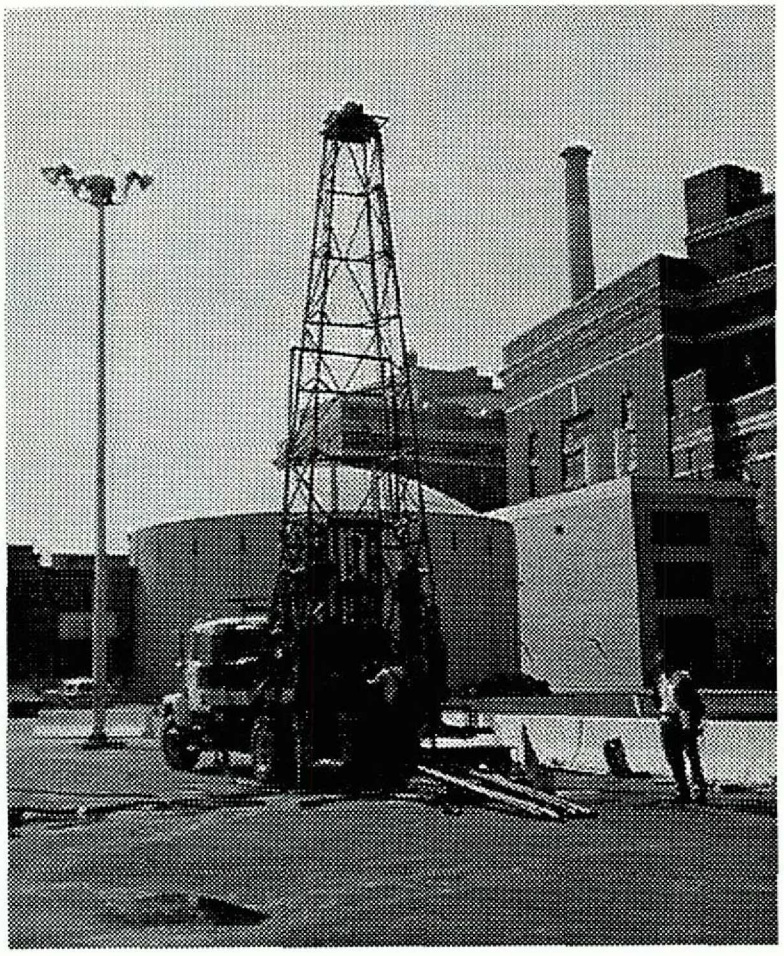
PHASE 1B ARCHAEOLOGICAL ASSESSMENT OF SOIL BORINGS IN ADVANCE OF DOCKWORK AT THE RED HOOK WATER POLLUTION CONTROL PLANT

Capital Project No. WP-284/Contract No. 104



Red Hook W.P.C.P.

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274

February 21, 1996

EXECUTIVE SUMMARY

Archaeological assessment of ten borings at the Red Hook Water Pollution Control Plant was conducted between June 23 and October 5, 1995. Previous research indicated that possibility of identifying cultural resources associated with wither the prehistoric period, nineteenth century fill, or Revolutionary War burials. The borings did not reveal artifacts associated with these sources nor any other archaeologically important material. Therefore, it has been concluded the dockwork contract will not adversely impact any significant archaeological resources. No further archaeological work is recommended.

TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

LIST OF PLATES

INTRODUCTION

In conjunction with New York City's sludge management program, a dockwork contract has been issued to upgrade dock facilities at the Red Hook Water Pollution Control Plant. A supplemental Phase 1A Archaeological Documentary Study was done for this area[1]. The report concluded that the project area had the potential to impact submerged archaeological resources. The New York City Landmarks Preservation Commission reviewed and concurred with the report's recommendations and approved a testing plan for the archaeological evaluation of soil borings. The scope of work for the plan is attached to this report as Appendix A.

The supplemental Phase 1A report discusses three types of archaeological resources which could be found at the Red Hook Water Pollution Control Plant; prehistoric resources, 19th century fill, and Revolutionary War human remains. The potential for the recovery of prehistoric resources is low. However there is the possibility that the area was utilized during that time on a temporary or intermittent basis. It seems possible that late nineteenth century fill (post-1886) exists buried beneath the silt under the planned impact area. Bulkheading and fill retention structures are unlikely to be found within the planned impact area. Historic structural changes were related to additions and removals of piers and decking and would have been assimilated into recent constructions within the decking of the plant. The potential for disturbing redeposited human remains at the Red Hook W.P.C.P. is high within, or below, the silt or fill layers underneath the decking in the project impact area only if the area had not been dredged deeper than the eighteenth century surface. The supplemental Phase 1A Documentary Study concluded it was unlikely dredging has taken place at the plant since it was built in 1977. Earlier data on dredging within the project area has never been found.

Figure 1 depicts the general location of the Red Hook Water Pollution Control Plant within New York City. Figure 2 is the current conditions survey showing the area of the plant scheduled for rehabilitation with the assigned boring locations. It depicts locations of the eleven planned borings. Boring number nine was never taken.

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[1] Stone, Linda
1994 Draft Supplemental Phase 1A Archaeological Documentary Research in Advance of Dockwork at Six Water Pollution Control Plants. Prepared for Stone & Webster Engineering Corporation. June 22, 1994.

The scope of work for archaeological assessment of soil borings was based on the conceptual design plan for rehabilitation of the deck area and included eight borings. Because of the possibility of alterations to the piers, geotechnical need increased the number of borings from eight to eleven. Field conditions, coupled with the evolving design plan, then reduced the number of borings from eleven to ten. This report provides the results from ten borings. Figure 3 is the current design plan[2].

This report was prepared for Stone & Webster Engineering Corporation by Linda Stone. The archaeological fieldwork described in this report was conducted by Linda Stone with the assistance of Patience Freeman. Laboratory analysis of recovered bone was done by Dr. Anagnosti Agelarakis of Adelphi University. Borings were taken by Testwell-Craig and Jersey Boring for the Department of General Services, Subsurface Exploration Bureau. Michael Greenman, Edward Wegener, and Paul Magnani of DGS provided data and scheduling updates during the coarse of the project. Ron Wrucke of Stone & Webster coordinated project management. Vinod Mehta and William White of Stone & Webster coordinated scheduling and facilitated receipt of drilling logs.

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[2] Stone & Webster Engineering Corp. and Han-Padron Associates
1995 Red Hook General Plan, Preliminary. Modification/Reconstruction of Docking Facilities. Drawing RH-PS-2. July 6, 1995.

METHODOLOGY

Field Testing

Boring locations were marked out opportunisitcally in a rough grid pattern (see Figure 2). Drilling began on June 23, 1995 by Testwell-Craig. The project became difficult to drill because of large boulders at depths below the concern of encountering archaeological resources. However these difficulties resulted in equipment problems which caused delays. Testwell-Craig ultimately switched to heavier duty equipment which still had difficulties getting through boulders. After determining these were insurmountable problems, DGS switched contractors to Jersey Boring to complete the job. However, Jersey Boring too had difficulties drilling through the boulders. Finally, after completion of the tenth boring, a decision to abandon the final boring was made. Drilling on the project was completed on October 5, 1995.

Core samples were taken with a two inch diameter split spoon and were two feet long. Continuous sampling was conducted to depths of at least 44 feet below ground surface or until culturally sterile sand deposits were encountered. Drilling continued below those depths at five foot intervals to bedrock, for engineering purposes.

All samples recorded by the archaeologist were laid out on corrugated roofing material (see Plate 1). Each sample was separated by a glass jar, later used for soil storage. The boring contractor put the boring number, sample number and blow counts on the lid of each sample. In cases where the archaeologist was not present at the date of drilling, the contractor would cover the samples on the roofing material with a tarp. Archaeological recording was generally done while drilling was in progress and in most cases was finished within three days of drilling completion. The archaeologist troweled through each sample for artifacts or inclusions and recorded that data along with sample number, location, depth, recovery, Munsell color, and soil texture. This data is attached to this report as Appendix B. The exceptions to this methodology are Borings 7 and 10. These borings were jarred prior to recording. Therefore recovery data was not available. However, in its place are the number of jars used for each sample. Jars measured two inches in diameter by five inches long for all of Boring 7 and Boring 10 up to sample 15 when jar size changed to three and a half inches in both diameter and length. In addition to the archaeological boring data, analysis for this report also included review of DGS boring logs. Copies of these are attached as Appendix C.

Artifact Recovery

Artifacts known in the field to be non-diagnostic or modern materials were noted on the filed records but not retained. Retained artifacts were also marked on these forms. All artifacts listed on the field records are included in the stratigraphy summary of the boring logs (see Appendix B). Very little artifactual material was identified. The only material retained was two fragments of bone from Boring 1, sample 9 and shell from Boring 5, sample 2.

RESULTS

Stratigraphy

Between 15 - 27 soil samples were recorded by the archaeologist for each boring. All tests contained asphalt and concrete decking or pier above a void and/or water before reaching the underlaying deposits. These deposits were encountered at between 10 - 48 feet below the deck surface. As expected, the borings closest to fast land, those to the south, encountered soil deposits at shallower depths than those to the north. Specific locations can be identified using *Figure* 2. Figures 4 - 8 graphically summarize the soil data of Appendices B and C by showing various projected cross sections of the project area. Please note these figures are scaled vertically but not horizontally.

In most borings the first soil deposit was an oily organic soil, often with a strong petroleum odor. This deposit ranged from 8 - 33 feet thick. However 5 - 14 feet of sand were found above the organic deposit in Borings 3 and 7, both located in the southern part of the project area. The organic deposit was underlain with silty sand then sand in most borings before continuous sampling was stopped. However Boring 1 did not have the silty sand deposit and Borings 4, 8, and 10 had an additional sand lens above the silty sand.

The organic soil and the sand above it are most likely relatively recent deposits, washing in over the years with the tides. The petroleum odor may be the result of emission from boats. It is possible the early surface may be below this stratum or that the organic deposit washed in after dredging. During the supplemental Phase 1A documentary research, dredging data from the adjacent Navy Yard was found. It proved that dredging to a depth of fifty-one feet was done in that area in 1941 (Stone 1994:21). One could speculate a similar dredging program within the project area. However records confirming this were never found.

Artifacts

Almost all of the artifacts identified from the Red Hook borings were found in organic deposits or gravelly or pebbly soils. No artifacts were identified at or below the depth of the silty sand. The most predominant artifact found in the Red Hook borings was wood. In several cases the driller felt the source of the wood was the piles which support the deck and piers. Therefore one may suspect that perhaps all of the wood identified within the borings originated from the piles. Even if this conjecture is not reasonable, the value of the wood to interpreting the archaeological significance of the area is minimal.

A similar value may be given to shell. Five samples contained shell. The shell was isolated in all except Boring 5, sample 2 which contained a small cluster of immature soft shell clam shells, including four varied sized valves as well as five other fragments. Because of the size and density of the shell deposits, prehistoric shell midden presence was ruled out.

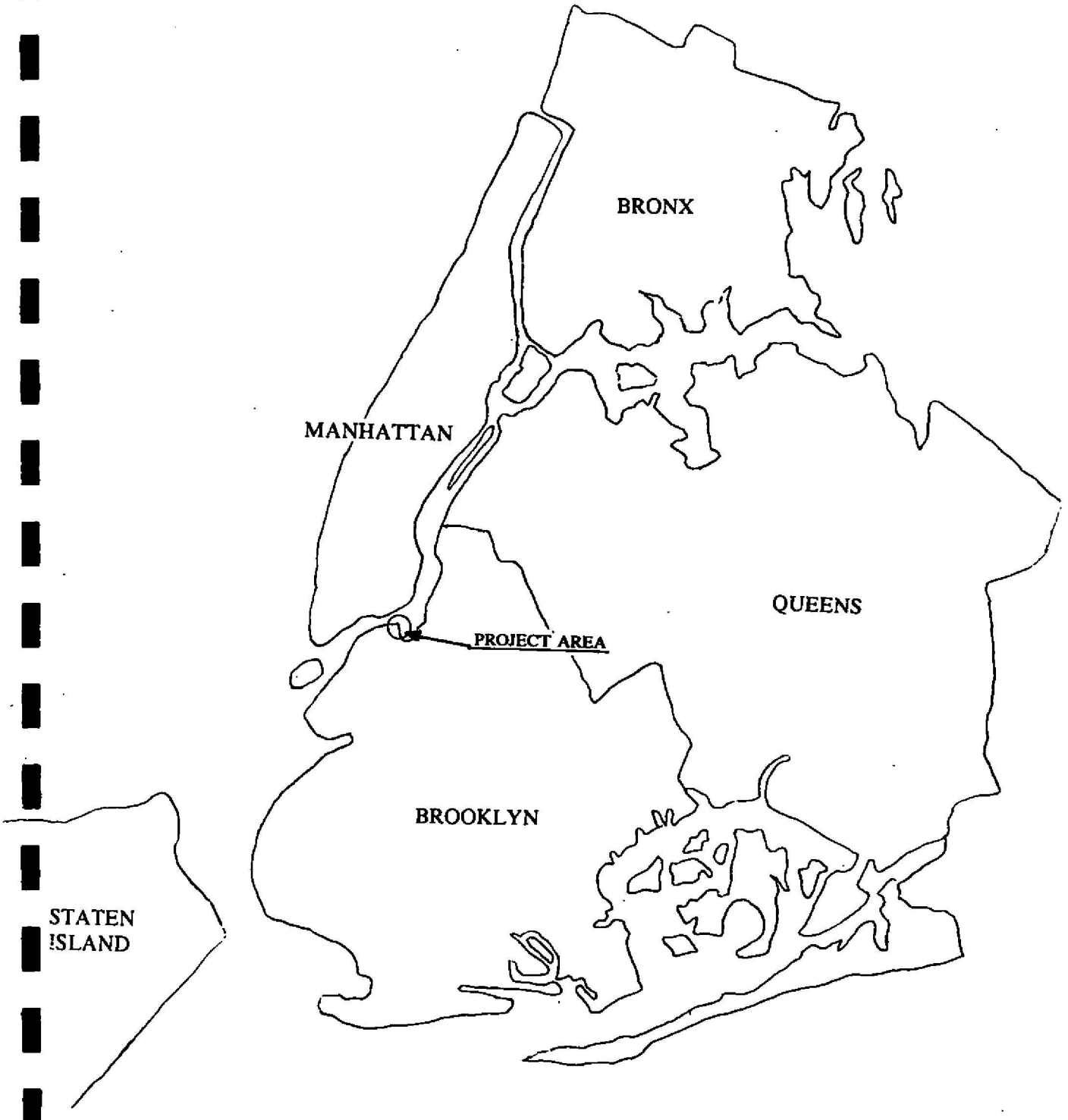
Other artifacts which were not retained include coal, metal, slag, brick fragments, pipe fragments, tile, and bristle. The bristle likely came from the brush used to clean the metal core sampler. The pipe fragments were of the red clay variety common in sewers and other conduits. The tile fragment was questionable. The remainder of these materials are non-diagnostic. Therefore they are also of no assistance in establishing archaeological significance.

Only one other artifact type was recovered. This was two small fragments of bone found in Boring 1, sample 9. The bone was of interest because of the possibility of encountering displaced human remains within the project area. The size of the fragments precluded morphological identification. The samples were given to Dr. Anagnosti Agelarakis of Adelphi University, a physical anthropologist, who performed a thin section analysis to examine the cortical-cancellous bone surface. He concluded with the highest degree of probability that both samples were not human bone.

CONCLUSIONS AND RECOMMENDATIONS

Ten soil borings conducted at the Red Hook Water Pollution Control Plant revealed no evidence of potentially significant archaeological resources. Resources associated with three different temporal deposits were considered; prehistoric resources, nineteenth century fill, and Revolutionary War human remains. No prehistoric lithic tools or ceramics were recovered. Although shell fragments were found in a number of samples, their association with prehistoric shell middens was dismissed based on density and size of specimens. No specific datable fill deposits were identified in the Red Hook borings either. However it is possible late nineteenth century fill was placed in the area and now exists below the organic silt deposit, although this cannot be determined based on the cultural materials identified in the borings. No fragments of possible Revolutionary War human remains were recovered from the Red Hook borings either. The two bone fragments recovered are considered to be non-human. No other cultural material found within the Red Hook borings was considered archaeologically important.

As a result of the archaeological assessment of the Red Hook Water Pollution Control Plant borings, it has been concluded the dockwork contract has virtually no potential for disturbing significant archaeological resources. Therefore no further archaeological work is recommended for the dockwork plans as shown in Figure 3 of this report.



NOT TO SCALE

Figure 1 The location of the Red Hook Water Pollution Control Plant on a schematic map of New York City.

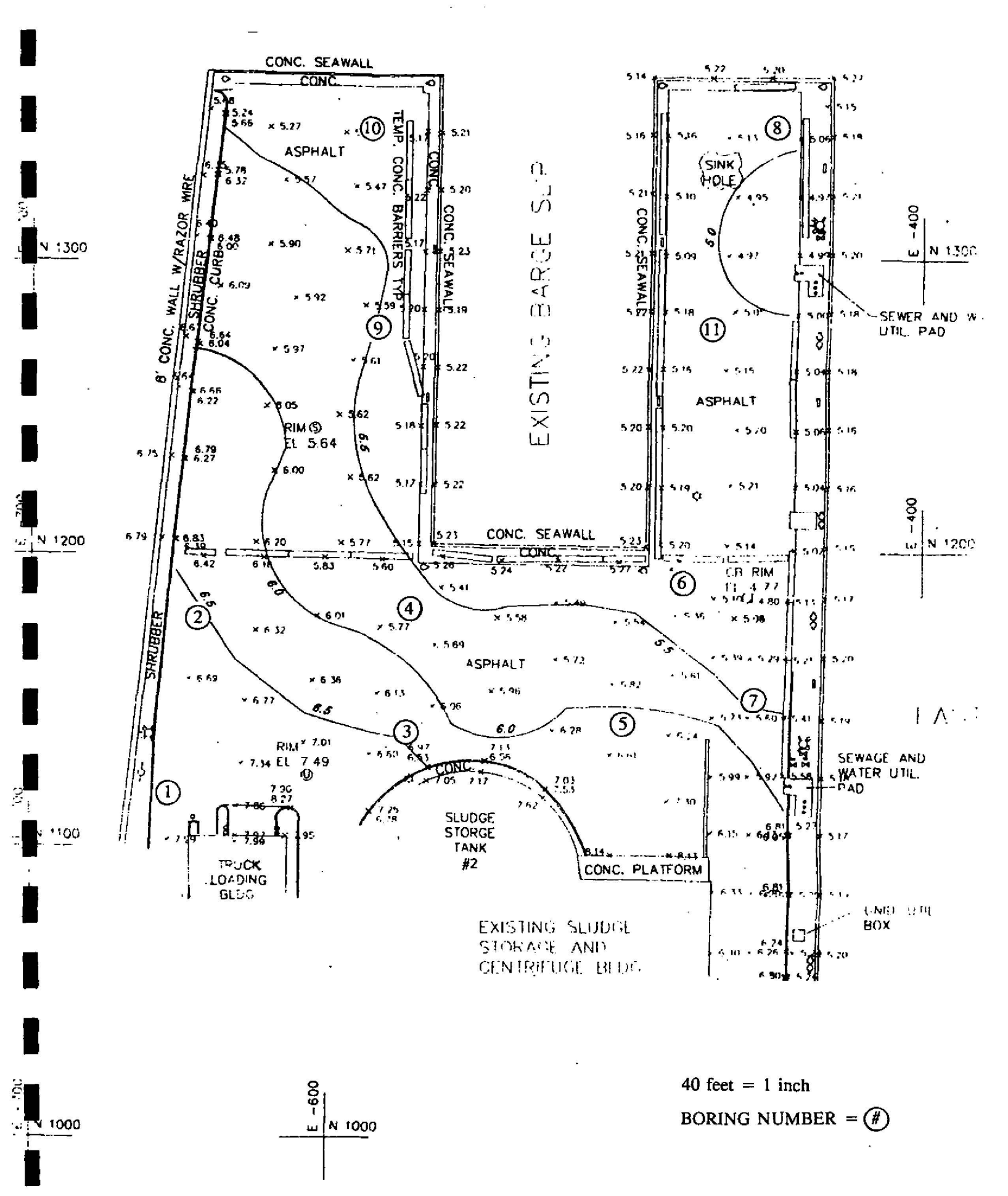
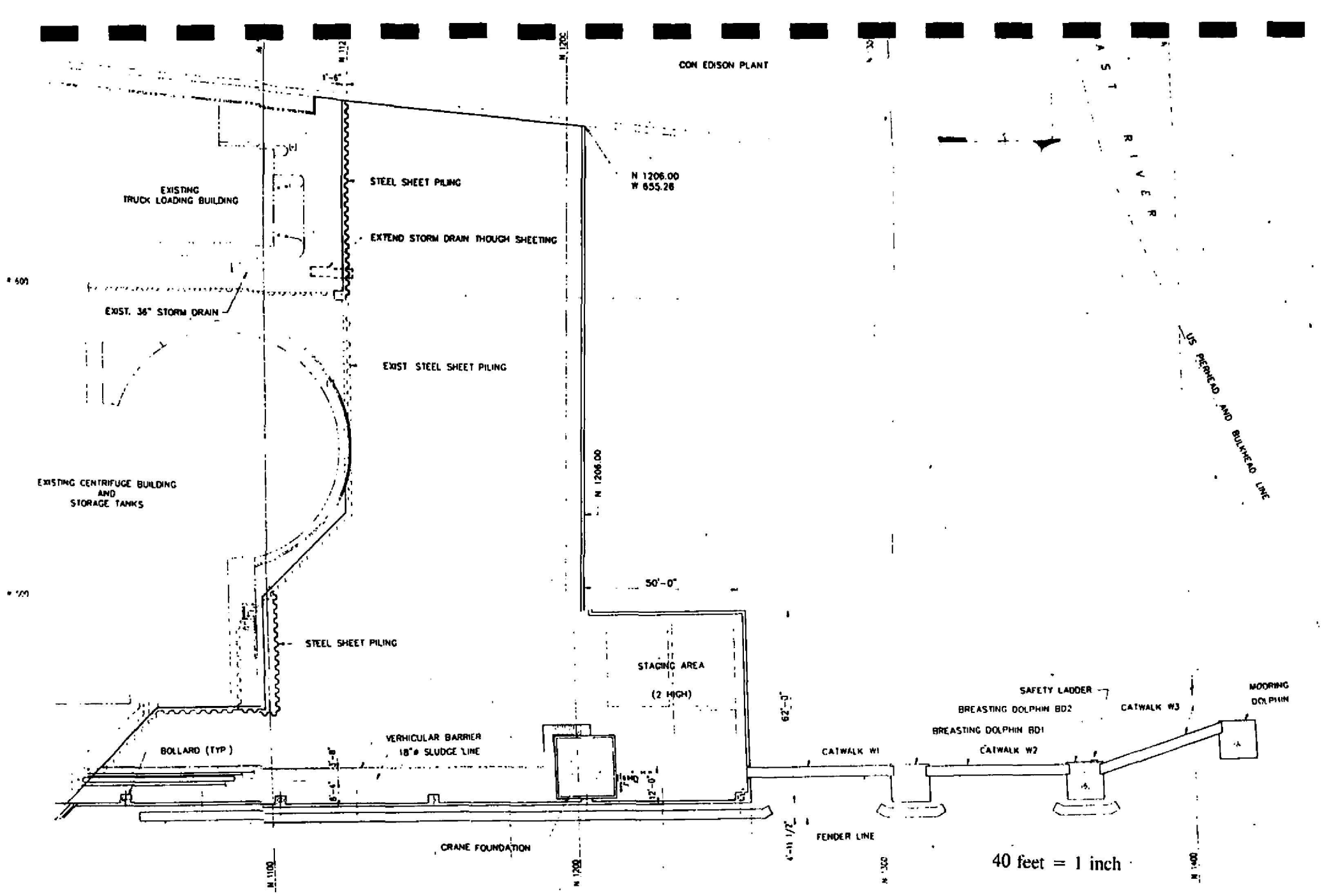


Figure 2 Existing conditions and boring locations at the area of the Red Hook Water Pollution Control Plant scheduled for rehabilitation.



GENERAL PLAN

Figure 3 Red Hook Water Pollution Control Plant General Design Plan.

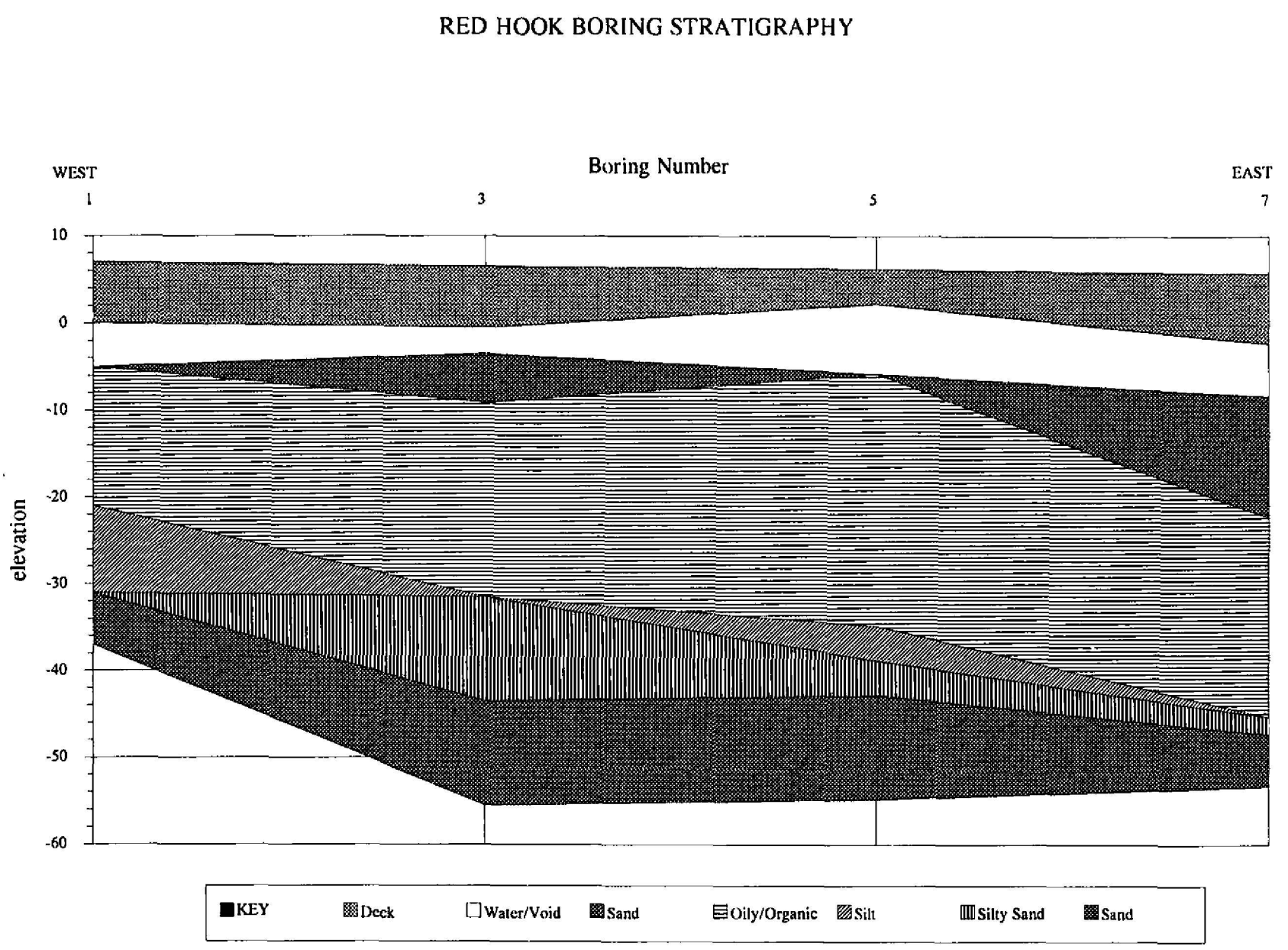


Figure 4 *Generalized boring stratigraphy along the southern area of the decking at the Red Hook Water pollution Control Plant.*

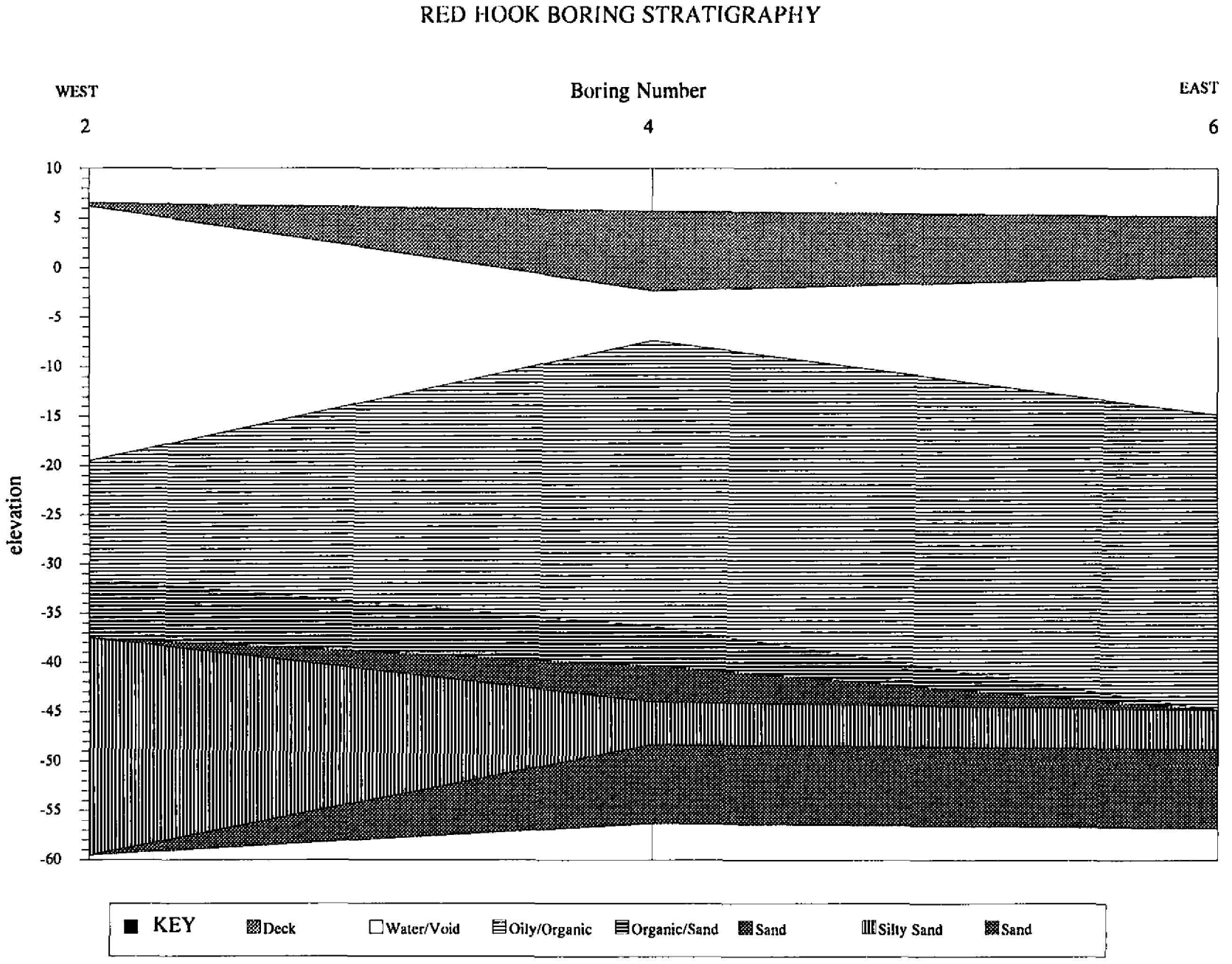


Figure 5 Generalized boring stratigraphy along the northern area of the decking at the Red Hook Water Pollution Control Plant.

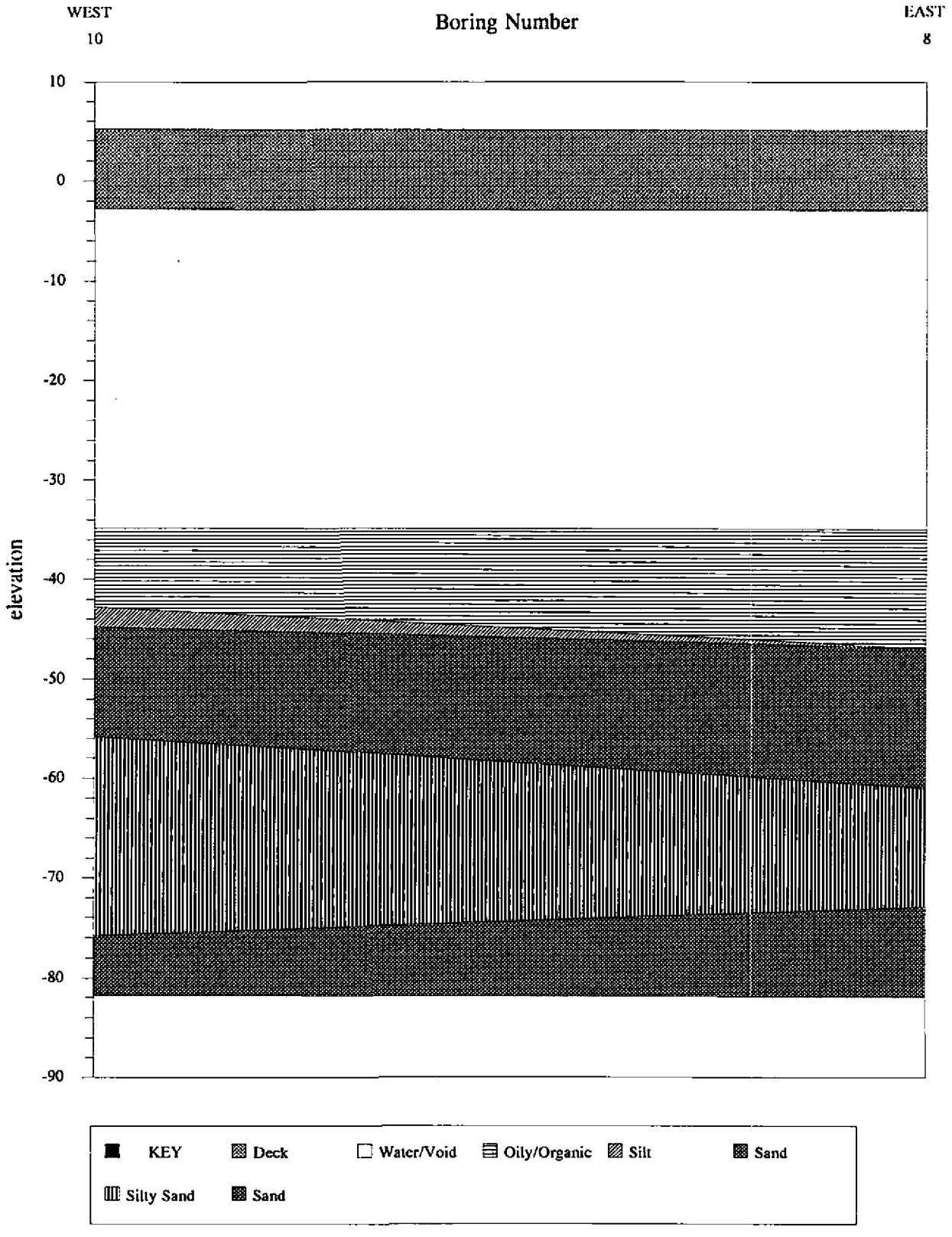


Figure 6 Generalized boring stratigraphy along the northern area of the decking at the Red Hook Water Pollution Control Plant.

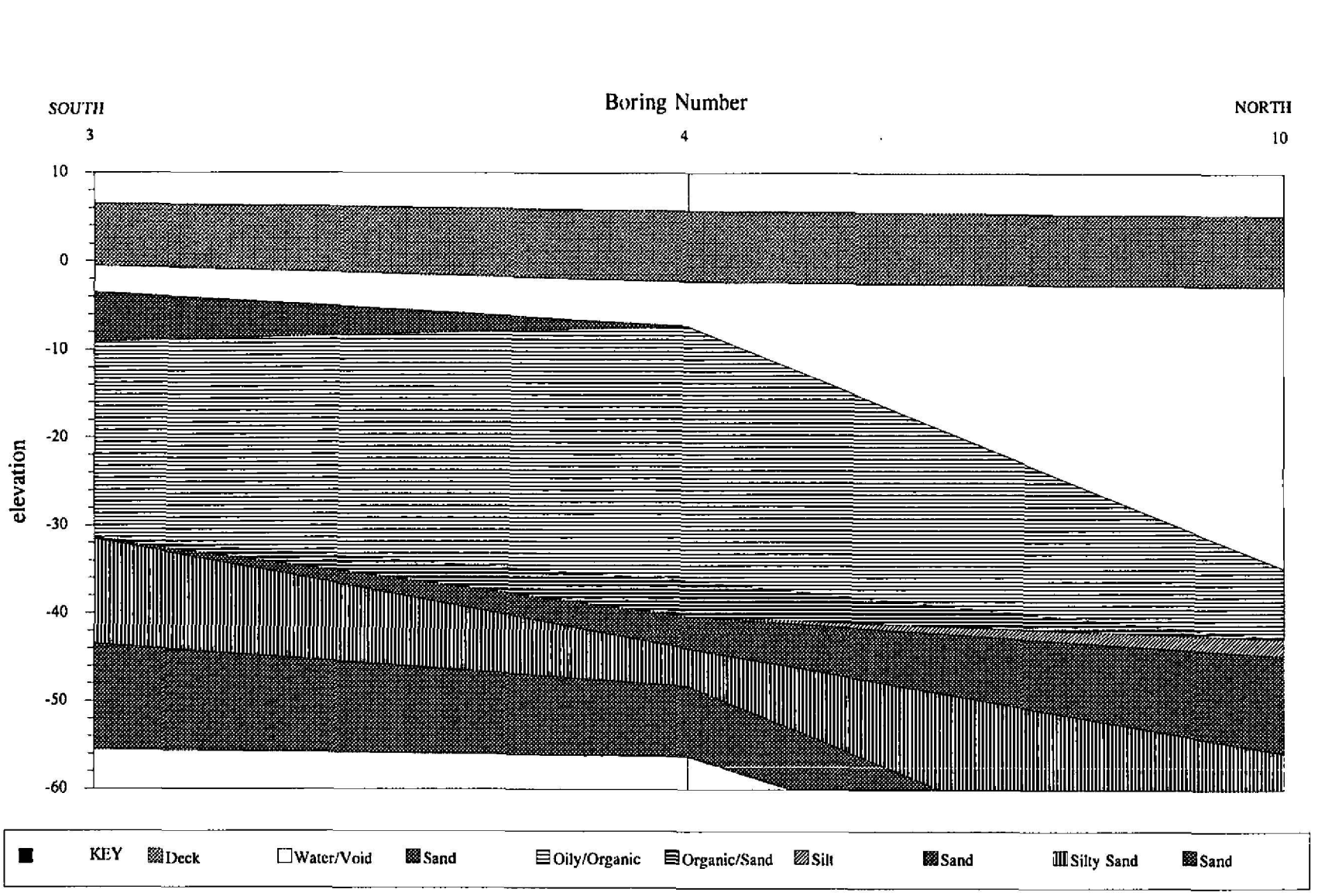


Figure 7 Generalized boring stratigraphy along the western decking and extending north within the Red Hook Water Pollution Control Plant.

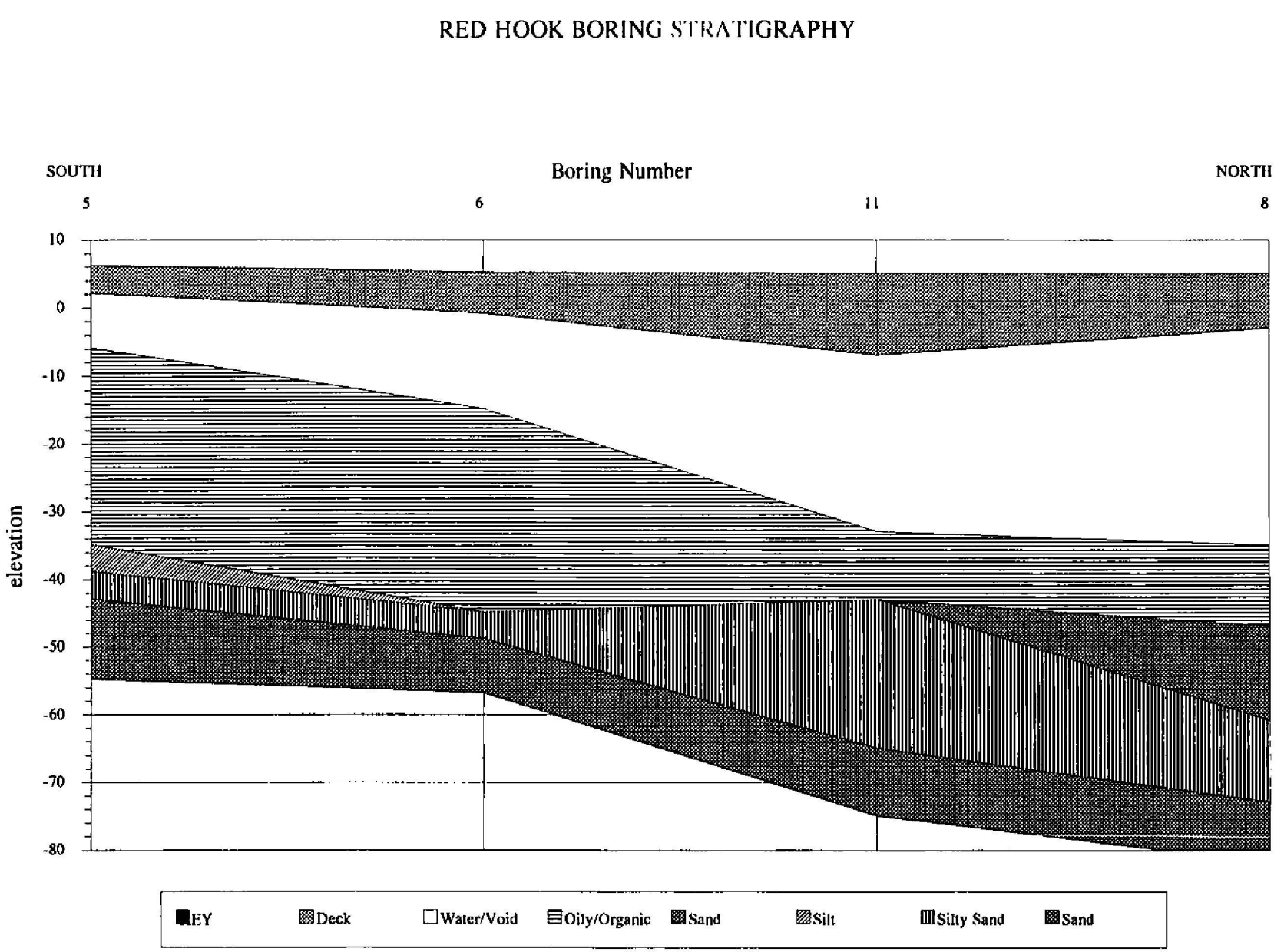


Figure 8 Generalized boring stratigraphy along the eastern decking and extending north within the Red Hook Water Pollution Control Plant.

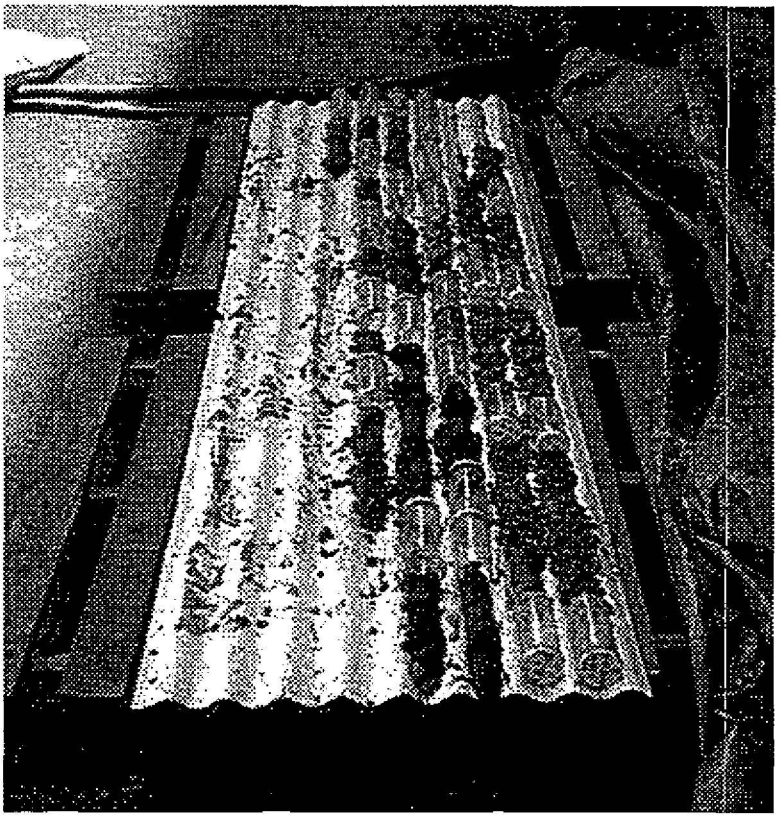


Plate 1 Soil from Borings 2 and 4 at the Red Hook Water Pollution Control Plant.

Appendix A

Scope of Work for Phase 1B Archaeological Testing at The Red Hook Water Pollution Control Plant

SCOPE OF WORK
FOR PHASE 1B ARCHAEOLOGICAL TESTING
AT THE RED HOOK WATER POLLUTION CONTROL PLANT
IN ADVANCE OF DOCKWORK

November 3, 1994

Assessment for the potential of the dockwork contract to adversely impact archaeological resources at the RED HOOK Water Pollution Control Plant was made in the supplemental Phase 1A archaeological documentary research report covering six New York City Water Pollution Control Plants. A high potential for the recovery of information on historic resources in the form of submerged, redeposited human remains, dating to the Revolutionary War period, was found to exist in the area of planned impact at the RED HOOK plant. The RED HOOK plant also has a moderate potential for the preservation of archaeological resources within late nineteenth century fill. This area of planned impact is depicted in Figure 9 of the Supplemental Phase 1A report; the conceptual design plan (see attached). It was recommended that the archaeological testing at the RED HOOK plant should take the form of archaeological analysis of soil boring data. Further, it was recommended that these borings be done in conjunction with planned geotechnical borings, incorporating some modification.

Archaeological analysis of the soil borings will be done through both evaluation of the boring logs and first hand trowel inspection and documentation of the soil cores by the archaeologist. The boring methodology will include continuous sampling through the depth of planned impact or to glacial subsoil, whichever is shallowest. Based on the earlier boring logs, a depth of minus 45 feet seems appropriate for continuous sampling. The archaeologist will be present to inspect and document the soil cores soon after they are made or the soils will be retained with their integrity intact until the archaeologist can evaluate them. The soils will be inspected as soon after they are sampled as possible, preferably the same or following day. The archaeologist will record soil stratigraphy in both written and graphical form; describing soil color, texture, inclusions and depths of strata. Appropriate drawings will be made and photographs taken. Soils will be evaluated for the presence of any potential archaeological remains. Additionally, the geotechnical boring logs will be available to the archaeologist.

The original RED HOOK boring plan called for only one boring within the area of planned impact. This location is depicted in Figure 52 of the Supplemental Phase 1A report (see attached). This small sample was considered inadequate to determine the presence or absence of archaeological resources. Therefore an increase in the number of borings at the RED HOOK plant to eight was recommended. This increased number of borings will cover the entire decking area, both the container staging and planned area for rehabilitation. Two parallel rows of four borings each, spaced at fifty foot intervals, is now recommended to evaluate for the presence of archaeological remains at the RED HOOK plant.

Upon completion of Phase IB archaeological testing at the RED HOOK site, a report of the findings will be prepared for New York City Landmarks Preservation Commission review. The report will include a presentation of the field work with depiction of the actual location of tests, stratigraphy within the soil cores and archaeological interpretation of the testing results with findings of the existence or non-existence of cultural materials. The field report will be submitted within two weeks following the completion of the field work and receipt of geotechnical boring logs. As with the earlier report, review comments will be incorporated into the final report.

Should any archaeological resources or any soils with the potential to contain archaeological resources be identified, Phase II archaeological work, additional borings or cores, may be recommended. This additional evaluation of underwater archaeological resources would define their significance and extent. Should resources warranting Phase II level archaeological sampling be identified, the archaeologist will notify the appropriate review agency personnel to request a site visit prior to proceeding with any further archaeological work.

LINDA STONE, MA, SOPA

Appendix B

Red Hook Water Pollution Control Plant Phase 1B Boring Stratigraphy

RED HOOK WATER POLLUTION CONTROL PLANT
PHASE 1B BORING STRATIGRAPHY

BORING #	OPEN ELEV	SAMPLE	DEPTH	RECOVERY	MUNSELL	COLOR	TEXTURE	ARTIFACTS
1	7.0	1	12.0 - 14.0	0.6	N2.5/	black	gravelly, oily	
		2	14.0 - 16.0	0.2			wood & quartz	
		3	16.0 - 18.0	0.3	N2.5/	black	gravelly,oily,muck	metal, slag, coal
		4	18.0 - 20.0	0.3	N2.5/	black	woody muck	cut wood
		5	20.0 - 22.0	1.6	N2.5/	black	smelly,organic,oily	vegetation, wood
		6	22.0 - 24.0	1.7	N2.5/	black	smelly,organic,muck	wood
		7	24.0 - 26.0	0.6	N2.5/	black	smelly,organic,oily	coal
		8	26.0 - 28.0	0.8	N2.5/	black	smelly,organic,oily	brick, fiber bristle
		9	28.0 - 30.0	0.6	10YR3/1	very dark gray	smelly,gravelly silt	bone, wood, chalk?
		10	30.0 - 32.0	0.2	10YR3/1	very dark gray	smelly,gravelly silt	
		11	32.0 - 34.0	0.8	N3/	very dark gray	smelly,gravelly silt	slag
		12	34.0 - 36.0	0.5	N3/	very dark gray	smelly coarse gravel	coal, shell, brick
		13	36.0 - 38.0	0.2	10YR4/1	dark gray	silt	quartz
		14	38.0 - 40.0	1.5	10YR4/1	dark gray	micaceous sand	
		15	40.0 - 42.0	1.0	10YR4/1	dark gray	coarser sand	
		16	42.0 - 44.0	1.3	10YR4/1	dark gray	coarse sand	
		17	-					
		18	-					
		19	-					
		20	-					
		21	-					
		22	-					
		23	-					
		24	-					
		25	-					
		26	-					
		27	-					
2	6.5	1	10.0 - 12.0	0.0			pebbles	wood
		2	20.0 - 22.0	1.0			creosoted wood	
		3	22.0 - 24.0	0.9	10YR6/2	light brownish gray	coarse sand	
		4	24.0 - 26.0	0.0				
		5	26.0 - 28.0	0.0			liquid oil	
		6	28.0 - 30.0	1.0	N2.5/	black	smelly,organic,muck	wood
		7	30.0 - 32.0	0.0				
		8	32.0 - 34.0	0.8	N2.5/	black	smelly,organic,oily	
		9	34.0 - 36.0	1.4	N2.5/	black	organic, oily	
		10	36.0 - 38.0	1.3	N2.5/	black	organic, oily	coal
		11	38.0 - 40.0	1.8	N2.5/	black	sandy, oily organic	cut wood
		12	40.0 - 42.0	0.8	N2.5/	black	sandy, oily organic	
		13	42.0 - 44.0	0.7	N2.5/	black	sandier,oily organic	
		14	50.0 - 52.0	0.7	10YR4/1	dark gray	rocky,fine silt sand	
		15	52.0 - 54.0	0.6	10YR4/1	dark gray	wetter and rockier	
		16	54.0 - 56.0	0.5	10YR4/2	dark gray brown	fine silty sand	
		17	56.0 - 58.0	1.1	10YR4/2	dark gray brown	fine silty sand	
		18	58.0 - 60.0	1.0	10YR4/2	dark gray brown	fine silty sand	
		19	60.0 - 62.0	0.5	10YR4/2	dark gray brown	fine silty sand	
		20	62.0 - 64.0	0.9	10YR4/2	dark gray brown	fine silty sand	
		21	64.0 - 66.0	1.1	10YR4/2	dark gray brown	fine silty sand	
		22	-					
		23	-					
		24	-					
		25	-					
		26	-					
		27	-					

RED HOOK WATER POLLUTION CONTROL PLANT
PHASE 1B BORING STRATIGRAPHY

BORING #	OPEN ELEV	SAMPLE	DEPTH	RECOVERY	MUNSELL	COLOR	TEXTURE	ARTIFACTS
3	6.5	1	10.0 - 12.0	0.2	10YR4/3	medium brown	wet coarse sand	
		2	15.0 - 17.0	0.8	N2.5/	black	moist organic	brick, wood
		3	20.0 - 22.0	0.2	N2.5/	black	smelly, organic muck	
		4	22.0 - 24.0	0.8	N2.5/	black	smelly,organic,oily	wood
		5	24.0 - 26.0	1.4	N2.5/	black	smelly,organic,oily	cut wood
		6	26.0 - 28.0	1.2	N2.5/	black	smelly,organic,oily	wood
		7	28.0 - 30.0	1.9	N2.5/	black	smelly,organic,oily	wood
		8	30.0 - 32.0	0.2	N2.5/	black	wet organic muck	
		9	32.0 - 34.0	1.8	N2.5/	black	wet organic muck	
		10	34.0 - 36.0	1.6	N2.5/	black	wet organic muck	vegetation
		11	36.0 - 38.0	0.9	N2.5/	black	sandy organic muck	wood
		12	38.0 - 40.0	0.8	N2.5/	black	sandy organic	wood
		13	40.0 - 42.0	0.5	N3/	very dark gray	sandy organic silt	wood
		14	42.0 - 44.0	0.7	N3/	very dark gray	sandy organic silt	wood
		15	44.0 - 46.0	0.4	N3/	very dark gray	sandy organic silt	
		16	46.0 - 48.0	0.3				pile?
		17	48.0 - 50.0	1.2	10YR6/2	light brownish gray	micaceous silt	pile?
		18	50.0 - 52.0	1.2	10YR5/4	yellowish brown	coarse sand	
		19	52.0 - 54.0	1.1	10YR5/4	yellowish brown	coarse sand	
		20	54.0 - 56.0	1.2	10YR5/6	yellowish brown	coarse sand	
		21	56.0 - 58.0	1.1	10YR5/6	yellowish brown	coarse sand	
		22	58.0 - 60.0	1.3	10YR5/6	yellowish brown	coarse sand	
		23	60.0 - 62.0	0.9	10YR5/6	yellowish brown	coarse sand	
		24	-					
		25	-					
		26	-					
		27	-					
4	5.7	1	0.0 - 8.0	0.0			reinforced concrete	
		2	8.0 - 13.0	0.0			void/water	
		3	13.0 - 17.0	0.8	N2.5/	black	smelly, oily muck	
		4	17.0 - 19.0	1.2	N2.5/	black	smelly, oily muck	
		5	19.0 - 21.0	1.7	N2.5/	black	smelly, oily muck	
		6	21.0 - 23.0	0.0	N2.5/	black	smelly, oily muck	
		7	23.0 - 25.0	0.0	N2.5/	black	smelly, oily muck	
		8	25.0 - 27.0	1.4	N2.5/	black	smelly, oily muck	
		9	27.0 - 29.0	0.0	N2.5/	black	smelly, oily muck	
		10	29.0 - 40.0	0.0	N2.5/	black	organic	
		11	40.0 - 42.0	0.8	N2.5/	black	organic	
		12	42.0 - 44.0	1.5	N2.5/	black	sandy organic	
		13	44.0 - 46.0	0.0	5Y2.5/1	black	sandy organic	
		14	46.0 - 48.0	1.5	10YR3/1	very dark gray	very fine sand	pipe frag.
		15	48.0 - 50.0	1.4	10YR5/1	gray	pebbly sand	pipe?,tile?,shell,brick
		16	50.0 - 52.0	1.3	10YR5/1	gray	fine silty sand	
		17	52.0 - 54.0	1.1	10YR5/1	gray	fine siltier sand	
		18	54.0 - 56.0	0.9	10YR3/1	very dark gray	mottled fine sand	
		19	56.0 - 58.0	1.5	10YR3/1	very dark gray	coarser sand	
		20	58.0 - 60.0	1.3	10YR3/1	very dark gray	coarser sand	
		21	60.0 - 62.0	1.6	10YR3/1	very dark gray	finer sand	shell frag
		22	-					
		23	-					
		24	-					
		25	-					
		26	-					
		27	-					

RED HOOK WATER POLLUTION CONTROL PLANT
PHASE 1B BORING STRATIGRAPHY

BORING #	OPEN ELEV	SAMPLE	DEPTH	RECOVERY	MUNSELL	COLOR	TEXTURE	ARTIFACTS
5	6.2	1	25.0 - 27.0	0.8	N2.5/	black	dried organic silt	
		2	27.0 - 29.0	1.1	N3/	very dark gray	dried organic silt	shell
		3	29.0 - 31.0	0.9	N3/	very dark gray	dry organic silt	
		4	31.0 - 33.0	1.1	N3/	very dark gray	dry organic silt	
		5	33.0 - 35.0	0.6	N3/	very dark gray	dry organic silt	
		6	35.0 - 37.0	1.4	N3/	very dark gray	dry organic silt	wood
		7	37.0 - 39.0	1.3	N2.5/	black	dry organic silt	
		8	39.0 - 41.0	1.3	N3/	very dark gray	dry organic silt	
		9	41.0 - 43.0	1.4	10YR4/1	dark gray	organic silt	bark?
		10	43.0 - 45.0	0.9	10YR4/1	dark gray	organic silt	
		11	45.0 - 47.0	1.7	10YR3/1	very dark gray	sandy silt	wood
		12	47.0 - 49.0	1.5	10YR4/1	dark gray	sandy silt	wood
		13	49.0 - 51.0	1.2	10YR4/1	dark gray	micaceous sand	
		14	51.0 - 53.0	1.3	10YR4/1	dark gray	micaceous sand	
		15	53.0 - 55.0	1.0	10YR4/1	dark gray	micaceous sand	
		16	55.0 - 57.0	1.0	10YR4/1	dark gray	coarse sand	
		17	57.0 - 59.0	0.8	10YR4/1	dark gray	coarse sand	
		18	59.0 - 61.0	0.8	10YR4/1	dark gray	coarse sand	
		19	-					
		20	-					
		21	-					
		22	-					
		23	-					
		24	-					
		25	-					
		26	-					
		27	-					
6	5.2	1	30.0 - 32.0	0.9	N3/	very dark gray	gravelly	
		2	32.0 - 34.0	0.7	N3/	very dark gray	gravelly	coal flecks
		3	34.0 - 36.0	0.4	10YR5/1	gray	dry, oily silt	wood
		4	36.0 - 38.0	0.4	10YR5/1	gray	dry, oily silt	
		5	38.0 - 40.0	0.4	10YR5/1	gray	dry, oily silt	wood
		6	40.0 - 42.0	0.3	N3/	very dark gray	moister organic silt	
		7	42.0 - 44.0	0.5	N3/	very dark gray	moist organic silt	
		8	44.0 - 46.0	1.2	N3/	very dark gray	moist organic silt	
		9	46.0 - 48.0	0.7	5GY4/1	dark greenish gray	dry, oily silt	wood
		10	48.0 - 50.0	0.6	N3/	very dark gray	dry silt	wood
		11	50.0 - 52.0	0.7	N6/	gray	fine micaceous sand	
		12	52.0 - 54.0	1.4	10YR4/1	dark gray	micaceous silty sand	
		13	54.0 - 56.0	1.1	10YR4/4	dark yellowish brown	coarse sand	
		14	56.0 - 58.0	0.8	10YR4/4	dark yellowish brown	coarse sand	
		15	58.0 - 60.0	1.1	10YR4/1	dark gray	micaceous sand	
		16	60.0 - 62.0	0.7	10YR4/1	dark gray	micaceous sand	
		17	-					
		18	-					
		19	-					
		20	-					
		21	-					
		22	-					
		23	-					
		24	-					
		25	-					
		26	-					
		27	-					

RED HOOK WATER POLLUTION CONTROL PLANT
PHASE 1B BORING STRATIGRAPHY

BORING #	OPEN ELEV	SAMPLE	DEPTH	RECOVERY	MUNSELL	COLOR	TEXTURE	ARTIFACTS
7	5.7	1	15.0 - 16.5	1.0	10YR4/4	dark yellowish brown	coarse sand	
		2	20.0 - 21.5	1.0	10YR4/4	dark yellowish brown	coarse sand	
		3	25.0 - 26.5	1.0	10YR4/1	dark gray	coarse sand	
		4	30.0 - 32.0	2.0	10YR3/1	very dark gray	organic silt	
		5	32.0 - 34.0	2.0	10YR3/1	very dark gray	oily organic silt	
		6	36.0 - 37.6	2.0	N2.5/	black	organic silt	
		7	37.6 - 39.0	1.0	N2.5/	black	organic silt	
		8	41.0 - 43.0	4.0	N2.5/	black	organic silt	
		9	45.0 - 47.0	2.0	N2.5/	black	organic silt	
		10	49.0 - 51.0	1.0	N2.5/	black	organic silt	
		11	51.0 - 53.0	1.0	10YR6/1	gray/light gray	fine silty sand	
		12	53.0 - 55.0	2.0	10YR4/1	dark gray	coarse sand	wood
		13	55.0 - 57.0	1.0	10YR4/1	dark gray	coarse sand	
		14	57.0 - 59.0	1.0	10YR4/1	dark gray	coarse sand	
		15	59.0 - 61.0	1.0	10YR5/3	brown	fine silty sand	
		16	65.0 - 66.5	1.0	10YR4/2	dark grayish brown	fine silty sand	
		17	70.0 - 72.0	1.0	10YR5/1	gray	fine silty sand	
		18	75.0 - 77.0	1.0			small rocks	
		19	80.0 - 82.0	1.0	10YR4/1	dark gray	coarse sand	
		20	85.0 - 87.0	1.0		brown	coarse sand	
		21	90.0 - 92.0					
		22	95.0 - 96.5	1.0		brown	wet sand	
		23	100.0 - 110.5	1.0		brown	pebbly	
		24	105.0 - 106.5	1.0			2 small pebbles	
		25	110.0 - 111.5	1.0			wet, pebbly	
		26	115.0 - 116.5	1.0		grayish brown	coarse pebbly sand	
		27	120.0 - 121.5	1.0		grayish brown	coarse pebbly sand	
8	5.1	1	45.0 - 46.5	0.3	10YR2/1	black	organic silt	
		2	50.0 - 52.0	0.6	10YR3/1	very dark gray	organic sandy silt	wood, shell, bark
		3	52.0 - 54.0	0.6	10YR3/1	very dark gray	coarse sand	
		4	54.0 - 56.0	0.4	10YR4/3	medium brown	coarse sand	
		5	56.0 - 58.0	0.7	10YR3/3	dark brown	coarse sand	
		6	58.0 - 60.0	0.3	10YR3/3	dark brown	coarse sand	
		7	60.0 - 62.0	0.4	10YR4/3	meduim brown	coarse sand	
		8	62.0 - 64.0	1.0	10YR4/3	meduim brown	coarse sand	
		9	64.0 - 66.0	0.7	10YR4/3	meduim brown	coarse sand	
		10	66.0 - 68.0	0.6	10YR4/1	dark gray	fine silty sand	
		11	68.0 - 70.0	0.9	10YR4/1	dark gray	fine silty sand	
		12	70.0 - 72.0	1.0	10YR4/1	dark gray	silty clay	
		13	75.0 - 77.0	1.0	10YR4/1	dark gray	fine silty sand	
		14	80.0 - 82.0	0.6	10YR4/3	meduim brown	coarse sand	bark plug
		15	85.0 - 87.0	0.7	10YR4/3	medium brown	coarse sand	
		16	-					
		17	-					
		18	-					
		19	-					
		20	-					
		21	-					
		22	-					
		23	-					
		24	-					
		25	-					
		26	-					
		27	-					

RED HOOK WATER POLLUTION CONTROL PLANT
PHASE 1B BORING STRATIGRAPHY

BORING #	OPEN ELEV	SAMPLE	DEPTH	RECOVERY	MUNSELL	COLOR	TEXTURE	ARTIFACTS
10	5.2	1	48.0 - 50.0	3.0	10YR4/4	dark yellowish brown	silt	brick, wood
		2	50.0 - 52.0	1.0	10YR3/2	very dark gray brown	coarse pebbly sand	
		3	55.0 - 57.0	1.0			one rock	
		4	57.0 - 59.0	2.0	10YR4/2	dark gray brown	sand	
		5	59.0 - 61.0	2.0	10YR4/3	medium brown	fine sand	
		6	61.0 - 63.0	1.0	10YR4/3	medium brown	fine sand	
		7	63.0 - 65.0	2.0	10YR5/2	gray brown	fine silty sand	
		8	65.0 - 67.0	1.0	10YR5/2	gray brown	fine silty sand	
		9	67.0 - 69.0	1.0	10YR5/2	gray brown	fine silty sand	
		10	69.0 - 71.0	1.0	10YR4/1	dark gray	dine sandy silt	
		11	71.0 - 73.0	1.0	10YR4/1	dark gray	fine sandy silt	
		12	73.0 - 75.0	1.0	10YR4/1	dark gray	fine sandy silt	
		13	80.0 - 81.5	1.0	10YR4/1	dark gray	*fine silty sand*	
		14	85.0 - 86.5	1.0			pebbles	
		15	90.0 - 91.5	2.0	10YR4/1	dark gray	coarse, pebbly sand	
		16	95.0 - 96.5	1.0		dark brown	coarse, pebbly sand	
		17	100.0 - 101.5	1.0		dark brown	coarse sand	
		18	105.0 - 106.5	1.0		dark brown	pebbly coarse sand	
		19	110.0 - 111.5	1.0		dark brown	pebbly coarse sand	
		20	115.0 - 116.5	1.0		gray brown	silt	
		21	120.0 - 121.5	1.0		gray brown	clay	
		22	125.0 - 126.5	1.0		gray	clay	
		23	130.0 - 131.5	1.0		gray	sandy, pebbly clay?	
		24	135.0 - 136.5	1.0		gray	coarse pebbly sand	
		25	-					
		26	-					
		27	-					
11	5.1	1	40.0 - 42.0	1.1	N3/	very dark gary	oily, organic silt	
		2	42.0 - 44.0	1.2	N3/	very dark gray	oily, organic silt	
		3	44.0 - 46.0	0.7	N3/	very dark gray	oily, organic silt	
		4	46.0 - 48.0	1.1	N3/	very dark gray	oily, organic silt	
		5	48.0 - 50.0	0.4	10YR3/2	very dark gray brown	sandy silt	
		6	50.0 - 52.0	1.2	10YR4/3	meduim brown	fine sandy silt	
		7	52.0 - 54.0	0.7	10YR3/1	very dark gray	sandy silt	
		8	54.0 - 56.0	1.3	10YR4/2	dark gray brown	fine sandy silt	
		9	56.0 - 58.0	1.4	10YR4/1	dark gray	fine sandy silt	
		10	58.0 - 60.0	1.3	10YR3/1	very dark gray	sandy silt	
		11	60.0 - 62.0	2.2	10YR3/1	very dark gray	silty sand	
		12	62.0 - 64.0	1.6	N2.5/	black	silty sand	
		13	64.0 - 66.0	1.8	N2.5/	black	silty sand	
		14	66.0 - 68.0	1.8	10YR4/1	dark gray	fine sandy silt	
		15	68.0 - 70.0	1.4	10YR4/1	dark gray	fine sandy silt	
		16	70.0 - 72.0	1.8	10YR3/1	very dark gray	micaceous sand	
		17	72.0 - 74.0	1.6	10YR3/1	very dark gray	oily, micaceous sand	
		18	74.0 - 76.0	1.5	10YR3/1	very dark gray	micaceous sand	
		19	76.0 - 78.0	1.2	10YR3/1	very dark gray	micaceous sand	
		20	78.0 - 80.0	1.8	10YR3/1	very dark gray	micaceous sand	
		21	-					
		22	-					
		23	-					
		24	-					
		25	-					
		26	-					
		27	-					

Appendix C

Department of General Services
Red Hook Water Pollution Control Plant Boring Logs

BORING LOG | SHEET 1 OF 3

JOB NO. 96-12 BORING NO. 1
PROJECT LAND BASED SLUDGE
LOCATION Management Plan Pedway Lot B, Bklyn

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED 7-8-96 RIG TYPE Roth RY
DATE FINISHED 7-8-96 WEIGHT OF HAMMER FOR CASING 350 lbs
DEPTH OF HOLE 44' WEIGHT OF HAMMER FOR SPOON 140 lbs

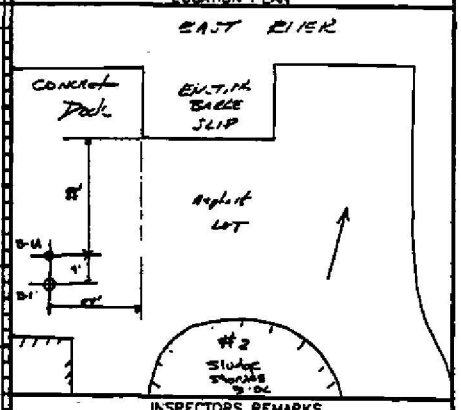
INSPECTOR T. Marchini
CONTRACTOR Craig
DRILLER Anthony Blanks
HELPER [redacted]
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

SPOON NO.	BLOWS PER 6"			DEPTH
1	8	WOH		
2	WOH			
3	1	0	1/6	
4	1	1	2/6	
5	W	0	0	
6	WOH	2	2/6	
7	4	3	3/6	
8	5	2	5/6	
9	45	41	17/6	
10	32	32	24/6	
11	35	29	24/6	
12	46	29	31/6	
13	15	12	15/6	
14	12	16	12/6	

Concrete, piers, slabs
Deck
(Connect with Air Rig)
Brown/Black Coal and gravel
Wet at 11'
Brown clay
11-65
Black/Grey Organic Silt Some Coal Trace sand Trace gravel
(OL) 11-65
Coal and Fine sand Clay with P.A. Trace S.G.
(SM-SP) 11-65
Brown Sand, little gravel
(SP) 11-65
Coal
Brown Silt
Trace Silt
(SP) 11-65

LOCATION PLAN



INSPECTORS REMARKS

Boring B-1 0-44'
Boring B-1A Hand 4' 44'-48'
Broke off casing in B-1 at 44'
Hand Boring 4'

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

P.E. 3/20/01

BORING LOG | SHEET 2 OF 3

JOB NO. 96-12 BORING NO. 1
PROJECT
LOCATION

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED RIG TYPE
DATE FINISHED WEIGHT OF HAMMER FOR CASING
DEPTH OF HOLE WEIGHT OF HAMMER FOR SPOON

INSPECTOR
CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

SPOON NO.	BLOWS PER 6"			DEPTH
15	21	28	49/6	
16	25	24	49/6	
17	4	9	13/6	
18	9	14	23/6	
19	21	18	39/6	
20	7	12	19/6	
21	12	16	28/6	
22	17	29	46/6	
23	63	WOH		
24	WOH			
25	36	WOH		
26	25	35	60	
27	WOH			

Coal
VERIFIED TO ALL BORINGS AND USE, Brown Silt (HL) 10-65' "Basal Till"
Brown Silt and fine sand (HL) 10-65' Basal Till"
VERIFIED TO ALL Brown-fine little to some silt (HL) 10-65' "Basal Till" with gray to dk gray clay layers "Basal Till"
Coal Coal Sand and gravel Little silt trace clay
Boulders
"Till"
Fine Coal Sand Trace Silt (SP) 6-65

LOCATION PLAN

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

P.E. 3/20/01

BORING LOG | SHEET 3 OF 3

JOB NO. 2619 BORING NO. 1

PROJECT

LOCATION

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED
DATE FINISHED
DEPTH OF HOLE
RIG TYPE
WEIGHT OF HAMMER FOR CASING
WEIGHT OF HAMMER FOR SPOON

INSPECTOR

CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD | LOCATION PLAN

SIZE	BLOWS
4	

Drilling Mud

SPOON NO.	BLOWS PER 6"			
29	61	99/5		
31	41	75/5		
30	41	77	95	
21	21	39	66	
32	23	37	54	

DEPTH

INSPECTOR'S LOG

Coring

Fill
Clay Sand
Cobbles
Coal Ash
"with gray silt layer"

Gray Silt and Clay, trace gravel

Cavings

Drilling Loud & Noisy

Fairly

DRILLING RECORD				
TYPE BIT	RUN NO.	NO. OF BLOWS	INCHES REC.	% REC.
NX	1	5# / 3in	46"	77%
D	2	6#	60"	100%

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF CO	REMARKS

P.S.E. 3/28/91

BORING LOG | SHEET 1 OF 3

JOB NO. 2613 BORING NO. 2
PROJECT Land Based Pollutant Mgt
LOCATION Red Hook Interior
Docking Facility, Brooklyn

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED 6-27-95 RIG TYPE Rotary
DATE FINISHED 6-28-95 WEIGHT OF HAMMER FOR CASING 300 LB
DEPTH OF HOLE 77' WEIGHT OF HAMMER FOR SPOON 140 LB

INSPECTOR E. Mancini
CONTRACTOR Craig Testing
DRILLER Lyford Reed
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

SPOON RECORD

SPOON NO.	BLOWS PER 6"			PENETRATION
1	5	1	1	1/1
2	28	33	31	3/11
3	5	7	8	7/15
4	1	0	3	1/3
5	W	O	P	
6	W	O	P	
7	W	O	P	
8	W	O	P	
9	W	O	P	
10	W	O	P	
11	21	20	24	44/44

INSPECTOR'S LOG

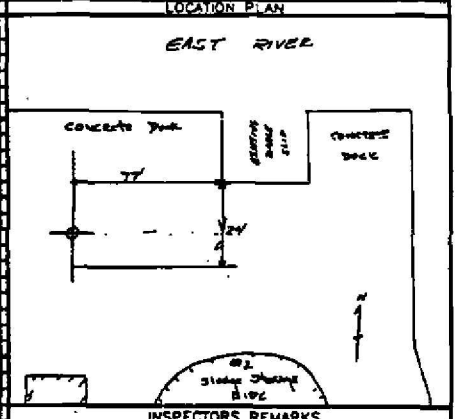
6" casing

Dec 1

11-65

Gray/Blue Organic Silt little clay little fine sand Shell gravel (OL) 11-65 * with oil/petroleum sheen

LOCATION PLAN



INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF CSG	COMMENTS

9" CASING

J.S.E. 3/96/01

BORING LOG | SHEET 2 OF 3

JOB NO. 2613 BORING NO. 2
PROJECT Land Based Sludge Pumpout
LOCATION Red Hook Interior
Docking Facility, Brooklyn

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED 6-27-95 RIG TYPE
DATE FINISHED WEIGHT OF HAMMER FOR CASING
DEPTH OF HOLE WEIGHT OF HAMMER FOR SPOON

INSPECTOR
CONTRACTOR Craig
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

SPOON RECORD

SPOON NO.	BLOWS PER 6"			PENETRATION
12	38	41	50	50/55
13	42	42	50	50/61
14	19	35	30	30/65
15	28	30	30	30/58
16	25	37	40	40/62
17	11	21	30	30/53
18	32	39	45	45/79
19	17	22	30	30/39
20	32	43	79	79/116
21	17	32	14	14/29
22	100/5			
23	100/5			

INSPECTOR'S LOG

F-M Brown SAND some silt, shell gravel and coal fragments

VERY FINE TO FINE Brown SAND and SILT trace to little gravel (ML) 10-65 * Bulk Liner

Brown SAND and GRAVEL Loose

Brown Silt and very fine to fine SAND trace mica (ML) 10-65 * Steel fiber

Brown Silt (ML) 9-65

Brown Silt and very fine to fine SAND trace mica (ML) 10-65 * Steel fiber

F-M GRAVELLY SAND some coal (SP) 6-65 Boulders

Red Clayey Sandy Gravel Boulders (GP) Loose

LOCATION PLAN

INSPECTORS REMARKS

Note: Cobbles + Boulders 56'-95'
(Drillers) Boulders approximately:
70-72' 78-79 91-92
72.5'-74' 82.5-84 92.1-93.3
74.2-75.1 81-81.7

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF CSG	COMMENTS

9" CASING

J.S.E. 3/96/01

BORING LOG | SHEET 3 OF 3

JOB NO. 260 BORING NO. 4W

PROJECT

LOCATION

THE CITY OF NEW YORK

DEPARTMENT OF GENERAL SERVICES

SUBSURFACE EXPLORATION SECTION

1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED ____ RIG TYPE ____

DATE FINISHED ____ WEIGHT OF HAMMER FOR CASING ____

DEPTH OF HOLE ____ WEIGHT OF HAMMER FOR SPOON ____

INSPECTOR

CONTRACTOR

DRILLER

HELPER

HELPER

CASING RECORD		GEOLOGIC LOG	SPOON RECORD					DEPTH	INSPECTOR'S LOG	DRILLING RECORD				
SIZE	BLOWS		SPOON NO.	BLOWS PER 6"			PENETRATION			TYPE OF	RUN NO.	NO. OF RUNS	RECOVERY	%
4"	337		23	44/4				20	F-M-C gray SAND AND GRAVEL (SP-GP) 6-65 Boulders					
	496													
	688													
	89													
	754													
	96		24	44/4				25						
	75													
	27													
	112													
6"	341		25	44/4			2'	30	gray clay little silt (CL) 9-65					
	1139													
			26	44/4										
			27	83	67	94		35	Mica Schist Schistose GNEISS DIP = 40-45 Bedding planes 30° to core axis	NX	1	4'6" 4'6"	45"	72½%
											2	4'6" 4'6"	36"	67%
								40	B.O.H. @ 45'					

LOCATION PLAN

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF CO	COMMENTS

J.P.E. 3/28/61

BORING LOG | SHEET 1 OF 3

JOB NO. 269 BORING NO. 3
PROJECT Lane Bryant 34th Pavement
LOCATION E/S 72-73rd St 1st Ave.

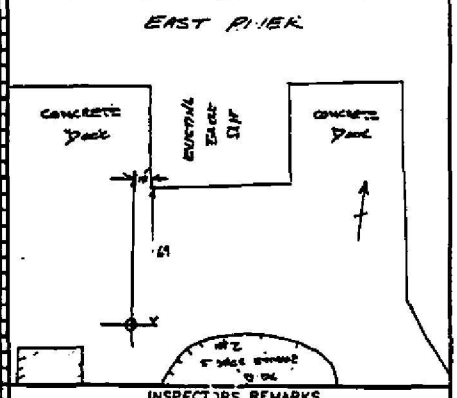
THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED 7/14/65 RIG TYPE
DATE FINISHED 7/21/65 WEIGHT OF HAMMER FOR CASING 300 lbs
DEPTH OF HOLE 111' WEIGHT OF HAMMER FOR SPOON 140 lbs

INSPECTOR P. Brannan
CONTRACTOR Craig
DRILLER S. Burns
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

LOCATION PLAN



INSPECTORS REMARKS

Note: Began drilling under @ 40'

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

BORING LOG | SHEET 2 OF 3

JOB NO. 269 BORING NO. 3
PROJECT
LOCATION

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED RIG TYPE
DATE FINISHED WEIGHT OF HAMMER FOR CASING
DEPTH OF HOLE WEIGHT OF HAMMER FOR SPOON

INSPECTOR
CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

LOCATION PLAN

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

BORING LOG | SHEET 3 OF 3

JOB NO. 264 BORING NO. 3
PROJECT
LOCATION

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. Rm. 2214, N.Y., N.Y. 10007

DATE STARTED
DATE FINISHED
DEPTH OF HOLE
RIG TYPE
WEIGHT OF HAMMER FOR CASING
WEIGHT OF HAMMER FOR SPOON

INSPECTOR
CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD | LOCATION PLAN

SIZE | BLOWS

Drilling Mud

27	66	100/1"			
28	100/1"				
29	77	100/1"			
30	72	99	61		
31	45	66	100/9"		

CONT'D

VERY FINE TO FINE SAND
SOME SILT
(ML) 10-65
"Bolt Liner"

GRAY CLAY
LITTLE
SILT
(CL) 9-65
"HARD"
AND
SHELL
FRAG

BOULDER + COBBLES 3

Very coarse GRAVEL, some coarse to fine SAND, little silt, with 3 cobbles and 1 boulder 4-65

NX	1	Push ↓ top	60"	100%	
◇	2	4" sump	18"	30%	
	3	4" sump	21"	65%	

INSPECTORS REMARKS

* Note: Driller experienced core barrel jamming, DISCONTINUED Boring @ 118'

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

BORING LOG SHEET 1 OF 3

JOB NO. 2619 BORING NO. 4

PROJECT [illegible]

LOCATION [illegible]

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED 6-23-65 RIG TYPE Failing
DATE FINISHED 6-23-65 WEIGHT OF HAMMER FOR CASING [illegible]
DEPTH OF HOLE 11.5' WEIGHT OF HAMMER FOR SPOON 140 lbs

INSPECTOR P Mascioni

CONTRACTOR [illegible]

DRILLER Stephan Burns

HELPER

HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

SIZE | BLOWS

9" CASING

SPOON RECORD

SAMP. NO.	BLOWS PER 6"			DEPTH
1	[illegible]	0	R	
2	[illegible]	0	R	
3	[illegible]	0	R	
4	[illegible]	0	R	
5	[illegible]	0	R	
6	[illegible]	0	R	
7	[illegible]	3	R	
8	[illegible]	0	R	

INSPECTOR'S LOG

Concrete

concrete + steel platform

water

Gray-black organic SILT little clay fine oil

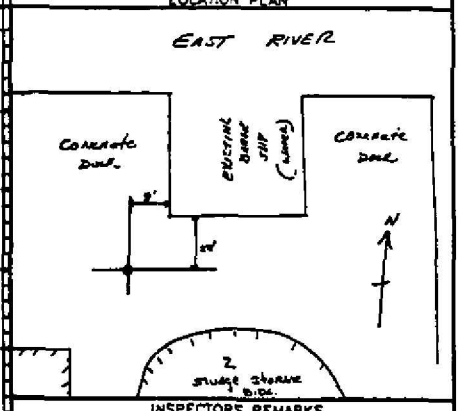
(OL) 11-65

"strong petroleum odor"

DRILLING RECORD

TYPE BIT	RUN NO.	NO. OF BLOWS PER	A REC.

LOCATION PLAN



INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF CSG.	REMARKS
10' (Est.)				

JJE 3/30/01

BORING LOG SHEET 2 OF 3

JOB NO. 2619 BORING NO. 4

PROJECT Lane Street Sludge Handling

LOCATION [illegible]

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED 6-23-65 RIG TYPE
DATE FINISHED WEIGHT OF HAMMER FOR CASING
DEPTH OF HOLE WEIGHT OF HAMMER FOR SPOON

INSPECTOR P Mascioni

CONTRACTOR Craig Testing

DRILLER J Burns

HELPER

HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD | LOCATION PLAN

SIZE | BLOWS

4" CASING

DRILLING MUD

SPOON RECORD

SAMP. NO.	BLOWS PER 6"			DEPTH
9	[illegible]	0	R	
10	[illegible]	0	R	
11	16	50	9"/no	
12	16	19	35/12	
13	24	48	72/12	
14	12	11	47/12	
15	31	47	78/12	
16	12	35	47/12	
17	28	44	72/12	
18	19	47	66/12	
19	19	11	30/24	
20	3	33	36/24	
21	[illegible]			
22	[illegible]			

INSPECTOR'S LOG

Concrete

18" to some F-M SAND

Brown-Gray (5Y) 7/1 Clean to Silty Fine to Medium SAND Trace Gravel Loose Wet

Brownish-Gray (5Y) 6/1 Clean to Silty Fine to Medium SAND Some Gravel Loose Wet

Yellowish-Brown (10YR) 5/4 Clean to Silty Fine to Medium SAND Some Gravel Loose Wet

Brownish-Gray (5Y) 6/1 Clean to Silty Fine to Medium SAND Some Gravel Loose Wet

F-M Gray-Brown SAND Some Silt Some Gravel (5Y) 7/1

Brownish-Gray (5Y) 6/1 Clean to Silty Fine to Medium SAND Some Gravel Loose Wet

F-M Gray SAND Some Silt Trace Gravel (5Y) 7/1

Brownish-Gray (5Y) 6/1 Clean to Silty Fine to Medium SAND Some Gravel Loose Wet

F-M Gray SAND Some Silt Trace Gravel (5Y) 7/1 Shells 1"

Brownish-Gray (5Y) 6/1 Clean to Silty Fine to Medium SAND Some Gravel Loose Wet

DRILLING RECORD

TYPE BIT	RUN NO.	NO. OF BLOWS PER	A REC.

LOCATION PLAN

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF CSG.	REMARKS

JJE 3/30/01

BORING LOG | SHEET 1 OF 5

JOB NO. 26 BORING NO. A

PROJECT

LOCATION

THE CITY OF NEW YORK

DEPARTMENT OF GENERAL SERVICES

SUBSURFACE EXPLORATION SECTION

1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED — RIG TYPE

DATE FINISHED — WEIGHT OF HAMMER FOR CASING

DEPTH OF HOLE — WEIGHT OF HAMMER FOR SPOON

INSPECTOR

CONTRACTOR

DRILLER

HELPER

HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD | LOCATION PLAN

SIZE | BLOWS

SPOON RECORD — BLOWS PER 6"

SAMP. NO.	BLOWS PER 6"			PENETRATION
23	50	4/5		1
24	38	62	100/5"	
25	42	81	100/5"	2
26	44	67	100/5"	

DEPTH IN FT.

INSPECTOR'S LOG

Conc.

Gray silt, and very fine sand (ML) 10-65

"Bella Luna" Ft

Gray sand, trace silt (SP) 7-65 Balboa

Gray silty clay (ML) 10-65

Clay, trace silt, and gravel (SP-ST) 1-65

Fresh coarse gravel

Int. 4-40' Fresh 40-50' Fresh 50-71'

1-65

Bott @ 113'

DRILLING RECORD

TYPE OF	SAMP. NO.	NO. OF BLOWS	RECOVERY IN INCHES	% REC.
NX 0	1	4pt + 1.4	20"	57 1/2%
NX 0	2	9pt + 1.4	57"	95%

LOCATION PLAN

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF CSG	COMMENTS

BORING LOG | SHEET 1 OF 3

JOB NO. 2611 BORING NO. 5

PROJECT [illegible]

LOCATION [illegible]

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED 11-6-95 RIG TYPE Rotary
DATE FINISHED 11-8-95 WEIGHT OF HAMMER FOR CASING 140 lb
DEPTH OF HOLE 70' WEIGHT OF HAMMER FOR SPOON 140 lb

INSPECTOR [illegible]
CONTRACTOR Testwell
DRILLER [illegible]
HELPER [illegible]
HELPER —

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

SIZE | BLOWS

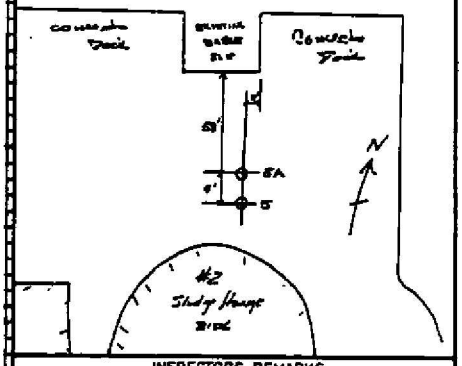
SPOON RECORD: BLOWS PER 6"

1	W	0	2
2	13	14	14
3	W	0	2
4	W	0	2
5	W	1	1
6	W	1	1
7	W	1	1
8	W	1	1
9	W	1	1
10	W	1	1

INSPECTOR'S LOG:
Asphalt
Concrete + stone platform
WATER
Gray Organic Silt trace clay trace fine sand (OH) (continued)

DRILLING RECORD

LOCATION PLAN



INSPECTORS REMARKS

Driller sampled to refusal to 70' where he hit casing
Move boring 4' west. Drilled 0-20' + extend casing
New crew from Testwell drilled + sampled 20'-40'
[redacted]
Jersey Boring their own project drilled above
casing to 20'. - J36 discontinued December '95

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	COMMENTS

3/20/91

BORING LOG | SHEET 2 OF 3

JOB NO. 2611 BORING NO. 5

PROJECT [illegible]

LOCATION [illegible]

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED — RIG TYPE —
DATE FINISHED — WEIGHT OF HAMMER FOR CASING —
DEPTH OF HOLE — WEIGHT OF HAMMER FOR SPOON —

INSPECTOR —
CONTRACTOR —
DRILLER —
HELPER —
HELPER —

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

SIZE | BLOWS

SPOON RECORD: BLOWS PER 6"

12	W	1	2
13	W	0	2
14	W	0	2
15	3	3	5/1
16	13	21	7/14
17	14	17	9/13
18	16	12	7/14
19	9	12	9/11
20	W	11	4/14
21	11	14	25/14
NR	refusal		
22	5"	12"	
23	refusal		

INSPECTOR'S LOG:
Cont'd
trace fine sand
F-M sandy SAND
trace silt
(SP) 7-65
F-M Brown SAND
trace silt
SP 7-65
trace gravel
trace silt
SP 7-65
Boulders

DRILLING RECORD

LOCATION PLAN

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	COMMENTS

3/20/91

BORING LOG | SHEET 3 OF 5

JOB NO. 1611 BORING NO. 12

PROJECT [illegible]

LOCATION [illegible]

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED
DATE FINISHED
DEPTH OF HOLE
RIG TYPE
WEIGHT OF HAMMER FOR CASING
WEIGHT OF HAMMER FOR SPOON

INSPECTOR
CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD	GEOLOGIC LOG	SPOON RECORD					INSPECTOR'S LOG	DRILLING RECORD	LOCATION PLAN
SIZE / BLOWS		SAMPLE NO.	BLOWS PER 6"			SAMPLE REC.	DEPTH	TYPE BIT / SIZE BIT / NO. OF CORES / CORE REC. / REMARKS	
		24	auger				20		
		25	71	71			25		
		26	42	57	53		30		
		27	71	71	74		35		
			100/0"				40		

INSPECTOR'S LOG (illegible)

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

1-68 5/70/M

BORING LOG | SHEET 1 OF 4

JOB NO. 268 BORING NO. 6
PROJECT Low Dam Shore Improvement
LOCATION Pier 103 ±115' NW of 103

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED 7-6-65 RIG TYPE Robbins
DATE FINISHED 7-16-65 WEIGHT OF HAMMER FOR CASING 340#
DEPTH OF HOLE 115' WEIGHT OF HAMMER FOR SPOON 140#

INSPECTOR R Freeman
CONTRACTOR Spencer White
DRILLER Hall Young
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

SPOON RECORD

SPOON NO.	BLOWS PER 6"			DEPTH
1	W	O	H	
2	1	4	5/6	
3	W	O	R	
4	W	O	R	
5	W	O	R	

INSPECTOR'S LOG

Concrete Pack.

WATER

Black Organic Silt

Fine black sand and silt, trace coarse (compact) 6'

Gray Organic Silt some clay trace fine sand (OH) 11-65

LOCATION PLAN

EAST RIVER

CONCRETE DOCK

EVISON BAKER CO.

CONCRETE DOCK

5'

12'

N

#2 Stone Stone Dike

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	COMMENTS

P.S.E. 3/28/61

BORING LOG | SHEET 2 OF 4

JOB NO. 2619 BORING NO. 6
PROJECT
LOCATION

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED RIG TYPE
DATE FINISHED WEIGHT OF HAMMER FOR CASING
DEPTH OF HOLE WEIGHT OF HAMMER FOR SPOON

INSPECTOR
CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

SPOON RECORD

SPOON NO.	BLOWS PER 6"			DEPTH
6	W	O	H	
7	W	O	H	
8	W	O	R	
9	W	O	R	
10	W	O	R	
11	9	12	21/24	
12	15	23	38/48	
13	8	11	19/24	
14	12	15	27/24	
15	14	17	31/24	
16	14	32	39/24	
17	7	11	18/22	
18	12	19	31	
19	21	27	32	

INSPECTOR'S LOG

Con't

Fine sand and silt

(SP) 8-65

Fine sand and silt

Fine Brownish time silt

(SP) 7-65

Very fine Brownish Some silt

(SM) 8-65

Material

Very fine Brownish and silt some sand (ML) 10-65 + Built Limit

LOCATION PLAN

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	COMMENTS

P.S.E. 3/28/61

BORING LOG | SHEET 3 OF 4

JOB NO. 2619 BORING NO. 6
PROJECT
LOCATION

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED ____ RIG TYPE ____
DATE FINISHED ____ WEIGHT OF HAMMER FOR CASING ____
DEPTH OF HOLE ____ WEIGHT OF HAMMER FOR SPOON ____

INSPECTOR
CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD | LOCATION PLAN

SPOON RECORD: BLOWS PER 6"

SAMP. NO.	BLOWS PER 6"				TYPE
20	11	21	25		
21	29				
22	14/6"			N	
23	10/7"				
24	10/7"				

INSPECTOR'S LOG:
- Fill Brown sand some gravel little coal & silt (SP) 6-5
- Fill Brown Sand some gravel trace silt (SP) 6-5
- Fill Brown Sand little gravel trace silt (SP) 6-5
- Fill Gray Black Sand some gravel trace to little silt trace clay (SP-SM) 6-5
- Gravel cobbles Boulders
- Weathered Schist Gravel Boulders

DRILLING RECORD

TYPE BIT	RUN NO.	NO. OF PIECES REC.	RECOVERED REC.	% REC.
NX	1	3pcs & Comp	93"	72 1/2%
◇	2	6pcs & Comp	91"	73 1/2%
	3	6pcs & Comp	88"	92 1/2%
	4	3pcs & Comp	42"	70%

INSPECTORS REMARKS
Note: Broad jamming of - called Boring at 125'

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

120

BORING LOG | SHEET 4 OF 4

JOB NO. 2619 BORING NO. 6
PROJECT
LOCATION

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED ____ RIG TYPE ____
DATE FINISHED ____ WEIGHT OF HAMMER FOR CASING ____
DEPTH OF HOLE ____ WEIGHT OF HAMMER FOR SPOON ____

INSPECTOR
CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD | LOCATION PLAN

SPOON RECORD: BLOWS PER 6"

SAMP. NO.	BLOWS PER 6"				TYPE

INSPECTOR'S LOG:
- Weathered Schist Gravel Boulders
- Bedrock

DRILLING RECORD

TYPE BIT	RUN NO.	NO. OF PIECES REC.	RECOVERED REC.	% REC.
NX	4			
◇	5	4pcs & Comp	24"	67%

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

BORING LOG | SHEET 1 OF 4

JOB NO. 2619 BORING NO. 7
PROJECT Land Based Staging Management
LOCATION Pier 35 Hook Slip
Pedestrian Bridge

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED 7/14/17 RIG TYPE Rotary
DATE FINISHED 7/25/17 WEIGHT OF HAMMER FOR CASING 300#
DEPTH OF HOLE 134' WEIGHT OF HAMMER FOR SPOON 300#

INSPECTOR E. Marciano
CONTRACTOR Craig
DRILLER Stephen Burns
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

9" CASING

SPOON NO.	BLOWS PER 6"			DEPTH
1	C	O	R	
2	2	O	R	
3	2	O	R	2'
4	2	C	R	
5	2	O	R	
6	C	O	R	
7	C	O	R	

INSPECTOR'S LOG

Concrete and shell Debr (Approx. 8')

Water and mud

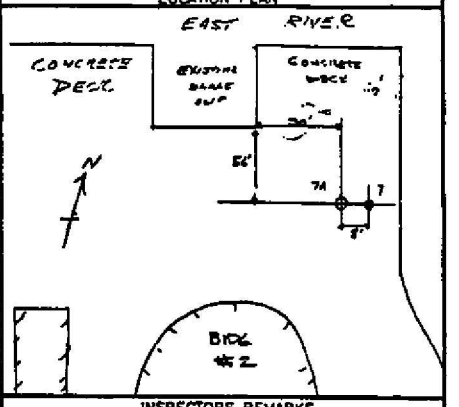
F-M Brown Sand and silt (SM) 11-65 [illegible]

Gray Organic Silt little clay trace fine sand (OL) 11-65

DRILLING RECORD

TYPE OF	RUN NO.	NO. OF BLOWS PER	RECOV.	REC.

LOCATION PLAN



INSPECTORS REMARKS

Original Boring 7 abandoned at approx 7'
Moved 8' to Boring 7A

Joe Cea - Was Driller from 0-90'
Stephen Burns Driller 90-134'

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	COMMENTS

J.P.K. 3/30/01

BORING LOG | SHEET 2 OF 4

JOB NO. 2619 BORING NO. 7
PROJECT
LOCATION

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED RIG TYPE
DATE FINISHED WEIGHT OF HAMMER FOR CASING
DEPTH OF HOLE WEIGHT OF HAMMER FOR SPOON

INSPECTOR
CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

4" CASING

SPOON NO.	BLOWS PER 6"			DEPTH
8	C	O	R	
9	C	O	R	
10	2	O	R	
11	2	O	R	
12	7	12	21/24	
13	22	31	9/9	
14	19	27	27/24	
15	9	11	9/6	
16	11	21	40	
17	10	19/6"		
18	49/6"			

INSPECTOR'S LOG

Cont'd

Medium-Medium Gray Sand some silt (SM) 10-65 Bulk Liner

F-M Gray Sand trace to little silt (SP-SM) 7-65

Medium-coarse gray sand and silt (SM) 10-65 Bulk Liner

Medium-coarse sand and silt (SM) 10-65 Bulk Liner

F-M Gray Sand trace silt (SP) 7-65

Wood chips silt layer

Gray Silt trace fine sand (ML) 10-65

Gravel trace F-M sand (GT) 6-65

DRILLING RECORD

TYPE OF	RUN NO.	NO. OF BLOWS PER	RECOV.	REC.

LOCATION PLAN

INSPECTORS REMARKS

NOTE: 4 UNDISTURBED SAMPLES TAKEN at: 34'-36'
39'-41'
43'-45'
47'-49'

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	COMMENTS

J.P.K. 3/30/01

BORING LOG | SHEET 3 OF 4

JOB NO. 2619 BORING NO. 7
PROJECT
LOCATION

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED — RIG TYPE
DATE FINISHED — WEIGHT OF HAMMER FOR CASING
DEPTH OF HOLE — WEIGHT OF HAMMER FOR SPOON

INSPECTOR
CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD | LOCATION PLAN

SIZE | BLOWS

SPOON RECORD: BLOWS PER 6"

19	100/4			
20	32	100/4		
NR	100/4			
21	33	24	39	
22	100/4			
NR	100/4			
23	100/4			
24	57	42	29	

INSPECTOR'S LOG:

F-M [illegible] time to [illegible] and basalt

(SP) 7-65

F-M [illegible] time to [illegible]

(SP-SM) 8-65 Boulders "Drill"

F-M [illegible] time [illegible]

(SP) 6-65

F-C [illegible] and basalt

(SP-SC) 6-65

Coal and [illegible]

DRILLING RECORD

TYPE BIT	RUN NO.	NO. OF BOXES REC.	REC.	% REC.

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

J.F.E. 3/28/91

BORING LOG | SHEET 4 OF 4

JOB NO. 2619 BORING NO. 7
PROJECT
LOCATION

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED — RIG TYPE
DATE FINISHED — WEIGHT OF HAMMER FOR CASING
DEPTH OF HOLE — WEIGHT OF HAMMER FOR SPOON

INSPECTOR
CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD | LOCATION PLAN

SIZE | BLOWS

SPOON RECORD: BLOWS PER 6"

23	100/4			

INSPECTOR'S LOG:

cont

[illegible] lightly weathered [illegible]

Consolidated Gneiss

Dip = 40-45°

Joints 10-20°
fractures 60-80°

1 Highly Fractured

2-65

DRILLING RECORD

TYPE BIT	RUN NO.	NO. OF BOXES REC.	REC.	% REC.
NX	1	5ft 4in	57"	95%
	2	5ft 3in	60"	100%

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

J.F.E. 3/28/91

BORING LOG | SHEET 1 OF 3

JOB NO. [illegible] BORING NO. 3
PROJECT [illegible]
LOCATION [illegible]

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED [illegible] RIG TYPE [illegible]
DATE FINISHED [illegible] WEIGHT OF HAMMER FOR CASING [illegible]
DEPTH OF HOLE 120 WEIGHT OF HAMMER FOR SPOON [illegible]

INSPECTOR [illegible]
CONTRACTOR [illegible]
DRILLER [illegible]
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

SIZE BLOWS

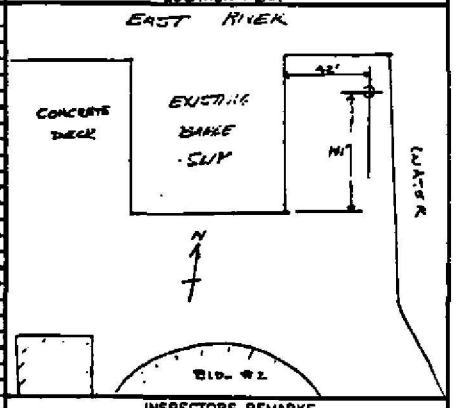
4" CASING

SPOON RECORD: BLOWS PER 6"

INSPECTOR'S LOG:
Concrete + Steel Deck
WATER

DRILLING RECORD

LOCATION PLAN



INSPECTORS REMARKS

GROUND WATER RECORD

BORING LOG | SHEET 2 OF 3

JOB NO. [illegible] BORING NO. 3
PROJECT [illegible]
LOCATION [illegible]

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED [illegible] RIG TYPE [illegible]
DATE FINISHED [illegible] WEIGHT OF HAMMER FOR CASING [illegible]
DEPTH OF HOLE [illegible] WEIGHT OF HAMMER FOR SPOON [illegible]

INSPECTOR [illegible]
CONTRACTOR [illegible]
DRILLER [illegible]
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

SIZE BLOWS

4" CASING

		BLOWS PER 6"	
1	W	O	R
2	4	5	7/1
3	3	4	3/4
4	7	10	7/10
5	13	16	9/29
6	12	13	11/26
7	12	13	11/26
8	16	19	9/32
9	21	30	19/51
10	13	14	4/27
11	14	17	11/31
12	9	13	11/22
13	13		11/26

INSPECTOR'S LOG:
Sand
MUD
Gray S.M. Some Silt, Some Sand, Trace Fill
(M) 11-65
F.M. Gray Silty Sand
(SM) 11-65
Brown S.M. Some Silt, Some Sand, Trace Fill
(M) 11-65
Gray S.M. Some Silt, Some Sand, Trace Fill
(M) 11-65
(SP) 6-65
Brown S.M. Some Silt, Some Sand
(M) 11-65
Brown Gray S.M. Some Silt, Some Sand
(M) 10-65

DRILLING RECORD

LOCATION PLAN

INSPECTORS REMARKS

GROUND WATER RECORD

BORING LOG 1 SHEET 1 OF 1

JOB NO. 2611 BORING NO. B

PROJECT

LOCATION

THE CITY OF NEW YORK

DEPARTMENT OF GENERAL SERVICES

SUBSURFACE EXPLORATION SECTION

1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED

DATE FINISHED

DEPTH OF HOLE

RIG TYPE

WEIGHT OF HAMMER FOR CASING

WEIGHT OF HAMMER FOR SPOON

INSPECTION

CONTRACTOR

DRILLER

HELPER

HELPER

CASING RECORD	GEOLOGIC LOG	SPOON RECORD	INSPECTOR'S LOG	DRILLING RECORD	LOCATION PLAN
SIZE / BLOWS		BLOWS PER 6"	DEPTH / SPLIT		

4" CASING

SPOON NO.	BLOWS PER 6"	
14	14 17	31
15	11 13	24
16	50/4	
17	100/5	
18	100/4	
19	100/5	
20	100/5	

INSPECTOR'S LOG

Surface Brown Some Little gravel

(SP) 0-6.5

Clay Silt Some F-M Sand Some gravel Trace clay

(M) 10ft "Till" (Compact Water Bearing)

Gray M-C Sand And Gravel

(SP-GP) 6-65

Cobbles And Boulders (Boring Hard)

F-M/C Gray Sand Little to some silt Trace clay, trace gravel

(SP) 7-65

Gravel And F-M/C Gray Sand Cobbles

(GP-SP) 6-65

INSPECTORS REMARKS

* Driller take off drill at down hole. boring called at 20'

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

* 5.0.B @ 20'

BORING LOG | SHEET 1 OF 4

JOB NO. 26 9 BORING NO. 9

PROJECT Williamsburg Bridge

LOCATION Manhattan Approach & Pier Borings, Encl. Work

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED July 27 1995 RIG TYPE Rotary
DATE FINISHED 8/4 8 WEIGHT OF HAMMER FOR CASING 300lbs
DEPTH OF HOLE 147' WEIGHT OF HAMMER FOR SPOON 140lbs

INSPECTOR P. Nachman

CONTRACTOR Testwell-Craig
DRILLER S. Burns 6-94
HELPER J. Kinney 79-142'
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

SIZE | BLOWS

4" CASING

SPOON RECORD: BLOWS PER 6"

INSPECTOR'S LOG:

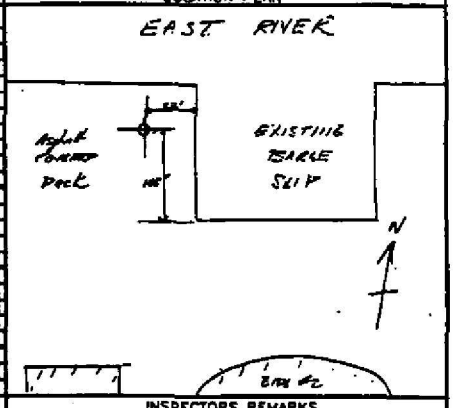
5' Asphalt

8' Decking Platform (Concrete, gravel, Conc)

Water

DRILLING RECORD: TYPE BIT | SAMPLER | NO. OF BLOWS | PROGRESS (IN.) | REMARKS

LOCATION PLAN



INSPECTORS REMARKS

Note 4" CASING lowered to 49'
Drilled along 60'-65', 70'-85'

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

J.S.E. 3/96/01

BORING LOG | SHEET 2 OF 4

JOB NO. 2619 BORING NO. 10

PROJECT

LOCATION

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED RIG TYPE
DATE FINISHED WEIGHT OF HAMMER FOR CASING
DEPTH OF HOLE WEIGHT OF HAMMER FOR SPOON

INSPECTOR

CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

SIZE | BLOWS

4" CASING

SPOON RECORD: BLOWS PER 6"

1	7	14	26	14
2	50/4			
3	36	44	44	44
4	63	56	51	51
5	15	17	15	15
6	16	21	20	20
7	10	12	13	13
8	6	7	9	9
9	8	8	12	12
10	4	6	8	8
11	5	6	8	8
12	7	9	14	14

INSPECTOR'S LOG:

Black

Brown Silt

Very Fine Brown Sand

(NL) 10-65

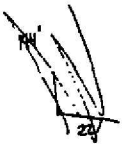
Brown Silt

(NL) 10-65

Coarse

DRILLING RECORD: TYPE BIT | SAMPLER | NO. OF BLOWS | PROGRESS (IN.) | REMARKS

LOCATION PLAN



INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

J.S.E. 3/96/01

BORING LOG | SHEET 3 OF 4

JOB NO. 269 BORING NO. 10
PROJECT
LOCATION

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED
DATE FINISHED
DEPTH OF HOLE
RIG TYPE
WEIGHT OF HAMMER FOR CASING
WEIGHT OF HAMMER FOR SPOON

INSPECTOR
CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD | LOCATION PLAN

Drilling MUD

SPOON NO.	BLOWS PER 6"	
13	4 9 22	2"
14	20 15 26	
13	ref/6"	
16	ref/6"	
17	41 29 ref/6"	
18	ref/6"	
19	37 49 29	
20	21 27 28	

INSPECTOR'S LOG
cont'd
(GP-SM) 4.5
Brown
F-M Sd
Con
Sandy
trace
gravel
trace
clay
trace
silt
(SP) 7.5
Dark Gray
Silt
Interlay
(ML) 14.5

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

J.S. 3/20/81

BORING LOG | SHEET 4 OF 4

JOB NO. 269 BORING NO. 10
PROJECT
LOCATION

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED
DATE FINISHED
DEPTH OF HOLE
RIG TYPE
WEIGHT OF HAMMER FOR CASING
WEIGHT OF HAMMER FOR SPOON

INSPECTOR
CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD | LOCATION PLAN

Drilling MUD

SPOON NO.	BLOWS PER 6"	
21	46 35 39	2"
22	37 30 34	
23	76 ref/6"	
24	ref/6"	

INSPECTOR'S LOG
cont'd
Lava
Shells
Fine sandy
gravel
clay silt
(SP) 6.0
Boulder
Basaltic Rock
with Hard Seam
Weathered Basalt
Lt. Brown
Basalt
Diamond Drill
Core
Run #1
Run #2

DRILLING RECORD

TYPE BIT	RUN NO.	NO. OF MINUTES	PROGRESS REC.	% REC.
	1	30 min	5'	60%
NX	2	60 min	10'	83%

INSPECTORS REMARKS

Note: Core barrel jammed up after 2' (Core) on Run #1

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS

BORING LOG SHEET 1 OF 2

JOB NO. 361 BORING NO. 11
PROJECT 42nd Street Pier
LOCATION Manhattan (E. 42nd St.)
Sep Work ...Sep Contr.

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED 10-2-62 RIG TYPE Rotary
DATE FINISHED 10-3-62 WEIGHT OF HAMMER FOR CASING 300#
DEPTH OF HOLE 32' WEIGHT OF HAMMER FOR SPOON 140#

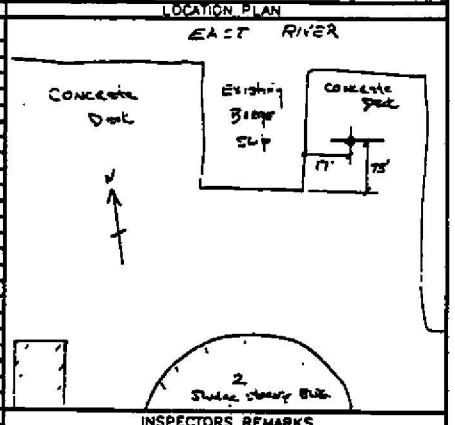
INSPECTOR P. Magnani
CONTRACTOR Jetcel Equip. Co.
DRILLER Fred Conner
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

9" CASING

INSPECTOR'S LOG:
Concrete
Sand
Asphalt
Platform (Pier)
Water
East River
Mud

LOCATION PLAN



INSPECTORS REMARKS

Note: Dropped pipe through platform 1st sample at 4'

10/4/62 Broke roller bit off at 100'
Driller drilled ream. reboring to return with [illegible] duty rig

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF CO	COMMENTS
				DRY UNDISTURBED at 100'

BORING LOG SHEET 2 OF 3

JOB NO. 361 BORING NO. 11
PROJECT 42nd Street Pier
LOCATION Manhattan Sep Work Sep Contr.

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED
DATE FINISHED
DEPTH OF HOLE
RIG TYPE
WEIGHT OF HAMMER FOR CASING
WEIGHT OF HAMMER FOR SPOON

INSPECTOR
CONTRACTOR
DRILLER
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD

9" CASING

SAMP. NO.	BLOWS PER 6"			DEPTH
1	W	O	R	
2	W	2	R	
3	W	0	R	
4	W	2	R	
5	3	2	3/5	
6	13	16	29/30	
7	12	12	24/24	
8	16	21	37/33	
9	19	17	36/36	
10	19	10	29/30	
	19	22	41/42	
12	26	28	54/54	
13	17	25	42/54	
14	17	18	35/54	
15	17	23	40/54	
16	10	17	27/54	
17	14	17	33/54	
18	14	2	16/54	
19	6	10	16/54	
20	9	12	21/54	

INSPECTOR'S LOG:
Gray Brown silt some clay trace fine sand
(Qal) 11-63
"Bulk Sample"
(ML) 10-63

DRILLING RECORD

LOCATION PLAN

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF CO	COMMENTS

BORING LOG | SHEET 2 OF 2

JOB NO. 2611 BORING NO. 11
PROJECT
LOCATION

THE CITY OF NEW YORK
DEPARTMENT OF GENERAL SERVICES
SUBSURFACE EXPLORATION SECTION
1 CENTRE ST. RM. 2214, N.Y., N.Y. 10007

DATE STARTED — RIG TYPE
DATE FINISHED — WEIGHT OF HAMMER FOR CASING
DEPTH OF HOLE — WEIGHT OF HAMMER FOR SPOON

INSPECTOR P. MAGNANI
CONTRACTOR Foundation Boring Co.
DRILLER M. O'Connor
HELPER
HELPER

CASING RECORD | GEOLOGIC LOG | SPOON RECORD | INSPECTOR'S LOG | DRILLING RECORD | LOCATION PLAN

SIZE | BLOWS

DRILLING MUD

SPOON RECORD — BLOWS PER 6"

20	4	9	11/16	
21	11	17	—	
22	40	17½	—	
23	40	68	36	

INSPECTOR'S LOG

Sand

Bottom

Bottom

Bottom

Bottom

(57-19) 6-05

Auger / Borings

DRILLING RECORD

LOCATION PLAN

INSPECTORS REMARKS

GROUND WATER RECORD

DEPTH TO WATER	TIME	DATE	DEPTH OF HOLE	REMARKS