



Beaver Dam - White River, Arkansas

**U.S. Army Corps
of Engineers**
Little Rock District

Beaver Dam Secant Pile Wall Completion Report

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13. ABSTRACT The report presents a comprehensive project history, beginning in 1966 with the initial Beaver Lake (located near Eureka Springs, in northwest Arkansas, U.S.A.) impoundment against Dike 1, which produced observable surface seepage from five areas downstream of Dike 1. Seepage continued to increase due to limestone rock weathering and solutioning, combined with removal of colloidal sized soil material from the overburden and weathered rock zones, particularly along two faults that formed a graben beneath Dike 1. The pervasive seepage distress evolved until a muddy water boil was discovered during a "pool of record" event in December 1984, and ultimately warranted a remedial construction project. The selected method for alleviating the seepage distress consisted of a 1,475-foot-long concrete diaphragm wall located immediately upstream of Dike 1 and penetrating to depths of 80 to 185 feet. Utilizing a request for proposals/technical evaluation/price negotiation contractual process, the construction was accomplished by two separate joint venture contractors under two contracts. The first contractor performed site preparation and constructed an upstream work platform; however, the contractor failed to complete the project because the specialized rock mill excavation equipment could not excavate the proposed overlapping trench segments into the high compressive strength unweathered rock that typically exceeded 15,000 psi. The inability to construct the wall resulted in the first contract being terminated for convenience to the Government. The second contractor, after overcoming shaft excavation instability problems, completed the wall using a large diameter down-the-hole air percussion hammer drill for excavation. A total of 739 overlapping, 34-inch diameter shafts were drilled on 24-inch centers. The shafts were filled with concrete using the gravity tremie method; thus, creating a continuous concrete secant pile wall with a minimum width of 18 inches. The completed wall successfully eliminated all observable seepage downstream of the dike, and significantly reduced piezometric levels. The project construction was completed in December 1994, at an approximate cost of \$33,535,000.		

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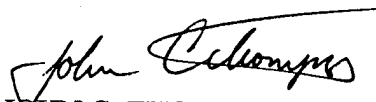
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Chief, Automated Mission Planning Section

Attachment
Distribution List

BEAVER DAM COMPLETION REPORT

APPENDIX - G

APPENDIX G

Explanation of Terms Used

<u>Term</u>	<u>Meaning</u>
Pile #	The Number Assigned to each pile, beginning at 0 on the northern terminus of job and ending with 738 at southern terminus of contract.
Drilling Date	The date or dates the pile was drilled.
Rig #	Either Rig 1 (Mounted on a Link Belt 318 crane) or Rig 2 (Mounted on a Manitowoc 4100 crane).
Excavation Method	Type of Hammer Used.
Drill Footage	Amount of footage drilled in the time frame given.
Redrill Footage	Amount of redrilling necessary due to down staging or other reason given.
Drill Time	Amount of time it took to drill the pile to the depth given.
Redrill Time	Time interval required to excavate redrilled portion of the pile.
Penetration Rate	The rate (ft/hr) at which pile was drilled or redrilled.
Concrete Date	The date on which the corresponding spec. concrete or non-spec. concrete/grout was placed for stabilization purposes.
Spec Concrete	The specification concrete used to make the wall.
Non-Spec Concrete	Concrete used to stabilize the drill hole.
Grout	Grout used to stabilize the drill hole.
Theoretical Vol.	The volume of grout, non-spec concrete or spec concrete calculated to fill the drill hole.
Overbreak	A percentage difference between the calculated volume of grout or concrete to fill a drill hole and the amount actually required.

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<u>Term</u>	<u>Meaning</u>
Verticality	The amount and direction of deviation from perfect verticality.
S-ARC	The amount of over lap of a pile in inches between the adjacent two piles (one to the north and one to the south) calculated from the verticality of the 3 adjoining piles.
Quality Coring	Tells if the pile was cored to check concrete quality.

APPENDIX G

Part 1 Contractual Piles

Part 2 Conforming Piles

**Part 3 Production Rates
(Various Materials)**

Blue skirt

CONTRACTUAL PILE DATA

Secondary Pile # 0
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
11/16/92	1	DHD130A	81		5.04	16.07	11/16/92		21	18.9	11.0%

Total Drill Time = 5.04 Hours
Average Penetration Rate = 16.07 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1° South X 1° East
S-ARC North = na
S-ARC South = 28.29

Quality Caring: None.

Comments:

Primary Pile # 1
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
11/30/92	1	DHD130A	82		4.22	19.43	12/01/92		20.75	19.1	8.4%

Total Drill Time = 4.22 Hours
Average Penetration Rate = 19.43 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = na
S-ARC South = 28.16

Quality Caring: None.

Comments:

Secondary Pile # 2
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
11/20/92	1	DHD130A	82		6.33	12.95	11/21/92		22	19.1	14.9%

Total Drill Time = 6.33 Hours
Average Penetration Rate = 12.95 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information

At Full Depth = 0° N/S X 4.5° East
S - ARC North = 28.29
S - ARC South = 26.16

Quality Coring: NQ 0' to 19'.

Comments:

Primary Pile # 3
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
03/10/93	2	DHD130A	81		5.56	14.57	03/11/93		22.5	18.9	19.0%

Total Drill Time = 5.56 Hours
Average Penetration Rate = 14.57 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information

At Full Depth = 0° N/S X 0° E/W
S - ARC North = 28.18
S - ARC South = 28.14

Quality Coring: None.

Comments:

Secondary Pile # 4
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
01/19/93	1	DHD130A	81		8.71	9.30	01/21/93		23	18.9	21.8%

Total Drill Time = 8.71 Hours
Average Penetration Rate = 9.30 Feet/Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" North X .38° East
S-ARCNorth = 28.18
S-ARCSouth = 30.01

Quality Coring: NQ 0' to 87'

Comments:

Primary Pile # 5
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
03/29/93	2	DHD130A	82		8.68	9.47	03/30/93		23	19.1	20.1%

Total Drill Time = 8.68 Hours
Average Penetration Rate = 9.47 Feet/Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.5" North X 2° West
S-ARCNorth = 28.14
S-ARCSouth = 18.78

Quality Coring: None.

Comments:

Secondary Pile # 6
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
02/03/93	1	DHD130A	82		8.58		9.56		02/08/93			24	19.1	25.3%

Total Drill Time = 8.58 Hours
Average Penetration Rate = 9.56 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.35° South X 3.75° West
S-ARC North = 30.01
S-ARC South = 33.80

Quality Coring: None.

Comments:

Primary Pile # 7
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
04/02/93	2	XL-24	82		2.83		28.98		04/03/93			21	19.1	9.7%

Total Drill Time = 2.83 Hours
Average Penetration Rate = 28.98 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 4.25° North X 1.33° West
S-ARC North = 18.78
S-ARC South = 21.05

Quality Coring: None.

Comments:

Secondary Pile # 8
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
02/18/93	2	DHD130A	81		10.74	7.54	02/20/83		24	18.9	28.9%

Total Drill Time = 10.74 Hours
Average Penetration Rate = 7.54 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = .59° North X .59° West
S - ARC North = 33.80
S - ARC South = 22.80

Quality Coring: None.

Comments:

Primary Pile # 9
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
04/02/93	2	XL-24	81		3.90	20.77	04/07/93		24	18.9	26.9%

Total Drill Time = 3.90 Hours
Average Penetration Rate = 20.77 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 2° South X 1° East
S - ARC North = 21.05
S - ARC South = 33.79

Quality Coring: None.

Comments:

Secondary Pile # 10
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/23/93	2	CLUSTER	81		8.66		9.35		02/24/93			23	18.9	21.6%

Total Drill Time = 8.66 Hours
Average Penetration Rate = 9.35 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.47" North X 1.87" ast
S-ARC North = 22.80
S-ARC South = 24.23

Quality Coring: None.

Comments:

Primary Pile # 11
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/02/93	2	XL-24	82		3.66		22.40		04/03/93			22.5	19.1	17.5%

Total Drill Time = 3.66 Hours
Average Penetration Rate = 22.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.75" North X 1.5" East
S-ARC North = 33.79
S-ARC South = 23.64

Quality Coring: None.

Comments:

Secondary Pile # 12
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/18/93	2	DHD130A	82		8.99		9.12		02/20/93			24	19.1	25.3%

Total Drill Time = 8.99 Hours
Average Penetration Rate = 9.12 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 2.82° West
S--ARC North = 24.23
S--ARC South = 33.06

Quality Coring: None.

Comments:

Primary Pile # 13
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/12/93	2	DHD130A	82		7.91		10.37		03/13/93			24	19.1	25.3%

Total Drill Time = 7.91 Hours
Average Penetration Rate = 10.37 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 4.87° North X 1.79° West
S--ARC North = 23.64
S--ARC South = 21.80

Quality Coring: None.

Comments:

Secondary Pile # 14
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
12/07/92	1	DHD130A	81	19.85		4.08	12/09/92			21.5	18.9	13.7%

Total Drill Time = 19.85 Hours
Average Penetration Rate = 4.08 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.63° North X 1.13° West
S-ARC North = 33.06
S-ARC South = 28.17

Quality Coring: None.

Comments:

Primary Pile # 15
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/29/93	2	CLUSTER	82	5.17		15.96	03/30/93			24	19.1	25.3%

Total Drill Time = 5.17 Hours
Average Penetration Rate = 15.96 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.23° North X 1.98° West
S-ARC North = 21.80
S-ARC South = 21.87

Quality Coring: None.

Comments: Small Void in Pile.

Secondary Pile # 16
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/16/92	1	DHD130A	80	9.50			8.42		10/21/92			22	18.7	17.8%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 8.42 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.85" South X 0.62" East
S-ARC North = 26.17
S-ARC South = 27.81

Quality Coring: 6' 0" to 30' w/pile #17

Comments:

Primary Pile # 17
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/04/92	1	DHD130A	83	4.87			17.04		11/05/92			21	19.4	8.3%

Total Drill Time = 4.87 Hours
Average Penetration Rate = 17.04 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" South X 1.5" West
S-ARC North = 21.87
S-ARC South = 25.66

Quality Coring: 6' 0" to 30' w/pile #16

Comments:

Secondary Pile # 18
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
10/24/92	1	DHD130A	82		7.92		10.35	10/24/92			20	19.1	4.4%

Total Drill Time = 7.92 Hours
Average Penetration Rate = 10.35 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.75" South X 2.5" West
S--ARC North = 27.81
S--ARC South = 34.53

Quality Coring: None.

Comments:

Primary Pile # 19
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
11/12/92	1	DHD130A	82		5.05		16.24	11/12/92			21	19.1	9.7%

Total Drill Time = 5.05 Hours
Average Penetration Rate = 16.24 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 4.5" North X 0" E/W
S--ARC North = 25.66
S--ARC South = 17.59

Quality Coring: None.

Comments:

Secondary Pile # 20
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)		Penetration Rate (FT / HR)		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/29/92	1	DHD130A	81	7.66		10.57		10/30/92			21	18.9	11.0%

Total Drill Time = 7.66 Hours
Average Penetration Rate = 10.57 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 1" South X 1.75" West
S-ARC North = 34.53
S-ARC South = 28.06

Quality Coring: None.

Comments:

Primary Pile # 21
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)		Penetration Rate (FT / HR)		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
12/01/92	1	DHD130A	82	8.78		9.34		12/01/92			20.75	19.1	8.4%

Total Drill Time = 8.78 Hours
Average Penetration Rate = 9.34 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 0 N/S X 0 E/W
S-ARC North = 17.59
S-ARC South = 22.62

Quality Coring: None.

Comments:

Secondary Pile # 22
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)					
11/24/92	1	DHD130A	81		9.12	8.88	11/25/92		22	18.9	16.3%

Total Drill Time = 9.12 Hours
Average Penetration Rate = 8.88 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.75" South X .25" East
S--ARC North = 28.06
S--ARC South = 30.45

Quality Coring: None.

Comments:

Primary Pile # 23
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)					
03/10/93	2	CLUSTER	81		5.42	14.94	03/11/93		23	18.9	21.6%

Total Drill Time = 5.42 Hours
Average Penetration Rate = 14.94 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0" N/S X 0" E/W
S--ARC North = 22.62
S--ARC South = 30.45

Quality Coring: None.

Comments:

Secondary Pile # 24
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
12/10/92	1	DHD130A	81		16.23	4.99	12/11/92			21	18.9	11.0%

Total Drill Time = 16.23 Hours
Average Penetration Rate = 4.99 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 30.45
S-ARC South = 31.9

Quality Coring: None.

Comments:

Primary Pile # 25
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
04/03/93	2	XL-24	93		4.50	20.67	04/04/93			25	21.7	15.1%

Total Drill Time = 4.50 Hours
Average Penetration Rate = 20.67 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4° North X 2° West
S-ARC North = 26.76
S-ARC South = 22.54

Quality Coring: None.

Comments: Overdrilled pile accidentally - Contractor though he was in 90' section

Secondary Pile # 26
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Penetration Rate (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/14/93	2	CLUSTER	92		5.00		18.40			02/19/93			25	21.5	16.4%

Total Drill Time = 5.00 Hours
Average Penetration Rate = 18.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5" North X 2" East
S-ARC North = 31.9
S-ARC South = No Overlap at Full Depth Corrected With Conforming Pile.

Quality Coring: None.

Comments: Overdrilled hole accidentally - Contractor thought he was in 90' section

Primary Pile # 27
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Penetration Rate (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/07/93	2	XL-24	82		4.67		17.56			04/08/93			21.5	19.1	12.3%

Total Drill Time = 4.67 Hours
Average Penetration Rate = 17.56 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 9.81" South X 7.55" West
S-ARC North = No Overlap at Full Depth Corrected With Conforming Pile.
S-ARC South = 35.92

Quality Coring: None.

Comments:

Secondary Pile # 28
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
02/25/93	2	CLUSTER	82		6.08	13.49	02/25/93			23	19.1	20.1%

Total Drill Time = 6.08 Hours
Average Penetration Rate = 13.49 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.50° North X 3.80° West
S--ARC North = 35.92
S--ARC South = 21.93

Quality Coring: None.

Comments:

Primary Pile # 29
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
04/12/93	2	XL-24	82		6.50	12.62	04/14/93			23	19.1	20.1%

Total Drill Time = 6.50 Hours
Average Penetration Rate = 12.62 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1° South X 0° E/W
S--ARC North = 21.93
S--ARC South = 31.09

Quality Coring: None.

Comments:

Secondary Pile # 30
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/30/93	2	DHD130A	81		10.48		7.73		03/30/93			24	18.9	26.9%

Total Drill Time = 10.48 Hours
Average Penetration Rate = 7.73 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.25° North X 0° E/W
S-ARC North = 31.09
S-ARC South = 16.72

Quality Coring: None.

Comments:

Primary Pile # 31
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/07/93	2	XL-24	82		4.17		19.66		04/08/93			22.5	19.1	17.5%

Total Drill Time = 4.17 Hours
Average Penetration Rate = 19.66 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.86° South X 7.14° West
S-ARC North = 16.72
S-ARC South = 16.23

Quality Coring: None.

Comments:

Secondary Pile # 32
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
04/02/93	2	XL-24	82	4.42		18.55		04/03/93			24	19.1	25.3%

Total Drill Time = 4.42 Hours
Average Penetration Rate = 18.55 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 7.78° South X 1.56° East
S-ARC North = 16.23
S-ARC South = 34.59

Quality Coring: None.

Comments:

Primary Pile # 33
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
04/12/93	1	XL-24	82	5.00		16.40		07/14/93			23	19.1	20.1%

Total Drill Time = 5.00 Hours
Average Penetration Rate = 16.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5° South X .75° West
S-ARC North = 34.59
S-ARC South = 30.04

Quality Coring: None.

Comments:

Secondary Pile # 34
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
02/22/93	2	DHD130A	80		9.75		02/27/93			23	18.7	23.1%

Total Drill Time = 9.75 Hours
Average Penetration Rate = 8.21 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5° North X 4.17° East
S-ARC North = 30.04
S-ARC South = 27.29

Quality Coring: None.

Comments:

Primary Pile # 35
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
03/13/93	2	DHD130A	81		11.67		03/13/93			23	18.9	21.6%

Total Drill Time = 11.67 Hours
Average Penetration Rate = 6.94 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.25° North X 0° E/W
S-ARC North = 27.29
S-ARC South = 17.32

Quality Coring: None.

Comments:

Secondary Pile # 36
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
10/21/92	1	DHD130A	83		14.41		5.76		10/22/92			21.5	19.4	10.9%

Total Drill Time = 14.41 Hours
Average Penetration Rate = 5.76 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.18" South X 3.88" West
S-ARC North = 17.32
S-ARC South = 31.89

Quality Coring: None.

Comments:

Primary Pile # 37
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
11/13/92	1	DHD130A	81		4.75		17.05		11/13/92			21	18.9	11.0%

Total Drill Time = 4.75 Hours
Average Penetration Rate = 17.05 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" North X .5" West
S-ARC North = 31.89
S-ARC South = 24.09

Quality Coring: None.

Comments:

Secondary Pile # 38
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)					
11/06/92	1	DHD130A	151		16.78		9.00		11/07/92		38	35.3	7.8%

Total Drill Time = 16.78 Hours
Average Penetration Rate = 9.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information

At Full Depth = 1.53° South X 0° E/W
S-ARC North = na due to change in depth
S-ARC South = 26.03

Quality Coring: None.

Comments:

Primary Pile # 39
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)					
12/15/92	1	DHD130A	152		21.30		7.14		12/19/92		38.5	35.5	8.5%

Total Drill Time = 21.30 Hours
Average Penetration Rate = 7.14 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information

At Full Depth = 2.03° South X .87° West
S-ARC North = 26.03
S-ARC South = 27.66

Quality Coring: NQ 0' to 19.8' (for contractors use)

Comments: PUMP TRUCK USED FOR CONCRETE PLACEMENT.

Secondary Pile # 40
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/02/92	1	DHD130A	151	22.09			6.84	11/03/92			37	35.3	4.9%

Total Drill Time = 22.09 Hours
Average Penetration Rate = 6.84 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.32" South X 2.64" West
S--ARC North = 27.66
S--ARC South = No Overlap at Full Depth, Connected with Conforming Pile.

Quality Coring: NQ FROM 0' TO 156.5'.

Comments:

Primary Pile # 41
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/07/93	2	XL-24	152	8.58			17.72	04/08/93			40	35.5	12.7%

Total Drill Time = 8.58 Hours
Average Penetration Rate = 17.72 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 20.40" South X 5.83" East
S--ARC North = No Overlap at Full Depth, Connected with Conforming Pile.
S--ARC South = 46.31

Quality Coring: None.

Comments:

Secondary Pile # 42
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT./HR)	Redrill (FT./HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/28/92	1	DHD130A	151	28.83			5.24		11/30/92			38.5	35.3	9.2%

Total Drill Time = 28.83 Hours
Average Penetration Rate = 5.24 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.75° S X 1.25° E
S--ARC North = 46.31
S--ARC South = 27.10

Quality Coring: NX/NQ cored to 101' on 4/21 - 22/93.

Comments: This pile was drilled to 35' by accident on 3/30/93. It took 13 cu.yd. of spec. concrete.

Primary Pile # 43
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT./HR)	Redrill (FT./HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/13/93	2	DHD130A	152	12.67			12.00		04/15/93			41	35.5	15.5%

Total Drill Time = 12.67 Hours
Average Penetration Rate = 12.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5° S X 1.88° E
S--ARC North = 27.10
S--ARC South = 30.66

Quality Coring: None.

Comments:

Secondary Pile # 44
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Pile #	Excavation Method	Drill Footage (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/01/93	1	DHD130A	151	25.97		5.81		02/09/93			40	35.3	13.4%

Total Drill Time = 25.97 Hours
Average Penetration Rate = 5.81 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5" N X 0" EW
S-ARC North = 30.66
S-ARC South = 23.15

Quality Coring: None.

Comments:

Primary Pile # 45
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Pile #	Excavation Method	Drill Footage (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/14/93	2	DHD130A	152	14.83		10.25		03/15/93			40	35.5	12.7%

Total Drill Time = 14.83 Hours
Average Penetration Rate = 10.25 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .88" S X 1.46" W
S-ARC North = 23.15
S-ARC South = 22.52

Quality Coring: None.

Comments:

Secondary Pile # 46
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/18/92	1	DHD130A	151	28.83	5.24		11/21/92			40	35.3	13.4%

Total Drill Time = 28.83 Hours
Average Penetration Rate = 5.24 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.93° S X 4.89° E
S-ARC North = 22.52
S-ARC South = 24.33

Quality Coring: NQ 0' TO 19.0' (For Contractors Use); 6' Joint core 46/47 to 29.7'

Comments:

Primary Pile # 47
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
12/09/92	1	DHD130A	152	19.57	7.77		12/10/92			38.5	35.5	8.5%

Total Drill Time = 19.57 Hours
Average Penetration Rate = 7.77 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.5° S X 2.5° W
S-ARC North = 24.33
S-ARC South = 29.32

Quality Coring: None.

Comments:

Secondary Pile # 48
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/28/92	1	DHD130A	152	25.00		6.08		10/29/92			37	35.5	4.2%

Total Drill Time = 25.00 Hours
Average Penetration Rate = 6.08 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.55° S X .75° W
S-ARC North = 29.32
S-ARC South = 37.60

Quality Coring: None.

Comments:

Primary Pile # 49
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/17/93	2	DHD130A	152	12.17		12.49		04/19/93			41	35.5	15.6%

Total Drill Time = 12.17 Hours
Average Penetration Rate = 12.49 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 7.5° N X 2.25° E
S-ARC North = 37.60
S-ARC South = 10.45

Quality Coring: None.

Comments:

Secondary Pile # 50
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT./HR)	Redrill (FT./HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/08/93	2	DHD130A	150	25.66		5.85		02/09/93			42	35.0	19.9%

Total Drill Time = 25.66 Hours
Average Penetration Rate = 5.85 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 6' S X 2.2' W
S-ARC North = 10.45
S-ARC South = No Overlap at Full Depth, Corrected with Conforming Pile.

Quality Coring: None.

Comments:

Primary Pile # 51
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT./HR)	Redrill (FT./HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/30/93	2	XL-24	152	5.75		26.43		04/01/93			41	35.5	15.5%

Total Drill Time = 5.75 Hours
Average Penetration Rate = 26.43 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 14.6' S X 3.18' E
S-ARC North = No Overlap at Full Depth, Corrected with Conforming Pile.
S-ARC South = 41.75

Quality Coring: None.

Comments:

Secondary Pile # 52
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/17/93	2	DHD130A	152	13.25		11.47	11.47		02/19/93			42	35.5	18.3%

Total Drill Time = 13.25 Hours
Average Penetration Rate = 11.47 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information

At Full Depth = 2.2" N X 5.7" W
S--ARC North = 41.75
S--ARC South = 17.62

Quality Coring: None.

Comments:

Primary Pile # 53
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/23/93	2	DHD130A	153	12.92		11.84	11.84		04/24/93			42	35.7	17.6%

Total Drill Time = 12.92 Hours
Average Penetration Rate = 11.84 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information

At Full Depth = 3.25" S X 3.44" W
S--ARC North = 17.62
S--ARC South = 32.35

Quality Coring: None.

Comments:

Secondary Pile # 54
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
02/23/93	2	DHD130A	152		10.66	14.26	02/23/93		41.5	35.5	16.9%

Total Drill Time = 10.66 Hours
Average Penetration Rate = 14.26 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.31" N X 3.6" E
S-ARC North = 32.35
S-ARC South = 22.27

Quality Coring: None.

Comments:

Primary Pile # 55
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
04/14/93	2	DHD130A	152		13.42	11.33	04/15/93		41	35.5	15.5%

Total Drill Time = 13.42 Hours
Average Penetration Rate = 11.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0" N/S X 2.31" W
S-ARC North = 22.27
S-ARC South = No Overlap at Full Depth, Connected with Conforming Pile.

Quality Coring: None.

Comments:

Secondary Pile # 56
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
03/11/93	2	DHD130A	151		11.17		03/12/93			41	35.3	16.3%

Total Drill Time = 11.17 Hours
Average Penetration Rate = 13.52 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 9.8" S X 7.17" E
S-ARC North = No Overlap at Full Depth, Connected with Conforming Pile.
S-ARC South = 37.84

Quality Coring: None.

Comments:

Primary Pile # 57
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
04/03/93	2	XL-24	152		4.58		04/06/93			41	35.5	15.5%

Total Drill Time = 4.58 Hours
Average Penetration Rate = 33.19 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 0" N/S X 2.24" E
S-ARC North = 37.84
S-ARC South = 27.63

Quality Coring: None.

Comments:

Secondary Pile # 58
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)		Redrill (HRS)		Penetration Rate (FT / HR)		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill	Redrill	Drill	Redrill	Drill	Redrill						
03/26/93	1	DHD130A	151	11.33				13.33		03/27/93			41.5	35.3	17.7%

Total Drill Time = 11.33 Hours
Average Penetration Rate = 13.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 7.94" S X 4.11" W
S--ARC North = 27.63
S--ARC South = 6.47

Quality Coring: None.

Comments:

Primary Pile # 59
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)		Redrill (HRS)		Penetration Rate (FT / HR)		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill	Redrill	Drill	Redrill	Drill	Redrill						
04/19/93	2	DHD130A	152	21.99				6.91		04/20/93			40	35.5	12.7%

Total Drill Time = 21.99 Hours
Average Penetration Rate = 6.91 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 6.47
S--ARC North = 36.61
S--ARC South = 36.61

Quality Coring: None.

Comments:

Secondary Pile # 60
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/01/93	2	DHD130A	152	21.99		6.91		03/02/93			41	35.5	15.8%

Total Drill Time = 21.99 Hours
Average Penetration Rate = 6.91 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.10° N X 1.90° E
S-ARC North = 36.31
S-ARC South = 20.46

Quality Coring: None.

Comments:

Primary Pile # 61
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/19/93	1	DHD130A	150	16.17		9.28		05/19/93			40	35.0	14.2%

Total Drill Time = 16.17 Hours
Average Penetration Rate = 9.28 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.8° S X 9.76° E
S-ARC North = 20.46
S-ARC South = 27.09

Quality Coring: None.

Comments:

Secondary Pile # 62
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)		Penetration Rate (FT / HR)		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
12/02/92	1	DHD130A	151	18.17		8.31		12/03/92			38	35.3	7.8%

Total Drill Time = 18.17 Hours
Average Penetration Rate = 8.31 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 18.25° E
S-ARC North = 27.09
S-ARC South = 27.75

Quality Coring: NX/NQ cored to 160' on 4/30/93

Comments: Redrilled by accident 3/23/93 to 50'.

Primary Pile # 63
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)		Penetration Rate (FT / HR)		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/22/93	1	DHD130A	150	13.42		11.18		05/24/93			40	35.0	14.2%

Total Drill Time = 13.42 Hours
Average Penetration Rate = 11.18 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 7.55° N X 1.76° E
S-ARC North = 27.75
S-ARC South = No Overlap at Full Depth, Corrected with Conforming Pile.

Quality Coring: None.

Comments:

Secondary Pile # 64
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/01/93	2	XL-24	152		5.83		26.07		04/02/93			42	35.5	18.3%

Total Drill Time = 5.83 Hours
Average Penetration Rate = 26.07 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 6.36° S X 8.9° E
S-ARC North = No Overlap at Full Depth, Connected with Conforming Pile.
S-ARC South = 34.58

Quality Coring: None.

Comments:

Primary Pile # 65
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/07/93	1	DHD130A	153		16.08		9.51		05/10/93			41	35.7	14.8%

Total Drill Time = 16.08 Hours
Average Penetration Rate = 9.51 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 6° E
S-ARC North = 34.58
S-ARC South = 20.73

Quality Coring: None.

Comments:

Secondary Pile # 66
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/08/93	2	DHD130A	152	16.75		9.07		04/09/93			41	35.5	15.8%

Total Drill Time = 16.75 Hours
Average Penetration Rate = 9.07 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.81" S X 4.13" E
S-ARC North = 20.73
S-ARC South = 31.66

Quality Coring: None.

Comments:

Primary Pile # 67
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/18/93	1	DHD130A	150	16.83		8.91		05/20/93			39	35.0	11.3%

Total Drill Time = 16.83 Hours
Average Penetration Rate = 8.91 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 2.11" E
S-ARC North = 31.66
S-ARC South = 31.39

Quality Coring: None.

Comments:

Secondary Pile # 68
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/05/93	2	DHD130A	150	21.32		7.04		03/06/93			41	35.0	17.0%

Total Drill Time = 21.32 Hours
Average Penetration Rate = 7.04 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.6" N X 0" E/W
S-ARC North = 31.39
S-ARC South = 9.07

Quality Coring: None.

Comments: Deficient Joint Width at Full Depth, Corrected with Conforming Pile.

Primary Pile # 69
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/20/93	2	DHD130A	152	13.40		11.34		04/20/93			40	35.5	12.7%

Total Drill Time = 13.40 Hours
Average Penetration Rate = 11.34 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5.1" S X 2.39" W
S-ARC North = 9.07
S-ARC South = 35.49

Quality Coring: None.

Comments:

Secondary Pile # 70
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/09/93	2	DHD130A	150	18.08			8.30		02/10/93			43.5	35.0	24.2%

Total Drill Time = 18.08 Hours
Average Penetration Rate = 8.30 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.92° N X .32° W
S-ARC North = 35.49
S-ARC South = 17.46

Quality Coring: None.

Comments:

Primary Pile # 71
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/13/93	1	DHD130A	150	14.75			10.17		05/14/93			39	35.0	11.3%

Total Drill Time = 14.75 Hours
Average Penetration Rate = 10.17 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.52° S X 3.52° W
S-ARC North = 17.46
S-ARC South = 31.10

Quality Coring: None.

Comments:

Secondary Pile # 72
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
12/11/92	1	DHD130A	151		21.05	7.17	12/12/92			40.5	35.3	14.9%

Total Drill Time = 21.05 Hours
Average Penetration Rate = 7.17 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X .25° W
S-ARC North = 31.10
S-ARC South = 34.02

Quality Coring: None.

Comments:

Primary Pile # 73
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
04/05/93	2	XL-24	152		5.72	26.57	04/06/93			40	35.5	12.7%

Total Drill Time = 5.72 Hours
Average Penetration Rate = 26.57 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5.72° N X 1.91° W
S-ARC North = 34.02
S-ARC South = 14.11

Quality Coring: 6' Joint 73/74 to 24' on 5/01/93

Comments:

Secondary Pile # 74
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/20/93	2	DHD130A	152	23.73			6.41	02/22/93			41.5	35.5	16.9%

Total Drill Time = 23.73 Hours
Average Penetration Rate = 6.41 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .65° S X 4.85° E
S-ARC North = 14.11
S-ARC South = 10.85

Quality Coring: None.

Comments:

Primary Pile # 75
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/08/93	1	DHD130A	151	12.83			11.77	05/10/93			40	35.3	13.4%

Total Drill Time = 12.83 Hours
Average Penetration Rate = 11.77 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 8.30° S X 1.5° W
S-ARC North = 10.85
S-ARC South = 42.62

Quality Coring: None.

Comments:

Secondary Pile # 76
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
03/31/93	2	XL-24	152	7.25		20.97		04/01/93			43	35.5	21.1%

Total Drill Time = 7.25 Hours
Average Penetration Rate = 20.97 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 7.94" N X 5.72" E
S-ARC North = 42.62
S-ARC South = 8.51

Quality Coring: None.

Comments: Deficient Joint Width at Full Depth, Corrected with Conforming Pile.

Primary Pile # 77
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
05/20/93	1	DHD130A	151	10.42		14.49		05/21/93			38	35.3	7.8%

Total Drill Time = 10.42 Hours
Average Penetration Rate = 14.49 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .5" S X 0" E/W
S-ARC North = 8.51
S-ARC South = 22.50

Quality Coring: None.

Comments:

Secondary Pile # 78
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/22/93	1	DHD130A	152	15.92		9.55		04/22/93			42.5	35.5	19.7%

Total Drill Time = 15.92 Hours
Average Penetration Rate = 9.55 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.02" S X 4.03" W
S-ARC North = 22.50
S-ARC South = 28.85

Quality Coring: None.

Comments:

Primary Pile # 79
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/16/93	2	DHD130A	150	11.08		13.54		06/16/93			40	35.0	14.2%

Total Drill Time = 11.08 Hours
Average Penetration Rate = 13.54 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.13" S X 0" E/W
S-ARC North = 28.85
S-ARC South = 29.56

Quality Coring: None.

Comments:

Secondary Pile # 80
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
03/11/93	2	CLUSTER	62	5.92		10.47		03/16/93		19		14.5	31.2%
04/15/93	1		52		52			04/15/93		12		12.1	-1.2%
05/28/93	1	DHD130A	150	7.83	62	11.24	3.17	05/28/93			40	35.0	14.2%

Total Drill Time = 13.75 Hours
Average Penetration Rate = 10.91 Feet / Hour

Total Redrill Time = 3.17 Hours
Average Penetration Rate = 35.96 Feet / Hour

Verticality Information
At Full Depth = 1" N X 1.76" E
S-ARC North = 29.56
S-ARC South = 33.89

Quality Coring: None.

Comments: Lost cluster bit in hole 4/15/93

Primary Pile # 81
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
06/04/93	2	DHD130A	150	10.17		14.75		06/04/93			41.5	35.0	18.5%

Total Drill Time = 10.17 Hours
Average Penetration Rate = 14.75 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 6.54" N X 2" E
S-ARC North = 33.89
S-ARC South = 16.17

Quality Coring: None.

Comments:

Secondary Pile # 82
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/09/92	1	DHD130A	35		1.68		20.83		11/11/92	6		8.2	-26.6%	
11/17/92	1	DHD130A	40	35	2.00	1.55	2.50	22.58	11/18/92	12		9.3	28.5%	
12/04/92	1	DHD130A	151	40	11.84	1.83	9.38	21.86	12/08/92		62	35.3	75.8%	

Total Drill Time = 15.52 Hours
Average Penetration Rate = 9.73 Feet / Hour
Total Redrill Time = 3.38 Hours
Average Penetration Rate = 22.19 Feet / Hour

Verticality Information
At Full Depth = .38° N X 0° E/W
S-ARC North = 16.17
S-ARC South = 31.52

Quality Coring: Cored by COE 1/20/93

Comments: At 32' connected with old Soletanche panel

Primary Pile # 83
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/08/93	2	DHD130A	150		11.83		12.68		06/08/93		41.5	35.0	18.5%	

Total Drill Time = 11.83 Hours
Average Penetration Rate = 12.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 4.03° N X 1.5° E
S-ARC North = 31.52
S-ARC South = No Overlap at Full Depth, Corrected with Conforming Pile.

Quality Coring: NS/NQ core drilled to 59.8' in pile 83 and exited into pile 84 which was continued to 156.6' depth.

Comments:

Secondary Pile # 84
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/02/93	1	DHD130A	151		12.67		11.92		02/04/93		44		35.3	24.8%
02/05/93	1		38	38					02/06/93		16		8.9	80.3%
06/02/93	1	DHD130A	150	151		7.75		19.48	06/02/93			41	35.0	17.0%

Total Drill Time = 12.67 Hours
 Average Penetration Rate = 11.84 Feet / Hour
 Total Redrill Time = 7.75 Hours
 Average Penetration Rate = 24.39 Feet / Hour

Vertically Information
 At Full Depth = 6.04" S X 9.31" W
 S-ARC North = No Overlap at Full Depth, Corrected with Conforming Pile.
 S-ARC South = 32.04

Quality Coring: See pile 83

Comments:

Primary Pile # 85
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/17/93	2	DHD130A	150		11.58		12.95		06/18/93			41	35.0	17.0%

Total Drill Time = 11.58 Hours
 Average Penetration Rate = 12.95 Feet / Hour
 Total Redrill Time = None
 Average Penetration Rate = None

Vertically Information
 At Full Depth = 1.76" S X 6.04" W
 S-ARC North = 32.04
 S-ARC South = 28.96

Quality Coring: None.

Comments:

Secondary Pile # 86
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/25/93	1	XL-24	150	7.09		21.16		05/26/93			43.5	35.0	24.2%

Total Drill Time = 7.09 Hours
Average Penetration Rate = 21.16 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 3.52° W
S-ARC North = 28.98
S-ARC South = 20.01

Quality Coring: None.

Comments:

Primary Pile # 87
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/24/93	2	DHD130A	150	11.08		13.54		06/24/93			41	35.0	17.0%

Total Drill Time = 11.08 Hours
Average Penetration Rate = 13.54 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.78° S X 1.76° E
S-ARC North = 20.01
S-ARC South = 19.76

Quality Coring: None.

Comments:

Secondary Pile # 88
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
04/08/93	2	DHD130A	152		10.00		15.20			48	35.5	35.2%

Total Drill Time = 10.00 Hours
Average Penetration Rate = 15.20 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 8.1" S X 4.13" E
S-ARC North = 19.76
S-ARC South = 30.20

Quality Coring: None.

Comments:

Primary Pile # 89
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
06/22/93	2	DHD130A	150		9.75		15.38			41	35.0	17.0%

Total Drill Time = 9.75 Hours
Average Penetration Rate = 15.38 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 5.54" S X 3.52" E
S-ARC North = 30.20
S-ARC South = 27.35

Quality Coring: None.

Comments:

Secondary Pile # 90
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/17/93	2	DHD130A	34		1.25		27.20	02/18/93		10		7.9	26.0%
03/02/93	1	CLUSTER	92	34	12.00	0.50	4.83	03/02/93		54		21.5	151.4%
06/11/93	2	DHD130A	150	92	6.41	5.33	9.05	06/12/93			40.5	35.0	15.6%

Total Drill Time = 19.66 Hours
Average Penetration Rate = 7.53 Feet / Hour

Total Redrill Time = 5.83 Hours
Average Penetration Rate = 21.61 Feet / Hour

Verticality Information
At Full Depth = 5.03° S X 5.54° E
S--ARC North = 27.35
S--ARC South = 38.69

Quality Coring: None.

Comments:

Primary Pile # 91
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/25/93	2	DHD130A	150		10.17		14.75	06/25/93			42.5	35.0	21.3%

Total Drill Time = 10.17 Hours
Average Penetration Rate = 14.75 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 5.03° N X 2.51° E
S--ARC North = 38.69
S--ARC South = 20.48

Quality Coring: None.

Comments:

Secondary Pile # 92
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Excavation Method	Drill (HRS)	Redrill (FT)	Drill (FT/HR)	Redrill (HRS)						
03/22/93	1	151	DHD130A	11.67		12.94		03/22/93			52	35.3	47.5%

Total Drill Time = 11.67 Hours
Average Penetration Rate = 12.94 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.25" N X 1.25" W
S-ARC North = 20.48
S-ARC South = 27.44

Quality Coring: None.

Comments:

Primary Pile # 93
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Excavation Method	Drill (HRS)	Redrill (FT)	Drill (FT/HR)	Redrill (HRS)						
05/24/93	1	150	DHD130A	9.92		15.12		05/24/93			40.5	35.0	15.6%

Total Drill Time = 9.92 Hours
Average Penetration Rate = 15.12 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.75" N X 1.75" W
S-ARC North = 27.44
S-ARC South = No Overlap at Full Depth, Corrected with Conforming Pile.

Quality Coring: None.

Comments:

Secondary Pile # 94
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/06/93	2	DHD130A	152	11.58		13.13		04/06/93			46	35.5	29.6%

Total Drill Time = 11.58 Hours
Average Penetration Rate = 13.13 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 10.5" S X 12.71" E
S-ARC North = No Overlap at Full Depth, Connected with Conforming Pile.
S-ARC South = 39.19

Quality Coring: None.

Comments:

Primary Pile # 95
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/11/93	1	DHD130A	153	11.17		13.70		05/12/93			40	35.7	12.0%

Total Drill Time = 11.17 Hours
Average Penetration Rate = 13.70 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.7" N X 4.03" E
S-ARC North = 39.19
S-ARC South = 23.57

Quality Coring: None.

Comments:

Secondary Pile # 96
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/12/93	2	DHD130A	151		21.98		6.87		02/12/93			54.5	35.3	54.6%

Total Drill Time = 21.98 Hours
Average Penetration Rate = 6.87 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .63° N X 4.75° E
S-ARC North = 23.57
S-ARC South = 28.82

Quality Coring: None.

Comments:

Primary Pile # 97
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/18/93	2	DHD130A	150		10.92		13.74		06/18/93			41	35.0	17.0%

Total Drill Time = 10.92 Hours
Average Penetration Rate = 13.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3° N X 1.5° W
S-ARC North = 28.82
S-ARC South = 36.61

Quality Coring: None.

Comments:

Secondary Pile # 98
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/08/93	2	DHD130A	153	18.50		8.27	03/10/93			47	35.7	31.9%

Total Drill Time = 18.50 Hours
Average Penetration Rate = 8.27 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 11.7" N X 6.5" W
S-ARC North = 36.61
S-ARC South = No Overlap at Full Depth, Connected with Conforming Pile.

Quality Coring: None.

Comments:

Primary Pile # 99
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/14/93	1	DHD130A	150	11.75		12.77	05/15/93			40	35.0	14.2%

Total Drill Time = 11.75 Hours
Average Penetration Rate = 12.77 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" S X 4.1" W
S-ARC North = No Overlap at Full Depth, Connected with Conforming Pile.
S-ARC South = 28.11

Quality Coring: None.

Comments:

Secondary Pile # 100
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/26/93	1	DHD130A	151	10.33		14.62	03/26/93		48	35.3	36.1%

Total Drill Time = 10.33 Hours
Average Penetration Rate = 14.62 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 5.72° W
S-ARC North = 28.11
S-ARC South = 32.72

Quality Coring: None.

Comments:

Primary Pile # 101
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/27/93	1	DHD130A	150	9.50		15.79	05/27/93		40	35.0	14.2%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 15.79 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5° N X 1.5° W
S-ARC North = 32.72
S-ARC South = 14.47

Quality Coring: None.

Comments:

Secondary Pile # 102
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
11/09/92	1	DHD130A	60	60	2.75	2.40	21.82	25.00	11/09/92	22		14.0	57.0%	
11/17/92	1	DHD130A	62	60	0.08	1.85	25.00	12.69	11/17/92	10.5		14.5	-27.5%	
11/23/92	2	DHD130A	146	146	6.62	3.20	21.82	33.51	09/03/93			35.3	19.1%	
09/03/93	1	CLUSTER	151	146	0.80	3.20	6.25	45.63		LEFT OPEN	SUMF PILE	42		

Total Drill Time = 10.25 Hours
Average Penetration Rate = 14.73 Feet / Hour

Total Redrill Time = 7.45 Hours
Average Penetration Rate = 35.97 Feet / Hour

Verticality Information
At Full Depth = 1.9° S X 0° E/W
S--ARC North = 14.47
S--ARC South = 29.35

Quality Coring: None.

Comments:

Primary Pile # 103
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
06/03/93	2	DHD130A	150	150	9.83	9.83	15.26	15.26	06/04/93			41	35.0	17.0%

Total Drill Time = 9.83 Hours
Average Penetration Rate = 15.26 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S--ARC North = 29.35
S--ARC South = 21.10

Quality Coring: None.

Comments:

Secondary Pile # 104
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/16/93	2	DHD130A	155	15.93		9.73	04/17/93			56	36.2	54.7%

Total Drill Time = 15.93 Hours
Average Penetration Rate = 9.73 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.65° S X .66° E
S-ARC North = 21.10
S-ARC South = 33.59

Quality Coring: None.

Comments:

Primary Pile # 105
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/10/93	1	DHD130A	153	11.33		13.50	05/12/93			40	35.7	12.0%

Total Drill Time = 11.33 Hours
Average Penetration Rate = 13.50 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.76° N X 1.5° W
S-ARC North = 33.59
S-ARC South = No Overlap at Full Depth, Corrected with Conforming Pile.

Quality Coring: None.

Comments:

Secondary Pile # 106
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/21/93	1	DHD130A	152	14.15		10.74		04/21/93			45	35.5	26.8%

Total Drill Time = 14.15 Hours
Average Penetration Rate = 10.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 9.78° S X 8.15° W
S-ARC North = No Overlap at Full Depth, Connected with Conforming Pile.
S-ARC South = 38.97

Quality Coring: None.

Comments:

Primary Pile # 107
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/20/93	1	DHD130A	150	12.08		12.42		05/20/93			40	35.0	14.2%

Total Drill Time = 12.08 Hours
Average Penetration Rate = 12.42 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.51° N X 2.27° E
S-ARC North = 38.97
S-ARC South = 26.21

Quality Coring: None.

Comments:

Secondary Pile # 108
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Equipment		Excavation Method		Drill Footage		Pure Drill Time		Penetration Rate		Concrete		Non-Spec. Concrete		Spec. Concrete		Theoretical Volume		Overbreak	
Drilling Date	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak			
11/11/92	1	DHD130A	37		1.75	2.08	21.14	2.08	21.14	17.79	11/11/92		10	42.5	8.6	15.7%			
11/20/92	1	DHD130A	64		2.75	7.92	9.82	7.92	9.82	11/21/92		14		14.9	-6.3%				
03/09/93	2	DHD130A	152		12.75		6.90		6.90	03/10/93				35.5	19.7%				

Total Drill Time = 17.25 Hours
Average Penetration Rate = 8.81 Feet / Hour

Total Redrill Time = 10.00 Hours
Average Penetration Rate = 10.10 Feet / Hour

Verticality Information
At Full Depth = 1.3" N X .65" E
S--ARC North = 26.21
S--ARC South = 26.69

Quality Coring: None.

Comments:

Primary Pile # 109
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Equipment		Excavation Method		Drill Footage		Pure Drill Time		Penetration Rate		Concrete		Non-Spec. Concrete		Spec. Concrete		Theoretical Volume		Overbreak	
Drilling Date	Rig #	Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak			
05/14/93	1	DHD130A	150		11.58		12.95		12.95		05/15/93			40	35.0	14.2%			

Total Drill Time = 11.58 Hours
Average Penetration Rate = 12.95 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.28" N X .5" W
S--ARC North = 26.69
S--ARC South = 16.68

Quality Coring: None.

Comments:

Secondary Pile # 110
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (FT)	Redrill (HRS)	Redrill (FT)	Pure Drill Time (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Penetration Rate (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/01/93	2	XL-24	152				7.05	21.56			04/02/93			53	35.5	49.3%

Total Drill Time = 7.05 Hours
Average Penetration Rate = 21.56 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.44" S X 8.13" E
S-ARC North = 16.68
S-ARC South = 34.66

Quality Coring: None.

Comments:

Primary Pile # 111
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (FT)	Redrill (HRS)	Redrill (FT)	Pure Drill Time (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Penetration Rate (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/01/93	1	DHD130A	150				9.17	16.36			06/01/93			41	35.0	17.0%

Total Drill Time = 9.17 Hours
Average Penetration Rate = 16.36 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3" N X 5" E
S-ARC North = 34.66
S-ARC South = 18.48

Quality Coring: None.

Comments:

Secondary Pile # 112
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time	Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (FT / HR)	Redrill (FT / HR)						
04/09/93	2	DHD130A	152		10.72		14.18	04/10/93			46	35.5	29.6%

Total Drill Time = 10.72 Hours
Average Penetration Rate = 14.18 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.91" S X 1.91" E
S-ARC North = 18.48
S-ARC South = 31.01

Quality Coring: None.

Comments:

Primary Pile # 113
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time	Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (FT / HR)	Redrill (FT / HR)						
05/26/93	1	DHD130A	150		9.42		15.92	05/26/93			40.5	35.0	15.6%

Total Drill Time = 9.42 Hours
Average Penetration Rate = 15.92 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.28" N X 2.31" E
S-ARC North = 31.01
S-ARC South = 24.76

Quality Coring: None.

Comments:

Secondary Pile # 114
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/19/93	1	DHD130A	151	10.92		13.83		03/20/93			49	35.3	39.0%

Total Drill Time = 10.92 Hours
Average Penetration Rate = 13.83 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 0° N/S X 4.5° E
S-ARC North = 24.76
S-ARC South = 28.31

Quality Coring: None.

Comments:

Primary Pile # 115
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/27/93	1	XL-24	153	7.17		21.34		03/29/93			42.5	35.7	19.0%

Total Drill Time = 7.17 Hours
Average Penetration Rate = 21.34 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 1.27° N X 1.91° E
S-ARC North = 28.31
S-ARC South = 27.34

Quality Coring: None.

Comments:

Secondary Pile # 116
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/26/93	1	DHD130A	154	9.91		15.54		02/26/93			51	36.0	41.8%

Total Drill Time = 9.91 Hours
Average Penetration Rate = 15.54 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.15" N X 2.77" W
S-ARC North = 27.34
S-ARC South = 14.93

Quality Coring: None.

Comments:

Primary Pile # 117
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/21/93	1	DHD130A	150	10.67		14.06		05/21/93			41	35.0	17.0%

Total Drill Time = 10.67 Hours
Average Penetration Rate = 14.06 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 4.11" S X 2.83" E
S-ARC North = 14.93
S-ARC South = 32.82

Quality Coring: None.

Comments:

Secondary Pile # 118
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/13/93	2	DHD130A	151	16.37		9.22		02/13/93			54	35.3	53.1%

Total Drill Time = 16.37 Hours
Average Penetration Rate = 9.22 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = .63° N X 4.69° E
S--ARC North = 32.82
S--ARC South = 18.11

Quality Coring: NQ 0' TO 93'

Comments:

Primary Pile # 119
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/08/93	2	DHD130A	151	13.33		11.33		05/08/93			42	35.3	19.1%

Total Drill Time = 13.33 Hours
Average Penetration Rate = 11.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 4° S X 1.5° W
S--ARC North = 18.11
S--ARC South = 38.75

Quality Coring: None.

Comments:

Secondary Pile # 120
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
02/23/93	1	DHD130A	40		1.16		34.48		02/23/93		10	51	9.3	7.1%					
03/03/93	2	DHD130A	78	40	5.08	4.00	7.48	10.00											
03/17/93	1	DHD130A	151	78	6.83	1.83	10.69	42.62	03/17/93	NO	INFORMAT ION		35.3	44.6%					

Total Drill Time = 13.07 Hours
Average Penetration Rate = 11.55 Feet / Hour

Total Redrill Time = 5.83 Hours
Average Penetration Rate = 20.24 Feet / Hour

Verticality Information
At Full Depth = 5.87" N X 0" E/W
S-ARC North = 38.75
S-ARC South = 16.66

Quality Coring: None.

Comments:

Primary Pile # 121
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
06/07/93	2	DHD130A	150		12.08		12.42		06/08/93			40.5	35.0	15.6%					

Total Drill Time = 12.08 Hours
Average Penetration Rate = 12.42 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0" N/S X 2.75" E
S-ARC North = 16.66
S-ARC South = 33.51

Quality Coring: None.

Comments:

Secondary Pile # 122
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION			
Drilling Date	Equipment Rig #	Excavation Method		Penetration Rate		Concrete Date	Theoretical Volume (CU.YD.)
		Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)		
03/24/93	1	DHD130A	151	22.10	6.83	03/25/93	35.3
							43.2%

Total Drill Time = 22.10 Hours
Average Penetration Rate = 6.83 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 5.41" N X 5.41" E
S-ARC North = 33.51
S-ARC South = 15.31

Quality Coring: None.

Comments: Connection made with pile 144

Primary Pile # 123
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION			
Drilling Date	Equipment Rig #	Excavation Method		Penetration Rate		Concrete Date	Theoretical Volume (CU.YD.)
		Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)		
06/04/93	2	DHD130A	150	11.08	13.54	06/05/93	35.0
							14.2%

Total Drill Time = 11.08 Hours
Average Penetration Rate = 13.54 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" S X 2" E
S-ARC North = 15.31
S-ARC South = 26.41

Quality Coring: None.

Comments:

Secondary Pile # 124
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/03/92	1	DHD130A	27	27		1.35		20.00			11/17/93	SUMP		44	35.3	24.8%
11/16/92	1	DHD130A	151	151	27	11.50	1.00	10.78		27.00						

Total Drill Time = 12.85 Hours
 Average Penetration Rate = 11.75 Feet / Hour
 Total Redrill Time = 1.00 Hours
 Average Penetration Rate = 27.00 Feet / Hour

Verticality Information
 At Full Depth = 1" S X 1.5" W
 S--ARC North = 26.41
 S--ARC South = 29.53

Quality Coring: None.

Comments:

Primary Pile # 125
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/12/93	2	DHD130A	150	150		10.59		14.16			06/12/93			39.5	35.0	12.8%

Total Drill Time = 10.59 Hours
 Average Penetration Rate = 14.16 Feet / Hour
 Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 1" N X 1" W
 S--ARC North = 29.53
 S--ARC South = 27.27

Quality Coring: None.

Comments:

Secondary Pile # 126
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/24/93	1	DHD130A	153		9.59		15.95		05/25/93			47	35.7	31.9%

Total Drill Time = 9.59 Hours
Average Penetration Rate = 15.95 Feet / Hour

Total Redrill Time = None

Average Penetration Rate = None

Verticality Information

At Full Depth = 1.5" N X 3.6" W
S-ARC North = 27.27
S-ARC South = 35.30

Quality Coring: None.

Comments:

Primary Pile # 127
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/16/93	2	DHD130A	150		10.08		14.88		06/17/93			40	35.0	14.2%

Total Drill Time = 10.08 Hours
Average Penetration Rate = 14.88 Feet / Hour

Total Redrill Time = None

Average Penetration Rate = None

Verticality Information

At Full Depth = 8.56" N X .5" W
S-ARC North = 35.30
S-ARC South = 17.99

Quality Coring: None.

Comments:

Secondary Pile # 128
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/23/93	1	DHD130A	38		1.67		22.75			02/23/93		12		8.9	35.2%
04/16/93	2	DHD130A	152	38	9.83	1.10	11.60		34.55	04/17/93			47	35.5	32.4%

Total Drill Time = 11.50 Hours
Average Penetration Rate = 13.22 Feet / Hour

Total Redrill Time = 1.10 Hours
Average Penetration Rate = 34.55 Feet / Hour

Verticality Information
At Full Depth = 3.8" N X 6.36" W
S-ARC North = 17.99
S-ARC South = 24.52

Quality Coring: None.

Comments:

Primary Pile # 129
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/21/93	2	DHD130A	150		11.50		13.04			06/22/93			40.5	35.0	15.6%

Total Drill Time = 11.50 Hours
Average Penetration Rate = 13.04 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.52" N X 2.77" W
S-ARC North = 24.52
S-ARC South = 15.83

Quality Coring: None.

Comments:

Secondary Pile # 130
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
		Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)							
02/10/93	2	DHD130A	152		11.24		13.52		02/11/93	45.5	35.5	28.2%

Total Drill Time = 11.24 Hours
Average Penetration Rate = 13.52 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.65" S X .79" E
S--ARC North = 15.83
S--ARC South = 28.92

Quality Coring: None.

Comments:

Primary Pile # 131
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
		Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)							
06/19/93	2	DHD130A	150		11.50		13.04		06/19/93	40	35.0	14.2%

Total Drill Time = 11.50 Hours
Average Penetration Rate = 13.04 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.01" S X 2.52" E
S--ARC North = 28.92
S--ARC South = 26.02

Quality Coring: None.

Comments:

Secondary Pile # 132
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/14/93	1	DHD130A	153	14.35		10.66		03/15/93			40	35.7	12.0%

Total Drill Time = 14.35 Hours
Average Penetration Rate = 10.66 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.5" S X 3.15" E
S-ARC North = 26.02
S-ARC South = 30.08

Quality Coring: None.

Comments:

Primary Pile # 133
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/28/93	1	DHD130A	153	7.58		20.18		05/29/93			39	35.7	9.2%

Total Drill Time = 7.58 Hours
Average Penetration Rate = 20.18 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0" N/S X 1.5" E
S-ARC North = 30.08
S-ARC South = 26.98

Quality Coring: None.

Comments:

Secondary Pile # 134
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/21/92	1	DHD130A	31	1.83			16.94	11/23/94			7	7.2	38.1%
11/23/92	1	DHD130A	62	1.50			41.33	12/07/92	13			14.5	9.2%
12/03/92	1	DHD130A	151	7.33	62	3.25	12.14					35.3	

Total Drill Time = 10.66 Hours
Average Penetration Rate = 17.07 Feet / Hour

Total Redrill Time = 3.25 Hours
Average Penetration Rate = 19.08 Feet / Hour

Verticality Information
At Full Depth = 25° N X .63° W
S--ARC North = 26.96
S--ARC South = 33.87

Quality Coring: None.

Comments:

Primary Pile # 135
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/13/93	2	DHD130A	150	12.33			12.17	05/13/93			40	35.0	14.2%

Total Drill Time = 12.33 Hours
Average Penetration Rate = 12.17 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 6° N X 2.5° E
S--ARC North = 33.87
S--ARC South = Deficient Joint Width at Full Depth, Connected with Conforming Pile.

Quality Coring: None.

Comments:

Secondary Pile # 136
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/25/93	1	DHD130A	151		16.07		9.40		01/28/93			43	35.3	21.9%

Total Drill Time = 16.07 Hours
Average Penetration Rate = 9.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.2° S X 7.65° W
S-ARC North = Deficient Joint Width at Full Depth, Corrected with Conforming Pile.
S-ARC South = 32.35

Quality Coring: NQ 0' TO 152'. (2/6/93)

Comments: Used pump truck for concrete placement

Primary Pile # 137
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/15/93	2	DHD130A	150		12.33		12.17		06/16/93			40	35.0	14.2%

Total Drill Time = 12.33 Hours
Average Penetration Rate = 12.17 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.89° N X 2° W
S-ARC North = 32.35
S-ARC South = 22.27

Quality Coring: None.

Comments:

Secondary Pile # 138
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
11/13/92	1	DHD130A	151		12.28	12.30	11/14/92		41	35.3	16.3%

Total Drill Time = 12.28 Hours
Average Penetration Rate = 12.30 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 22.27
S-ARC South = 32.66

Quality Coring: None.

Comments: Old Soletanche panel

Primary Pile # 139
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
06/02/93	2	DHD130A	150		11.09	13.53	06/03/93		41	35.0	17.0%

Total Drill Time = 11.09 Hours
Average Penetration Rate = 13.53 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4.53° N X .63° W
S-ARC North = 32.66
S-ARC South = 16.71

Quality Coring: None.

Comments:

Secondary Pile # 140
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/08/93	1	DHD130A	32	3.41	32	1.16	9.38	27.59	02/09/93		8	43	7.5	7.1%
03/04/93	2	DHD130A	153	14.50			8.34		03/04/93				35.7	20.4%

Total Drill Time = 17.91 Hours
Average Penetration Rate = 8.54 Feet / Hour

Total Redrill Time = 1.16 Hours
Average Penetration Rate = 27.59 Feet / Hour

Verticality Information
At Full Depth = 1.3" S X 3.6" W
S-ARC North = 16.71
S-ARC South = 24.13

Quality Coring: Joint 140/14 1; 6" core, 30.3'; 9/22/93

Comments:

Primary Pile # 141
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/05/93	1	DHD130A	153	8.71			17.57		04/06/93			41.5	35.7	16.2%

Total Drill Time = 8.71 Hours
Average Penetration Rate = 17.57 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.84" S X 0' E/W
S-ARC North = 24.13
S-ARC South = 24.41

Quality Coring: None.

Comments:

**Secondary Pile # 142
Area "A"**

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time			Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Redrill (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)						
03/18/93	1	DHD130A	153	14.53			10.53		03/19/93		50	35.7	39.9%	

Total Drill Time = 14.53 Hours
Average Penetration Rate = 10.53 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4.45" S X 0" E/W
S-ARC North = 24.41
S-ARC South = 38.51

Quality Coring: None.

Comments:

**Primary Pile # 143
Area "A"**

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time			Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Redrill (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)						
05/24/93	2	DHD130A	150	10.09			14.87		05/25/93		40	35.0	14.2%	

Total Drill Time = 10.09 Hours
Average Penetration Rate = 14.87 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 5.13" N X .5" E
S-ARC North = 38.51
S-ARC South = 20.62

Quality Coring: None.

Comments:

Secondary Pile # 144
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/27/93	1	XL-24	151	5.50		27.45	03/27/93			48	35.3	36.1%

Total Drill Time = 5.50 Hours
Average Penetration Rate = 27.45 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 1.25" N X 2.5" E
S-ARC North = 20.62
S-ARC South = 25.65

Quality Coring: None.

Comments: Connected with pile 122

Primary Pile # 145
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/05/93	2	DHD130A	150	10.92		13.74	06/07/93			42	35.0	19.9%

Total Drill Time = 10.92 Hours
Average Penetration Rate = 13.74 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = .5" N X 1.7" E
S-ARC North = 25.65
S-ARC South = 26.00

Quality Coring: None.

Comments:

Secondary Pile # 146
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
04/17/93	1	DHD130A	153		9.82	15.58	04/19/93		44	35.7	23.2%

Total Drill Time = 9.82 Hours
Average Penetration Rate = 15.58 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X .70° E
S-ARC North = 26.00
S-ARC South = 30.62

Quality Coring: None.

Comments:

Primary Pile # 147
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
05/26/93	1	XL-24	150		6.75	22.22	05/26/93		40	35.0	14.2%

Total Drill Time = 6.75 Hours
Average Penetration Rate = 22.22 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3° N X 1.5° W
S-ARC North = 30.62
S-ARC South = 19.72

Quality Coring: None.

Comments:

Secondary Pile # 148
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
04/08/93	1	DHD130A	152		10.16	14.96	04/08/93		46	35.5	29.6%

Total Drill Time = 10.16 Hours
Average Penetration Rate = 14.96 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.24" S X 1.86" E
S-ARC North = 19.72
S-ARC South = 34.32

Quality Coring: None.

Comments:

Primary Pile # 149
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
05/03/93	2	DHD130A	152		13.08	11.62	05/07/93		40.5	35.5	14.1%

Total Drill Time = 13.08 Hours
Average Penetration Rate = 11.62 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 5.94" N X 4.82" W
S-ARC North = 34.32
S-ARC South = No Overlap at Full Depth, Corrected with Conforming Pile.

Quality Coring: None.

Comments:

Secondary Pile # 150
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/31/93	1	DHD130A	152	11.20		13.57		04/02/93			43	35.5	21.1%

Total Drill Time = 11.20 Hours
Average Penetration Rate = 13.57 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 7.94" S X 6.04" E
S-ARC North = No Overlap at Full Depth, Corrected with Conforming Pile.
S-ARC South = 33.74

Quality Coring: None.

Comments:

Primary Pile # 151
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/01/93	2	DHD130A	90	5.75		15.65		06/01/93			24	21.0	14.2%

Total Drill Time = 5.75 Hours
Average Penetration Rate = 15.65 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" N X 0" EW
S-ARC North = 33.74
S-ARC South = 26.74

Quality Coring: None.

Comments:

Secondary Pile # 152
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/22/93	1	DHD130A	91	10.66		8.54		02/25/93			32	21.3	50.6%

Total Drill Time = 10.66 Hours
Average Penetration Rate = 8.54 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.66° N X 5.63° W
S-ARC North = 28.74
S-ARC South = 22.30

Quality Coring: None.

Comments:

Primary Pile # 153
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/19/93	2	DHD130A	90	8.42		10.69		05/20/93			24	21.0	14.2%

Total Drill Time = 8.42 Hours
Average Penetration Rate = 10.69 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1° S X 1.77° W
S-ARC North = 22.30
S-ARC South = 33.10

Quality Coring: None.

Comments:

Secondary Pile # 154
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
03/15/93	1	DHD130A	91		9.10	10.00	03/16/93			29.5	21.3	38.8%

Total Drill Time = 9.10 Hours
Average Penetration Rate = 10.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 4" N X 4" W
S-ARC North = 33.10
S-ARC South = 21.87

Quality Coring: None.

Comments:

Primary Pile # 155
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
06/23/93	2	DHD130A	90		6.50	13.85	06/23/93			25	21.0	19.0%

Total Drill Time = 6.50 Hours
Average Penetration Rate = 13.85 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.26" N X 1.01" E
S-ARC North = 21.87
S-ARC South = 23.35

Quality Coring: None.

Comments:

Secondary Pile # 156
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/19/93	1	XL-24	93	3.08			30.19		04/20/93			29	21.7	33.5%

Total Drill Time = 3.08 Hours
Average Penetration Rate = 30.19 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" S X 0" E/W
S-ARC North = 23.35
S-ARC South = 27.45

Quality Coring: None.

Comments:

Primary Pile # 157
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/17/93	2	DHD130A	90	6.75			13.33		06/17/93			24	21.0	14.2%

Total Drill Time = 6.75 Hours
Average Penetration Rate = 13.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .5" S X .5" E
S-ARC North = 27.45
S-ARC South = 29.53

Quality Coring: None.

Comments:

Secondary Pile # 158
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
05/08/93	2	DHD130A	90	30	8.50	2.50	10.59	12.00	05/10/93			25.5	21.0	21.3%
05/25/93	2	DHD130A							05/25/93			8	7.0	see comment

Total Drill Time = 8.50 Hours
Average Penetration Rate = 7.06 Feet / Hour

Total Redrill Time = 2.50 Hours
Average Penetration Rate = 12.00 Feet / Hour

Verticality Information
At Full Depth = 1.55" N X .52" W
S--ARC North = 29.53
S--ARC South = 11.33

Quality Coring: None.

Comments: Accidentally redrilled 30' on 5/25/93

Primary Pile # 159
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
06/22/93	2	DHD130A	90		6.08		14.80		06/22/93			24	21.0	14.2%

Total Drill Time = 6.08 Hours
Average Penetration Rate = 14.80 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 6.57" S X 1.26" W
S--ARC North = 11.33
S--ARC South = 25.97

Quality Coring: None.

Comments:

Secondary Pile # 160
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
04/14/93	1	DHD130A	93		8.75	10.63	04/14/93			26	21.7	19.7%

Total Drill Time = 8.75 Hours
Average Penetration Rate = 10.63 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Vertically Information

At Full Depth = 6.75" S X 3" E
S-ARC North = 25.97
S-ARC South = 37.08

Quality Coring: None.

Comments:

Primary Pile # 161
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
05/17/93	1	DHD130A	90		7.63	11.80	05/18/93			25.5	21.0	21.3%

Total Drill Time = 7.63 Hours
Average Penetration Rate = 11.80 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Vertically Information

At Full Depth = 1.83" N X 0" E/W
S-ARC North = 37.08
S-ARC South = 14.85

Quality Coring: None.

Comments:

Secondary Pile # 162
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Drill (FT/HR)					
04/03/93	1	DHD130A	93		6.91	13.46	04/05/93		29	21.7	33.5%

Total Drill Time = 6.91 Hours
Average Penetration Rate = 13.46 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4.8" S X 3.29" E
S--ARC North = 14.85
S--ARC South = 31.57

Quality Coring: None.

Comments:

Primary Pile # 163
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Drill (FT/HR)					
06/12/93	2	DHD130A	90		6.58	13.68	06/12/93		23	21.0	9.4%

Total Drill Time = 6.58 Hours
Average Penetration Rate = 13.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .76" S X .76" W
S--ARC North = 31.57
S--ARC South = 26.18

Quality Coring: None.

Comments:

Secondary Pile # 164
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT./HR)	Drill (FT./HR)	Redrill (FT./HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/29/93	1	DHD130A	93		8.66		10.74			03/30/93			32	21.7	47.3%

Total Drill Time = 8.66 Hours
Average Penetration Rate = 10.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 1.03" S X 1.81" E
S-ARC North = 26.18
S-ARC South = 28.12

Quality Coring: NX/NQ to 82' on 8/14/93.

Comments:

Primary Pile # 165
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT./HR)	Drill (FT./HR)	Redrill (FT./HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/12/93	2	DHD130A	90		6.42		14.02			05/12/93			24	21.0	14.2%

Total Drill Time = 6.42 Hours
Average Penetration Rate = 14.02 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 0" N/S X .26" E
S-ARC North = 28.12
S-ARC South = 29.50

Quality Coring: None.

Comments:

Secondary Pile # 166
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/22/93	1	DHD130A	91	15.00		6.07		03/23/93			28	21.3	31.8%

Total Drill Time = 15.00 Hours
Average Penetration Rate = 6.07 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.02" N X 0" E/W
S-ARC North = 29.50
S-ARC South = 24.56

Quality Coring: None.

Comments:

Primary Pile # 167
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/27/93	2	DHD130A	90	5.83		15.44		05/27/93			24	21.0	14.2%

Total Drill Time = 5.83 Hours
Average Penetration Rate = 15.44 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .51" N X 0" E/W
S-ARC North = 24.56
S-ARC South = 27.43

Quality Coring: None.

Comments:

Secondary Pile # 168
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/18/93	1	DHD130A	92	7.24			12.71		03/18/93			26.5	21.5	23.3%

Total Drill Time = 7.24 Hours
Average Penetration Rate = 12.71 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" N X 1" E
S-ARC North = 27.43
S-ARC South = 27.78

Quality Coring: None.

Comments:

Primary Pile # 169
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/07/93	2	DHD130A	90	6.00			15.00		06/06/93			24	21.0	14.2%

Total Drill Time = 6.00 Hours
Average Penetration Rate = 15.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.76" N X 0" E/W
S-ARC North = 27.78
S-ARC South = 30.44

Quality Coring: None.

Comments:

Secondary Pile # 170
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
03/12/93	1	DHD130A	92		10.63		03/13/93			27	21.5	25.7%

Total Drill Time = 10.63 Hours
Average Penetration Rate = 8.65 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 4.5" N X 0" EW
S-ARC North = 30.44
S-ARC South = 19.6

Quality Coring: None.

Comments:

Primary Pile # 171
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
05/06/93	2	DHD130A	90		5.00		05/06/93			24	21.0	14.2%

Total Drill Time = 5.00 Hours
Average Penetration Rate = 18.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0" N/S X .5" W
S-ARC North = 19.6
S-ARC South = 25.24

Quality Coring: None.

Comments:

Secondary Pile # 172
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/24/93	1	DHD130A	92	9.16			10.04	02/26/93			30	21.5	39.6%

Total Drill Time = 9.16 Hours
Average Penetration Rate = 10.04 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" S X .77" E
S--ARC North = 25.24
S--ARC South = 31.06

Quality Coring: None.

Comments:

Primary Pile # 173
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/22/93	2	DHD130A	90	5.50			16.36	05/22/93			24.5	21.0	16.6%

Total Drill Time = 5.50 Hours
Average Penetration Rate = 16.36 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.22" N X 0" E/W
S--ARC North = 31.06
S--ARC South = 24.57

Quality Coring: None.

Comments:

Secondary Pile # 174
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)						
02/01/93	2	DHD130A	91		5.50		02/02/93			33	21.3	55.3%

Total Drill Time = 5.50 Hours
Average Penetration Rate = 16.55 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = .75" NX 1" W
S-ARC North = 24.57
S-ARC South = 25.69

Quality Coring: NX/NQ to 92' on 2/12/93

Comments:

Primary Pile # 175
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)						
06/03/93	1	DHD130A	90		7.75		06/03/93			24	21.0	14.2%

Total Drill Time = 7.75 Hours
Average Penetration Rate = 11.61 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 0" N/S X .25" W
S-ARC North = 25.69
S-ARC South = 27.47

Quality Coring: None.

Comments:

Secondary Pile # 176
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/16/93	1	DHD130A	93	10.40			8.94		03/16/93			30	21.7	38.1%

Total Drill Time = 10.40 Hours
Average Penetration Rate = 8.94 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .5° N X .5° W
S-ARC North = 27.47
S-ARC South = 26.03

Quality Coring: None.

Comments:

Primary Pile # 177
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/14/93	2	DHD130A	90	5.00			18.00		06/14/93			24	21.0	14.2%

Total Drill Time = 5.00 Hours
Average Penetration Rate = 18.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 26.03
S-ARC South = 21.86

Quality Coring: None.

Comments:

Secondary Pile # 178
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time (HRS)	Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (FT/HR)	Redrill (FT/HR)						
03/25/93	1	DHD130A	92		7.66	12.01		03/26/93		32		21.5	49.0%
04/21/93	1	DHD130A	93	92	0.10	10.00	2.58	04/21/93			27	21.7	24.3%

Total Drill Time = 7.76 Hours
 Average Penetration Rate = 11.98 Feet / Hour
 Total Redrill Time = 2.58 Hours
 Average Penetration Rate = 35.66 Feet / Hour

Verticality Information
 At Full Depth = 3" S X 3" W
 S-ARC North = 21.88
 S-ARC South = 34.94

Quality Coring: None.

Comments:

Primary Pile # 179
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time (HRS)	Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (FT/HR)	Redrill (FT/HR)						
05/13/93	2	DHD130A	90		7.34	12.26		05/13/93			24	21.0	14.2%

Total Drill Time = 7.34 Hours
 Average Penetration Rate = 12.26 Feet / Hour
 Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 3.66" N X 0" E/W
 S-ARC North = 34.94
 S-ARC South = 25.05

Quality Coring: None.

Comments:

Secondary Pile # 180
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/04/93	2	DHD130A	92	6.75		13.63		05/04/93			27.5	21.5	28.0%

Total Drill Time = 6.75 Hours
Average Penetration Rate = 13.63 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.5" N X 1" W
S-ARC North = 25.05
S-ARC South = 26.89

Quality Coring: None.

Comments:

Primary Pile # 181
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/28/93	2	DHD130A	90	5.83		15.44		05/29/93			24.5	21.0	16.6%

Total Drill Time = 5.83 Hours
Average Penetration Rate = 15.44 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.78" N X 2" E
S-ARC North = 26.89
S-ARC South = 18.5

Quality Coring: None.

Comments:

Secondary Pile # 182
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (FT/HR)						
04/14/93	1	DHD130A	93		6.16		04/15/93			28	21.7	28.9%

Total Drill Time = 6.16 Hours
Average Penetration Rate = 15.10 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.28° S X 3.29° E
S-ARC North = 18.5
S-ARC South = 30.29

Quality Coring: None.

Comments:

Primary Pile # 183
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (FT/HR)						
05/19/93	2	DHD130A	90		7.33		05/19/93			24	21.0	14.2%

Total Drill Time = 7.33 Hours
Average Penetration Rate = 12.28 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .5° N X .5° E
S-ARC North = 30.29
S-ARC South = 23.77

Quality Coring: None.

Comments:

Secondary Pile # 184
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/26/93	1	DHD130A	93	14.69		6.33	02/27/93		28	21.7	28.9%

Total Drill Time = 14.69 Hours
Average Penetration Rate = 6.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5° S X 75° E
S-ARC North = 23.77
S-ARC South = 28.73

Quality Coring: None.

Comments:

Primary Pile # 185
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/03/93	1	DHD130A	92	7.10		12.96	04/05/93		25.5	21.5	18.7%

Total Drill Time = 7.10 Hours
Average Penetration Rate = 12.96 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 2.53° E
S-ARC North = 28.73
S-ARC South = 17.97

Quality Coring: None.

Comments:

Secondary Pile # 186
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/22/93	1	DHD130A	93	7.50		12.40			02/23/93			26	21.7	19.7%

Total Drill Time = 7.50 Hours
Average Penetration Rate = 12.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3° S X 9° W
S-ARC North = 17.97
S-ARC South = 29.77

Quality Coring: None.

Comments:

Primary Pile # 187
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/07/93	2	DHD130A	90	7.00		12.86			05/07/93			23	21.0	9.4%

Total Drill Time = 7.00 Hours
Average Penetration Rate = 12.86 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .5° N X 1.5° W
S-ARC North = 29.77
S-ARC South = 26.56

Quality Coring: None.

Comments:

Secondary Pile # 188
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
01/12/93	2	Test	13				01/21/93			28	21.5	
01/18/93	1	DHD130A	92		15.80	5.82						30.3%

Total Drill Time = 15.80 Hours
Average Penetration Rate = 6.65 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .38° N X 1.75° W
S--ARC North = 26.56
S--ARC South = 26.04

Quality Coring: NQ FROM 0' TO 89.8', MOVED 8' NORTH OF CENTER OF PILE #188 TOOK 6' CORE FROM 0' TO 14.9'

Comments:

Primary Pile # 189
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
06/01/93	2	DHD130A	90		6.50	13.85	06/02/93			24	21.0	14.2%

Total Drill Time = 6.50 Hours
Average Penetration Rate = 13.85 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X .76° E
S--ARC North = 26.04
S--ARC South = 32.3

Quality Coring: None.

Comments:

Secondary Pile # 190
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/17/93	1	DHD130A	90		8.57		10.50			03/18/93			26.5	21.0	26.1%

Total Drill Time = 8.57 Hours
Average Penetration Rate = 10.50 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 4.6" N X 3.07" W
S--ARC North = 32.30
S--ARC South = 18.26

Quality Coring: None.

Comments: Grout side stabilization test from pile 190 to pile 246

Primary Pile # 191
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/15/93	2	DHD130A	90		8.84		10.19			05/15/93			23	21.0	9.4%

Total Drill Time = 8.84 Hours
Average Penetration Rate = 10.19 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .5" S X .5" W
S--ARC North = 18.26
S--ARC South = 30.75

Quality Coring: None.

Comments:

Secondary Pile # 192
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/29/93	1	DHD130A	92	6.00		15.33		03/29/93			27.5	21.5	28.0%

Total Drill Time = 6.00 Hours
Average Penetration Rate = 15.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.56" N X 2.3" W
S-ARC North = 30.75
S-ARC South = 22.06

Quality Coring: None.

Comments:

Primary Pile # 193
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/27/93	2	DHD130A	90	7.67		11.73		05/27/93			24	21.0	14.2%

Total Drill Time = 7.67 Hours
Average Penetration Rate = 11.73 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5" S X 1.26" W
S-ARC North = 22.06
S-ARC South = 24.52

Quality Coring: None.

Comments:

Secondary Pile # 194
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/07/93	1	DHD130A	93		6.80		13.68			04/07/93			25	21.7	15.1%

Total Drill Time = 6.80 Hours
Average Penetration Rate = 13.68 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 1.76° S X 2.53° E
S-ARC North = 24.52
S-ARC South = 30.73

Quality Coring: None.

Comments:

Primary Pile # 195
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/11/93	2	DHD130A	90		7.00		12.86			05/12/93			25	21.0	19.0%

Total Drill Time = 7.00 Hours
Average Penetration Rate = 12.86 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 1.25° N X 1.25° E
S-ARC North = 30.73
S-ARC South = 24.79

Quality Coring: None.

Comments:

Secondary Pile # 196
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Penetration Rate			Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (FT/HR)	Redrill (FT/HR)	Drill (FT/HR)						
02/07/93	1	DHD130A	54	3.33	3.00	16.22	18.00	04/17/93			27	21.7	24.3%	
04/16/93	1	DHD130A	93	4.25	3.00	9.18	18.00							

Total Drill Time = 7.58 Hours
Average Penetration Rate = 12.27 Feet / Hour

Total Redrill Time = 3.00 Hours
Average Penetration Rate = 18.00 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 1.06° W
S-ARC North = 24.79
S-ARC South = 26.49

Quality Coring: None.

Comments:

Primary Pile # 197
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Penetration Rate			Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (FT/HR)	Redrill (FT/HR)	Drill (FT/HR)						
06/12/93	2	DHD130A	90	5.50	5.50	16.36		06/12/93			23	21.0	9.4%	

Total Drill Time = 5.50 Hours
Average Penetration Rate = 16.36 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 2° E
S-ARC North = 26.49
S-ARC South = 26.33

Quality Coring: None.

Comments:

Secondary Pile # 198
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/21/93	1	DHD130A	93	9.58		9.71	04/22/93			39	21.7	79.6%

Total Drill Time = 9.58 Hours
Average Penetration Rate = 9.71 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 1.85° W
S--ARC North = 26.33
S--ARC South = 26.66

Quality Coring: None.

Comments:

Primary Pile # 199
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/02/93	2	DHD130A	90	5.84		15.41	06/02/93			24.5	21.0	16.6%

Total Drill Time = 5.84 Hours
Average Penetration Rate = 15.41 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S--ARC North = 26.66
S--ARC South = 24.51

Quality Coring: None.

Comments:

Secondary Pile # 200
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)											
01/25/93	2	DHD30	91	91	11.91	2.00	7.64	01/30/93	26		25.5	21.3	22.4%						
02/02/93	2	DHD30	91	91		1.67		02/02/94	4			21.3	-81.2%						
05/17/93	2	DHD30	90	91		5.58		05/18/93	16			12.8	24.6%						
05/25/93	2	DHD30	90	91				05/25/93				21.0	21.3%						

Total Drill Time = 11.91 Hours
 Average Penetration Rate = 4.53 Feet / Hour
 Total Redrill Time = 9.25 Hours
 Average Penetration Rate = 29.51 Feet / Hour

Verticality Information
 At Full Depth = 1.5" S X 1" W
 S-ARC North = 24.51
 S-ARC South = 31.15

Quality Coring: 6" Joint core 200/201; 31' deep; on 9/23/93

Comments:

Primary Pile # 201
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)											
06/24/93	2	DHD30	90	90	6.58		13.68	06/24/93			24	21.0	14.2%						

Total Drill Time = 6.58 Hours
 Average Penetration Rate = 13.68 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 1.78" N X 1" W
 S-ARC North = 31.15
 S-ARC South = 23.34

Quality Coring: None.

Comments:

Secondary Pile # 202
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
05/05/93	2	DHD30	90		7.42		12.13		28	21.0	33.2%

Total Drill Time = 7.42 Hours
Average Penetration Rate = 12.13 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5" S X 0" E/W
S--ARC North = 23.34
S--ARC South = 28.83

Quality Coring: None.

Comments:

Primary Pile # 203
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
05/22/93	2	DHD30	90		5.17		17.41		25	21.0	19.0%

Total Drill Time = 5.17 Hours
Average Penetration Rate = 17.41 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" N X 0" E/W
S--ARC North = 28.83
S--ARC South = 30.24

Quality Coring: None.

Comments:

Secondary Pile # 204
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/19/93	1	XL-24	93	2.92			31.85		04/19/93			27	21.7	24.3%

Total Drill Time = 2.92 Hours
Average Penetration Rate = 31.85 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4.55" N X 6.32" W
S-ARC North = 30.24
S-ARC South = 22.58

Quality Coring: None.

Comments:

Primary Pile # 205
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/23/93	2	DHD30	90	7.00			12.86		06/23/93			25	21.0	19.0%

Total Drill Time = 7.00 Hours
Average Penetration Rate = 12.86 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.53" N X 0" E/W
S-ARC North = 22.58
S-ARC South = 20.42

Quality Coring: None.

Comments:

Secondary Pile # 206
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT./HR)	Redrill (FT./HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/10/93	1	DHD30	93	5.40			17.22		04/12/93			30	21.7	38.1%

Total Drill Time = 5.40 Hours
Average Penetration Rate = 17.22 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" S X 1" E
S-ARC North = 20.42
S-ARC South = 34.48

Quality Coring: NX/NQ to 97' deep on 7/10/93, also made connection with pile 186 during coring, at bottom of cored pile

Comments:

Primary Pile # 207
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT./HR)	Redrill (FT./HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/25/93	2	DHD30	90	6.75			13.33		06/26/93			24	21.0	14.2%

Total Drill Time = 6.75 Hours
Average Penetration Rate = 13.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4.55" N X 1.77" E
S-ARC North = 34.48
S-ARC South = 21.61

Quality Coring: None.

Comments:

Secondary Pile # 208
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/10/93	2	DHD30	92	8.25			11.15		05/10/93			27	21.5	25.7%

Total Drill Time = 8.25 Hours
Average Penetration Rate = 11.15 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.31" N X .78" W
S-ARC North = 21.61
S-ARC South = 26.95

Quality Coring: None.

Comments:

Primary Pile # 209
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/03/93	1	DHD30	90	6.17			14.59		06/03/93			24	21.0	14.2%

Total Drill Time = 6.17 Hours
Average Penetration Rate = 14.59 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" N X 1" E
S-ARC North = 26.95
S-ARC South = 24.53

Quality Coring: None.

Comments:

Secondary Pile # 210
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
05/13/93	2	DHD130A	90		8.58		10.49			27	21.0	28.5%

Total Drill Time = 8.58 Hours
Average Penetration Rate = 10.49 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 0' N/S X 0' E/W
S-ARC North = 24.53
S-ARC South = 27.47

Quality Coring: None.

Comments:

Primary Pile # 211
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
06/26/93	2	DHD130A	90		5.75		15.65			24	21.0	14.2%

Total Drill Time = 5.75 Hours
Average Penetration Rate = 15.65 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = .5' N X 0' E/W
S-ARC North = 27.47
S-ARC South = 21.70

Quality Coring: None.

Comments:

Secondary Pile # 212
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/20/93	1	XL-24	93		3.17		29.34		04/20/93			28	21.7	28.9%

Total Drill Time = 3.17 Hours
Average Penetration Rate = 29.34 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.78° S X 1° E
S-ARC North = 21.70
S-ARC South = 21.74

Quality Coring: None.

Comments:

Primary Pile # 213
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/28/93	2	DHD130A	90		5.00		18.00		05/28/93			24	21.0	14.2%

Total Drill Time = 5.00 Hours
Average Penetration Rate = 18.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1° N X 1.5° E
S-ARC North = 21.74
S-ARC South = 29.75

Quality Coring: None.

Comments:

Secondary Pile # 214
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/30/93	1	DHD130A	93	7.05		13.19			03/31/93			28	21.7	28.9%

Total Drill Time = 7.05 Hours
Average Penetration Rate = 13.19 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.5° N X 2.28° W
S-ARC North = 29.75
S-ARC South = 25.52

Quality Coring: None.

Comments:

Primary Pile # 215
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/28/93	2	DHD130A	90	6.88		13.08			06/28/93			24	21.0	14.2%

Total Drill Time = 6.88 Hours
Average Penetration Rate = 13.08 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.78° N X 0° E/W
S-ARC North = 25.52
S-ARC South = 21.73

Quality Coring: None.

Comments:

Secondary Pile # 216
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/20/93	2	DHD130A	90	7.42			12.13		05/20/93			25.5	21.0	21.3%

Total Drill Time = 7.42 Hours
Average Penetration Rate = 12.13 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .5" S X 0" E/W
S-ARC North = 21.73
S-ARC South = 27.45

Quality Coring: None.

Comments:

Primary Pile # 217
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/26/93	2	DHD130A	90	7.58			11.87		05/26/93			25.5	21.0	21.3%

Total Drill Time = 7.58 Hours
Average Penetration Rate = 11.87 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 1" W
S-ARC North = 27.45
S-ARC South = 29.48

Quality Coring: None.

Comments:

Secondary Pile # 218
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
2	DHD130A	38		1.66		22.89		02/02/93		9	26	8.9	1.4%
1	DHD130A	91	38	4.82	2.25	11.00	16.89	04/07/93				21.3	22.4%

Total Drill Time = 6.48 Hours
Average Penetration Rate = 14.04 Feet / Hour
Total Redrill Time = 2.25 Hours
Average Penetration Rate = 16.89 Feet / Hour

Verticality Information
At Full Depth = 2' N X 0° E/W
S-ARC North = 29.48
S-ARC South = 25.96

Quality Coring: None.

Comments:

Primary Pile # 219
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
1	DHD130A	93		5.50		16.91		04/22/93			26	21.7	19.7%

Total Drill Time = 5.50 Hours
Average Penetration Rate = 16.91 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.85' N X 4.37' W
S-ARC North = 25.96
S-ARC South = 26.50

Quality Coring: None.

Comments:

Secondary Pile # 220
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/30/93	2	DHD130A	90		6.58		13.68		07/01/93			24	21.0	14.2%

Total Drill Time = 6.58 Hours
Average Penetration Rate = 13.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2' N X .25' W
S-ARC North = 26.50
S-ARC South = 23.76

Quality Coring: None.

Comments:

Primary Pile # 221
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/06/93	2	DHD130A	90		6.16		14.61		05/07/93			25	21.0	19.0%

Total Drill Time = 6.16 Hours
Average Penetration Rate = 14.61 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0' N/S X .5' E
S-ARC North = 23.76
S-ARC South = 21.72

Quality Coring: None.

Comments:

Secondary Pile # 222
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
04/16/93	1	DHD130A	93		6.34		14.67			26	21.7	19.7%

Total Drill Time = 6.34 Hours
Average Penetration Rate = 14.67 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.29° S X 1° E
S-ARC North = 21.72
S-ARC South = 32.70

Quality Coring: None.

Comments:

Primary Pile # 223
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
05/19/93	2	DHD130A	90		8.67		10.38			25	21.0	19.0%

Total Drill Time = 8.67 Hours
Average Penetration Rate = 10.38 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.25° N X .76° E
S-ARC North = 32.70
S-ARC South = 26.35

Quality Coring: None.

Comments:

Secondary Pile # 224
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION			
Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)
1	DHD130A	92		6.80		13.53	
Drilling Date						Concrete Date	
04/02/93						04/02/93	
						Grout (CU.YD.)	
						Non-Spec. Concrete (CU.YD.)	
						Spec. Concrete (CU.YD.)	26.5
						Theoretical Volume (CU.YD.)	21.5
						Overbreak	23.3%

Total Drill Time = 6.80 Hours
Average Penetration Rate = 13.53 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 1" N X 2" E
S--ARC North = 26.35
S--ARC South = 26.77

Quality Coring: None.

Comments:

Primary Pile # 225
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION			
Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)
2	DHD130A	90		6.59		13.66	
Drilling Date						Concrete Date	
05/11/93						05/12/93	
						Grout (CU.YD.)	
						Non-Spec. Concrete (CU.YD.)	
						Spec. Concrete (CU.YD.)	24
						Theoretical Volume (CU.YD.)	21.0
						Overbreak	14.2%

Total Drill Time = 6.59 Hours
Average Penetration Rate = 13.66 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 1" N X .5" E
S--ARC North = 26.77
S--ARC South = 21.09

Quality Coring: None.

Comments:

Secondary Pile # 226
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/09/93	1	DHD130A	92	6.30		14.60		04/09/93			26	21.5	21.0%

Total Drill Time = 6.30 Hours
Average Penetration Rate = 14.60 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.28° S X 3.79° W
S-ARC North = 21.09
S-ARC South = 31.68

Quality Coring: None.

Comments: 6' Joint core 226/227; 30.3' deep on 8/19/93

Primary Pile # 227
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/28/93	2	DHD130A	90	8.75		10.29		06/29/93			24	21.0	14.2%

Total Drill Time = 8.75 Hours
Average Penetration Rate = 10.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2° N X 1° E
S-ARC North = 31.68
S-ARC South = 23.75

Quality Coring: None.

Comments:

Secondary Pile # 228
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/15/93	2	DHD130A	90		8.75		10.29		05/15/93			26	21.0	23.7%

Total Drill Time = 8.75 Hours
Average Penetration Rate = 10.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 23.75
S-ARC South = 24.63

Quality Coring: None.

Comments:

Primary Pile # 229
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/02/93	1	DHD130A	90		5.33		16.89		06/02/93			24	21.0	14.2%

Total Drill Time = 5.33 Hours
Average Penetration Rate = 16.89 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.4° S X 1.7° W
S-ARC North = 24.63
S-ARC South = 30.56

Quality Coring: None.

Comments:

Secondary Pile # 230
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
01/26/93	2	DHD130A	91		11.66		01/30/93		27		21.3	27.1%
05/27/93	2	DHD130A		90	3.58		05/28/93			27	21.0	28.5%

Total Drill Time = 11.66 Hours
 Average Penetration Rate = 0.09 Feet / Hour
 Total Redrill Time = 3.58 Hours
 Average Penetration Rate = 25.14 Feet / Hour

Verticality Information
 At Full Depth = 1.5° S X 0° E/W
 S-ARC North = 30.56
 S-ARC South = 24.56

Quality Coring: None.

Comments: Hole collapsed on 1/30/93

Primary Pile # 231
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
06/14/93	2	DHD130A	90		6.00		06/14/93			24	21.0	14.2%

Total Drill Time = 6.00 Hours
 Average Penetration Rate = 15.00 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 0° N/S X 0° E/W
 S-ARC North = 24.56
 S-ARC South = 24.46

Quality Coring: None.

Comments:

Secondary Pile # 232
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/25/93	2	DHD130A	90		8.75		10.29	05/25/93			25.5	21.0	21.3%

Total Drill Time = 8.75 Hours
Average Penetration Rate = 10.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.57° S X 5° W
S-ARC North = 24.46
S-ARC South = 28.90

Quality Coring: None.

Comments:

Primary Pile # 233
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/24/93	2	DHD130A	90		6.25		14.40	06/25/93			23	21.0	9.4%

Total Drill Time = 6.25 Hours
Average Penetration Rate = 14.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S / X 0° E/W
S-ARC North = 28.90
S-ARC South = 28.14

Quality Coring: None.

Comments:

Secondary Pile # 234
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/21/93	2	DHD130A	90	8.67			10.38	05/22/93			26.5	21.0	26.1%

Total Drill Time = 8.67 Hours
Average Penetration Rate = 10.38 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" N X .75" W
S-ARC North = 28.14
S-ARC South = 25.29

Quality Coring: None.

Comments:

Primary Pile # 235
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/04/93	1	DHD130A	90	6.50			13.85	06/05/93			24	21.0	14.2%

Total Drill Time = 6.50 Hours
Average Penetration Rate = 13.85 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 0" EW
S-ARC North = 25.29
S-ARC South = 26.72

Quality Coring: None.

Comments:

Secondary Pile # 236
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
05/18/93	2	DHD130A	90		7.75		11.61			27	21.0	28.5%

Total Drill Time = 7.75 Hours
Average Penetration Rate = 11.61 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0° N/S X 1.26° E
S-ARC North = 26.72
S-ARC South = 30.34

Quality Coring: None.

Comments:

Primary Pile # 237
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
05/26/93	2	DHD130A	90		7.25		12.41			24	21.0	14.2%

Total Drill Time = 7.25 Hours
Average Penetration Rate = 12.41 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 2.78° N X 1° W
S-ARC North = 30.34
S-ARC South = 26.00

Quality Coring: None.

Comments:

Secondary Pile # 238
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/17/93	1	DHD130A	93	6.58			14.13	04/17/93			32	21.7	47.3%

Total Drill Time = 6.58 Hours
Average Penetration Rate = 14.13 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.28" N X 2.28" W
S-ARC North = 26.00
S-ARC South = 20.48

Quality Coring: None.

Comments:

Primary Pile # 239
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/10/93	2	DHD130A	92	8.17			11.26	05/11/93			24	21.5	11.7%

Total Drill Time = 8.17 Hours
Average Penetration Rate = 11.26 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.57" S X .78" E
S-ARC North = 20.48
S-ARC South = 28.21

Quality Coring: None.

Comments:

Secondary Pile # 240
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/02/93	2	DHD130A	46		3.50		13.14		02/03/93		12		10.7	11.7%
04/06/93	1	DHD130A	92	46	4.33	1.60	10.62	28.75	04/06/93			30	21.5	39.6%

Total Drill Time = 7.83 Hours
Average Penetration Rate = 11.75 Feet / Hour

Total Redrill Time = 1.60 Hours
Average Penetration Rate = 28.75 Feet / Hour

Verticality Information
At Full Depth = .5' S X 1.05' E
S-ARC North = 28.21
S-ARC South = 29.88

Quality Coring: None.

Comments:

Primary Pile # 241
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/14/93	2	DHD130A	90		7.00		12.86		05/14/93			24	21.0	14.2%

Total Drill Time = 7.00 Hours
Average Penetration Rate = 12.86 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.86' N X .94' W
S-ARC North = 29.88
S-ARC South = 23.21

Quality Coring: None.

Comments:

Secondary Pile # 242
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION			
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (HRS)
04/20/93	2	XL-24	93	4.34		21.43	
							Concrete Date
							04/20/93
							GROUT (CU.YD.)
							Non-Spec. Concrete (CU.YD.)
							Spec. Concrete (CU.YD.)
							33.5
							Theoretical Volume (CU.YD.)
							21.7
							Overbreak
							54.3%

Total Drill Time = 4.34 Hours
Average Penetration Rate = 21.43 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 4.04" W
S--ARC North = 23.21
S--ARC South = 25.20

Quality Coring: None.

Comments:

Primary Pile # 243
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION			
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (HRS)
05/28/93	2	DHD130A	90	3.58		25.14	
							Concrete Date
							05/28/93
							GROUT (CU.YD.)
							Non-Spec. Concrete (CU.YD.)
							Spec. Concrete (CU.YD.)
							24
							Theoretical Volume (CU.YD.)
							21.0
							Overbreak
							14.2%

Total Drill Time = 3.58 Hours
Average Penetration Rate = 25.14 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" S X 2" W
S--ARC North = 25.20
S--ARC South = 28.60

Quality Coring: None.

Comments:

Secondary Pile # 244
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)	Penetration Rate (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/05/93	2	DHD130A	92	7.67		11.99		11.99	05/05/93			30	21.5	39.6%

Total Drill Time = 7.67 Hours
Average Penetration Rate = 11.99 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .5" N X .76" E
S-ARC North = 28.60
S-ARC South = 30.01

Quality Coring: None.

Comments:

Primary Pile # 245
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)	Penetration Rate (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/20/93	2	DHD130A	90	8.34		10.79		10.79	05/21/93			25	21.0	19.0%

Total Drill Time = 8.34 Hours
Average Penetration Rate = 10.79 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.14" N X 2.35" W
S-ARC North = 30.01
S-ARC South = 21.40

Quality Coring: None.

Comments:

Secondary Pile # 246
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/16/93	1	DHD130A	93	5.91		15.74		04/16/93			29	21.7	33.5%

Total Drill Time = 5.91 Hours
Average Penetration Rate = 15.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information

At Full Depth = 0° N/S X 2° E
S-ARC North = 21.40
S-ARC South = 26.03

Quality Coring: None.

Comments: End of side grout stabilization test section.

Primary Pile # 247
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/26/93	2	DHD130A	90	6.42		14.02		06/28/93			24	21.0	14.2%

Total Drill Time = 6.42 Hours
Average Penetration Rate = 14.02 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information

At Full Depth = .5° S X 1.7° E
S-ARC North = 26.03
S-ARC South = 22.99

Quality Coring: None.

Comments:

Secondary Pile # 248
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/05/93	2	DHD130A	91	8.80			10.34		02/10/93		16		21.3	-24.7%
04/08/93	2	DHD130A	93	0.17	91	3.50	11.76	26.00	04/09/93			28	21.7	28.9%

Total Drill Time = 8.97 Hours
 Average Penetration Rate = 10.37 Feet / Hour
 Total Redrill Time = 3.50 Hours
 Average Penetration Rate = 26.00 Feet / Hour

Verticality Information
 At Full Depth = 3° S X 1.77° E
 S-ARC North = 22.99
 S-ARC South = 31.10

Quality Coring: None.

Comments:

Primary Pile # 249
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/02/93	1	DHD130A	90	7.42			12.13		06/02/93			24	21.0	14.2%

Total Drill Time = 7.42 Hours
 Average Penetration Rate = 12.13 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate =

Verticality Information
 At Full Depth = .25° N X .76° E
 S-ARC North = 31.10
 S-ARC South = 19.13

Quality Coring: None.

Comments:

Secondary Pile # 250
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)			Drill (FT / HR)	Redrill (FT / HR)						
01/20/93	2	DHD130A	92		12.91		7.13		01/23/93			29	21.5	35.0%

Total Drill Time = 12.91 Hours
Average Penetration Rate = 7.13 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 4.5" S X 0" EW
S-ARC North = 19.13
S-ARC South = 29.11

Quality Coring: NX/NQ cored to 97' on 7/15/93

Comments:

Primary Pile # 251
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)			Drill (FT / HR)	Redrill (FT / HR)						
01/15/93	1	DHD130A	90		5.92		15.20		06/15/93			24	21.0	14.2%

Total Drill Time = 5.92 Hours
Average Penetration Rate = 15.20 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.78" S X 0" EW
S-ARC North = 29.11
S-ARC South = 26.24

Quality Coring: None.

Comments:

Secondary Pile # 252
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
01/25/93	2	DHD130A	92	8.07			11.40			01/27/93			28	21.5	30.3%
04/22/93	1	DHD130A	93	0.05	0	5.50	1860.00		0.00	04/23/94			24	21.7	10.5%

Total Drill Time = 8.12 Hours
Average Penetration Rate = 22.78 Feet / Hour
Total Redrill Time = 5.50
Average Penetration Rate =

Verticality Information
At Full Depth = 3.12' S X 1.12' W
S--ARC North = 26.24
S--ARC South = 30.79

Quality Coring: This pile was cored on 1/25/93 but was not payed for because the pile was accidentally drilled again after coring was completed.

Comments: Pile was accidentally redrilled by contractor on 4/22/93

Primary Pile # 253
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/06/93	2	DHD130A	90	5.83			15.44			05/06/93			24.5	21.0	16.6%

Total Drill Time = 5.83 Hours
Average Penetration Rate = 15.44 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0' N/S X 1' E
S--ARC North = 30.79
S--ARC South = 28.82

Quality Coring: None.

Comments:

Secondary Pile # 254
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (FT)	Redrill (HRS)	Drill (FT/HR)						
04/01/93	1	DHD130A	92	6.91		13.31		04/02/93			26.5	21.5	23.3%

Total Drill Time = 6.91 Hours
Average Penetration Rate = 13.31 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5" N X 0" E/W
S-ARC North = 28.82
S-ARC South = 27.44

Quality Coring: None.

Comments:

Primary Pile # 255
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (FT)	Redrill (HRS)	Drill (FT/HR)						
06/28/93	2	DHD130A	90	4.92		18.29		06/29/93			24	21.0	14.2%

Total Drill Time = 4.92 Hours
Average Penetration Rate = 18.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2" N X .75" E
S-ARC North = 27.44
S-ARC South = 25.29

Quality Coring: None.

Comments:

Secondary Pile # 256
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/03/93	1	DHD130A	91		6.42		14.17		06/04/93			27	21.3	27.1%

Total Drill Time = 6.42 Hours
Average Penetration Rate = 14.17 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" N X 0" E/W
S-ARC North = 25.29
S-ARC South = 29.41

Quality Coring: None.

Comments:

Primary Pile # 257
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/01/93	2	DHD130A	90		4.92		18.29		07/02/93			24	21.0	14.2%

Total Drill Time = 4.92 Hours
Average Penetration Rate = 18.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3" N X 1.78" E
S-ARC North = 29.41
S-ARC South = 23.90

Quality Coring: None.

Comments:

Secondary Pile # 258
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (HRS)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/10/93	1	DHD130A	90	5.75		5.75		15.65	15.65		06/11/93			31.5	21.0	49.9%

Total Drill Time = 5.75 Hours
Average Penetration Rate = 15.65 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.15" N X 0" EW
S-ARC North = 23.90
S-ARC South = 30.96

Quality Coring: NX/NQ cored to 93.3' on 07/08/93.

Comments:

Primary Pile # 259
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (HRS)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/30/93	2	DHD130A	90	6.50		6.50		13.85	13.85		06/30/93			24	21.0	14.2%

Total Drill Time = 6.50 Hours
Average Penetration Rate = 13.85 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 4.30" N X 0" EW
S-ARC North = 30.96
S-ARC South = 18.04

Quality Coring: None.

Comments:

Secondary Pile # 260
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
06/12/93	1	DHD130A	90	7.25	12.41	06/14/93			28.5	21.0	35.6%

Total Drill Time = 7.25 Hours
Average Penetration Rate = 12.41 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" S X 1.26" E
S-ARC North = 18.04
S-ARC South = 31.65

Quality Coring: None.

Comments:

Primary Pile # 261
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
06/26/93	2	DHD130A	90	6.34	14.20	06/28/93			27	21.0	28.5%

Total Drill Time = 6.34 Hours
Average Penetration Rate = 14.20 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3" N X 2.25" W
S-ARC North = 31.65
S-ARC South = 22.19

Quality Coring: None.

Comments:

Secondary Pile # 262
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/05/93	1	DHD130A	90	7.75			11.61	06/05/93			32	21.0	52.3%

Total Drill Time = 7.75 Hours
Average Penetration Rate = 11.61 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 1.52° W
S-ARC North = 22.19
S-ARC South = 30.37

Quality Coring: None.

Comments:

Primary Pile # 263
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/18/93	1	DHD130A	90	4.50			20.00	06/18/93			24	21.0	14.2%

Total Drill Time = 4.50 Hours
Average Penetration Rate = 20.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.78° N X .51° E
S-ARC North = 30.37
S-ARC South = 22.56

Quality Coring: None.

Comments:

Secondary Pile # 264
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/03/93	2	DHD130A	75	6.58		11.40		02/03/93				17.5	19.9%
04/20/93	1	DHD130A	93	1.42	75	12.68	0.75	04/21/93		21	26.5	21.7	22.0%

Total Drill Time = 8.00 Hours
Average Penetration Rate = 11.63 Feet / Hour

Total Redrill Time = 0.75 Hours
Average Penetration Rate = 100.00 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 22.56
S-ARC South = 28.34

Quality Coring: 6" Joint core 264/265; 30.9' deep on 9/24/93

Comments:

Primary Pile # 265
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/26/93	2	DHD130A	90	6.92		13.01		05/27/93			24	21.0	14.2%

Total Drill Time = 6.92 Hours
Average Penetration Rate = 13.01 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.14° N X 0° E/W
S-ARC North = 28.34
S-ARC South = 23.17

Quality Coring: None.

Comments:

Secondary Pile # 266
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
01/29/93	2	DHD130A	90.5	6.16		14.69		01/30/93		32	21.1	51.4%

Total Drill Time = 6.16 Hours
Average Penetration Rate = 14.69 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.25° S X 1° W
S-ARC North = 23.17
S-ARC South = 30.84

Quality Coring: None.

Comments:

Primary Pile # 267
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/19/93	2	DHD130A	90	8.50		10.59		05/18/93		24	21.0	14.2%

Total Drill Time = 8.50 Hours
Average Penetration Rate = 10.59 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.83° N X 2.09° W
S-ARC North = 30.84
S-ARC South = 23.94

Quality Coring: None.

Comments:

Secondary Pile # 268
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/06/93	2	DHD130A	93	6.00		15.50		04/07/93			29.5	21.7	35.8%

Total Drill Time = 6.00 Hours
Average Penetration Rate = 15.50 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0' N/S X 0' E/W
S-ARC North = 23.94
S-ARC South = 26.73

Quality Coring: None.

Comments:

Primary Pile # 269
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/11/93	2	DHD130A	90	6.92		13.01		05/11/93			24	21.0	14.2%

Total Drill Time = 6.92 Hours
Average Penetration Rate = 13.01 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0' N/S X 1" E
S-ARC North = 26.73
S-ARC South = 26.76

Quality Coring: None.

Comments:

Secondary Pile # 270
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
02/04/93	2	DHD130A	44	2.33		18.88		02/05/93		13		10.3	26.5%
04/15/93	1	DHD130A	93	4.91	44	9.98	2.00	04/16/93			30	21.7	38.1%

Total Drill Time = 7.24 Hours
 Average Penetration Rate = 12.85 Feet / Hour
 Total Redrill Time = 2.00 Hours
 Average Penetration Rate = 22.00 Feet / Hour

Verticality Information
 At Full Depth = 0° N/S X 1.5° E
 S--ARC North = 26.76
 S--ARC South = 28.55

Quality Coring: None.

Comments:

Primary Pile # 271
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
05/14/93	2	DHD130A	90	8.58		10.49		05/15/93			24	21.0	14.2%

Total Drill Time = 8.58 Hours
 Average Penetration Rate = 10.49 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate =

Verticality Information
 At Full Depth = 1.31° N X 2.22° E
 S--ARC North = 28.55
 S--ARC South = 23.70

Quality Coring: None.

Comments:

Secondary Pile # 272
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Redrill (FT / HR)	Penetration Rate Drill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/09/93	1	DHD130A	93	7.00			13.29	04/09/93			34	21.7	56.6%

Total Drill Time = 7.00 Hours
Average Penetration Rate = 13.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .76" S X 2" E
S--ARC North = 23.70
S--ARC South = 25.27

Quality Coring: None.

Comments:

Primary Pile # 273
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Redrill (FT / HR)	Penetration Rate Drill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/24/93	2	DHD130A	90	8.67			10.38	05/25/93			24.5	21.0	16.6%

Total Drill Time = 8.67 Hours
Average Penetration Rate = 10.38 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.77" S X 1" E
S--ARC North = 25.27
S--ARC South = 31.89

Quality Coring: None.

Comments:

Secondary Pile # 274
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (HRS)	Redrill (HRS)	Pure Drill Time (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Penetration Rate (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/19/93	1	XL-24	93	3.92		3.92		23.72		23.72	04/20/93			32	21.7	47.3%

Total Drill Time = 3.92 Hours
Average Penetration Rate = 23.72 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.25" N X 1.5" W
S-ARC North = 31.89
S-ARC South = 22.14

Quality Coring: None.

Comments:

Primary Pile # 275
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (HRS)	Redrill (HRS)	Pure Drill Time (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Penetration Rate (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/21/93	2	DHD130A	90	8.16		8.16		11.03		11.03	05/21/93			25	21.0	19.0%

Total Drill Time = 8.16 Hours
Average Penetration Rate = 11.03 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .76" S X 1" W
S-ARC North = 22.14
S-ARC South = 27.75

Quality Coring: None.

Comments:

Secondary Pile # 276
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/28/93	2	DHD130A	90	5.58			16.13		05/28/93			24.5	21.0	16.6%

Total Drill Time = 5.58 Hours
Average Penetration Rate = 16.13 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 5° E
S-ARC North = 27.75
S-ARC South = 30.91

Quality Coring: None.

Comments:

Primary Pile # 277
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/23/93	1	DHD130A	93	8.33			11.16		04/23/93			33	21.7	52.0%

Total Drill Time = 8.33 Hours
Average Penetration Rate = 11.16 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.5° N X 3.5° W
S-ARC North = 30.91
S-ARC South = 17.62

Quality Coring: None.

Comments:

Secondary Pile # 278
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/04/93	1	DHD130A	90	6.08		14.80		06/04/93			26.5	21.0	26.1%

Total Drill Time = 6.08 Hours
Average Penetration Rate = 14.80 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2' S X 2.5' W
S-ARC North = 17.62
S-ARC South = 28.69

Quality Coring: None.

Comments:

Primary Pile # 279
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/01/93	2	DHD130A	90	7.75		11.61		07/01/93			26	21.0	23.7%

Total Drill Time = 7.75 Hours
Average Penetration Rate = 11.61 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .25' S X 1.5' E
S-ARC North = 28.69
S-ARC South = 24.09

Quality Coring: None.

Comments:

Secondary Pile # 280
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/04/93	2	DHD130A	34		1.75		19.43		02/05/93		8		7.9	0.8%
06/15/93	1	DHD130A	91	34	4.41	1.42	12.93	23.94	06/15/93			32	21.3	50.6%

Total Drill Time = 6.16 Hours
 Average Penetration Rate = 14.77 Feet / Hour
 Total Redrill Time = 1.42 Hours
 Average Penetration Rate = 23.94 Feet / Hour

Verticality Information
 At Full Depth = 1.88" S X 1.6" W
 S-ARC North = 24.09
 S-ARC South = 29.12

Quality Coring: None.

Comments:

Primary Pile # 281
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/05/93	2	DHD130A	90		6.08		14.80		07/06/93			24	21.0	14.2%

Total Drill Time = 6.08 Hours
 Average Penetration Rate = 14.80 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 0" N S X 1" E
 S-ARC North = 29.12
 S-ARC South = 27.28

Quality Coring: None.

Comments:

Secondary Pile # 282
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)					
06/05/93	1	DHD130A	90	5.50		16.36		06/05/93		32	21.0	52.3%

Total Drill Time = 5.50 Hours
Average Penetration Rate = 16.36 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = .5" N X 1.5" W
S-ARC North = 27.28
S-ARC South = 27.90

Quality Coring: None.

Comments:

Primary Pile # 283
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)					
07/21/93	2	DHD130A	90	4.83		18.63		07/22/93		23	21.0	9.4%

Total Drill Time = 4.83 Hours
Average Penetration Rate = 18.63 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 1.5" N X 1.5" E
S-ARC North = 27.90
S-ARC South = 25.30

Quality Coring: None.

Comments:

Secondary Pile # 284
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION												
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Redrill (FT)	Penetration Rate		Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)		Drill (FT/HR)	Redrill (FT/HR)							
01/28/93	2	DHD130A	63		2.70			23.33			01/29/93		21.5		14.7	46.1%
06/23/93	1	DHD130A	90	63	2.43	2.92		11.11	21.58		06/23/93			26	21.0	23.7%

Total Drill Time = 5.13 Hours
 Average Penetration Rate = 17.54 Feet / Hour
 Total Redrill Time = 2.92 Hours
 Average Penetration Rate = 21.58 Feet / Hour

Verticality Information
 At Full Depth = 5° N X 1° E
 S-ARC North = 25.30
 S-ARC South = 29.42

Quality Coring: None.

Comments:

Primary Pile # 285
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION												
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Redrill (FT)	Penetration Rate		Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)		Drill (FT/HR)	Redrill (FT/HR)							
07/05/93	2	DHD130A	90		5.33			16.89			07/06/93			24	21.0	14.2%

Total Drill Time = 5.33 Hours
 Average Penetration Rate = 16.89 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 2.5° N X .5° W
 S-ARC North = 29.42
 S-ARC South = 24.13

Quality Coring: None.

Comments:

Secondary Pile # 286
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/10/93	1	DHD130A	90	6.58		13.68		06/10/93			32.5	21.0	54.6%

Total Drill Time = 6.58 Hours
Average Penetration Rate = 13.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .76" N X 1.75" W
S-ARC North = 24.13
S-ARC South = 27.11

Quality Coring: None.

Comments:

Primary Pile # 287
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/01/93	2	DHD130A	90	5.00		18.00		07/01/93			23	21.0	9.4%

Total Drill Time = 5.00 Hours
Average Penetration Rate = 18.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" N X 1.25" W
S-ARC North = 27.11
S-ARC South = 22.96

Quality Coring: None.

Comments:

Secondary Pile # 288
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/14/93	1	DHD130A	90	6.08			14.80		06/14/93			31.5	21.0	49.9%

Total Drill Time = 6.08 Hours
Average Penetration Rate = 14.80 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5" S X 1.75" W
S-ARC North = 22.96
S-ARC South = 30.73

Quality Coring: None.

Comments:

Primary Pile # 289
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/22/93	2	DHD130A	90	5.09			17.68		07/22/93			24	21.0	14.2%

Total Drill Time = 5.09 Hours
Average Penetration Rate = 17.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5" N X 0" E/W
S-ARC North = 30.73
S-ARC South = 27.37

Quality Coring: None.

Comments:

Secondary Pile # 290
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
02/03/93	2	DHD130A	41		2.58		15.89		02/03/93		13		9.6	35.8%
06/18/93	1	DHD130A	90	41	4.21	1.46	11.64	28.08	06/19/93			28	21.0	33.2%

Total Drill Time = 6.79 Hours
Average Penetration Rate = 13.25 Feet / Hour

Total Redrill Time = 1.46 Hours
Average Penetration Rate = 28.08 Feet / Hour

Verticality Information
At Full Depth = 2' N X 1.77' W
S-ARC North = 27.37
S-ARC South = 23.68

Quality Coring: None.

Comments:

Primary Pile # 291
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
07/23/93	2	DHD130A	90		4.92		18.29		07/23/94			24.5	21.0	16.6%

Total Drill Time = 4.92 Hours
Average Penetration Rate = 18.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0' N/S X 0' E/W
S-ARC North = 23.68
S-ARC South = 26.61

Quality Coring: None.

Comments:

Secondary Pile # 292
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/16/93	1	DHD130A	90	6.90		13.04			06/16/93			32	21.0	52.3%

Total Drill Time = 6.90 Hours
Average Penetration Rate = 13.04 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 2.28° W
S--ARC North = 26.61
S--ARC South = 28.73

Quality Coring: None.

Comments:

Primary Pile # 293
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/26/93	2	DHD130A	90	5.16		17.44			07/26/93			24	21.0	14.2%

Total Drill Time = 5.16 Hours
Average Penetration Rate = 17.44 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5° N X .5° W
S--ARC North = 28.73
S--ARC South = 26.06

Quality Coring: None.

Comments:

Secondary Pile # 294
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
06/12/93	1	DHD130A	90		5.84		06/12/93			30.5	21.0	45.1%

Total Drill Time = 5.84 Hours
Average Penetration Rate = 15.41 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" N X 0" E/W
S-ARC North = 26.06
S-ARC South = 26.41

Quality Coring: None.

Comments: Connected with pile 258

Primary Pile # 295
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
07/27/93	2	DHD130A	90		5.67		07/28/93			24	21.0	14.2%

Total Drill Time = 5.67 Hours
Average Penetration Rate = 15.87 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .76" N X .25" W
S-ARC North = 26.41
S-ARC South = 25.55

Quality Coring: None.

Comments:

Secondary Pile # 296
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/08/93	1	DHD130A	59	2.40		24.58	04/08/93		19	32	13.8	37.9%
04/15/93	1	DHD130A	93	2.83	2.00	12.01	04/15/93				21.7	47.3%

Total Drill Time = 5.23 Hours
Average Penetration Rate = 17.78 Feet / Hour

Total Redrill Time = 2.00 Hours
Average Penetration Rate = 29.50 Feet / Hour

Vertically Information
At Full Depth = 0° N/S X 2.25° W
S-ARC North = 25.55
S-ARC South = 26.69

Quality Coring: None.

Comments:

Primary Pile # 297
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/23/94	2	DHD130A	90	4.75		18.95	07/23/94			28	21.0	23.7%

Total Drill Time = 4.75 Hours
Average Penetration Rate = 18.95 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0° N/S X .76° W
S-ARC North = 26.69
S-ARC South = 28.69

Quality Coring: None.

Comments:

Secondary Pile # 298
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)											
02/04/93	2	DHD130A	40	40	3.08	40	12.99	21.05	02/05/93		15		9.3	60.6%					
06/04/93	2	DHD130A	49	49	0.63	49	14.29	21.05	06/04/93		18		11.4	57.3%					
06/29/93	2	DHD130A	90	49	3.16	49	12.97	22.58	06/30/93		29		21.0	38.0%					

Total Drill Time = 6.87 Hours
Average Penetration Rate = 13.10 Feet / Hour

Total Redrill Time = 4.07 Hours
Average Penetration Rate = 21.87 Feet / Hour

Verticality Information
At Full Depth = 1.5" N X 1.5" E
S--ARC North = 28.69
S--ARC South = 24.53

Quality Coring: 6" Joint core 30.1' deep on 9/27/93

Comments:

Primary Pile # 299
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)											
07/26/93	2	DHD130A	90	90	5.50	90	16.36		07/26/93			24	21.0	14.2%					

Total Drill Time = 5.50 Hours
Average Penetration Rate = 16.36 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0" N/S X .76" E
S--ARC North = 24.53
S--ARC South = 28.06

Quality Coring: None.

Comments:

Secondary Pile # 300
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
01/22/93	2	DHD130A	35	3.16	0	11.08	11.08	0.00	01/28/93	LEFT	OPEN	7	8.2	-0.1%
01/28/93	2	DHD130A	30	1.00	35	22.00	22.00	1.67	06/19/93			24	7.0	80.3%
06/18/93	1	DHD130A	57	5.83	57	14.24	14.24	3.50	06/28/93			41	13.3	25.4%
06/26/93	1	DHD130A	140										32.7	

Total Drill Time = 9.99 Hours
 Average Penetration Rate = 17.02 Feet / Hour
 Total Redrill Time = 6.17 Hours
 Average Penetration Rate = 14.91 Feet / Hour

Verticality Information
 At Full Depth = 1.5" N X .75" W
 S-ARC North = 27.51
 S-ARC South = 22.94

Quality Coring: None.

Comments:

Primary Pile # 301
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/24/93	2	DHD130A	140	7.33		19.10	19.10		07/24/93			37.5	32.7	14.7%

Total Drill Time = 7.33 Hours
 Average Penetration Rate = 19.10 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 1" S X .5" E
 S-ARC North = 22.94
 S-ARC South = 30.97

Quality Coring: None.

Comments:

Secondary Pile # 302
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/07/93	1	DHD130A	141		9.66		14.60		06/07/93			43	32.9	30.6%

Total Drill Time = 9.66 Hours
Average Penetration Rate = 14.60 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 2.27" N X 2.77" E
S--ARC North = 30.97
S--ARC South = 25.67

Quality Coring: NX/NQ to 144.1' deep on 8/18/93

Comments:

Primary Pile # 303
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/27/93	2	DHD130A	140		9.34		14.99		07/28/93			37.5	32.7	14.7%

Total Drill Time = 9.34 Hours
Average Penetration Rate = 14.99 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 1.5" N X 2.77" E
S--ARC North = 25.67
S--ARC South = 24.33

Quality Coring: None.

Comments:

Secondary Pile # 304
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/07/93	2	DHD130A	140	9.50			14.74	07/08/93			42.5	32.7	30.0%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 14.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 24.33
S-ARC South = 25.67

Quality Coring: None.

Comments:

Primary Pile # 305
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/31/93	2	DHD130A	140	9.50			14.74	08/02/93			38	32.7	16.2%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 14.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = .76° S X 0° E/W
S-ARC North = 25.67
S-ARC South = 24.61

Quality Coring: None.

Comments:

Secondary Pile # 306
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/09/93	2	DHD130A	140	9.83		14.24		07/09/93			51.5	32.7	57.5%

Total Drill Time = 9.83 Hours
Average Penetration Rate = 14.24 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5° S X 5.92° W
S--ARC North = 24.61
S--ARC South = 29.74

Quality Coring: None.

Comments:

Primary Pile # 307
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/29/93	2	DHD130A	140	12.08		11.59		07/29/93			37	32.7	13.2%

Total Drill Time = 12.08 Hours
Average Penetration Rate = 11.59 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1° N X 2° W
S--ARC North = 29.74
S--ARC South = 23.36

Quality Coring: None.

Comments:

Secondary Pile # 308
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/12/93	2	DHD130A	140	9.08			15.42		07/12/93			47.5	32.7	45.3%

Total Drill Time = 9.08 Hours
Average Penetration Rate = 15.42 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.25" S X 1" W
S--ARC North = 23.36
S--ARC South = 31.04

Quality Coring: None.

Comments:

Primary Pile # 309
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/02/93	2	DHD130A	140	7.92			17.68		08/03/93			38.5	32.7	17.8%

Total Drill Time = 7.92 Hours
Average Penetration Rate = 17.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2" N X .5" E
S--ARC North = 31.04
S--ARC South = 21.21

Quality Coring: None.

Comments:

Secondary Pile # 310
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/03/93	2	DHD130A	34		1.75		19.43	19.43	02/04/93		8		7.9	0.8%
07/14/93	2	DHD130A	140	34	8.58	34	12.35	1.75	07/14/93			44	32.7	34.6%

Total Drill Time = 10.33 Hours
 Average Penetration Rate = 13.55 Feet / Hour
 Total Redrill Time = 1.75 Hours
 Average Penetration Rate = 19.43 Feet / Hour

Verticality Information
 At Full Depth = 1.5° S X 2.5° E
 S-ARC North = 21.21
 S-ARC South = 30.73

Quality Coring: None.

Comments:

Primary Pile # 311
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/03/93	2	DHD130A	140		8.84		15.84	15.84	08/04/93			38	32.7	16.2%

Total Drill Time = 8.84 Hours
 Average Penetration Rate = 15.84 Feet / Hour
 Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 2° N X 2.25° W
 S-ARC North = 30.73
 S-ARC South = 27.41

Quality Coring: None.

Comments:

Secondary Pile # 312
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/27/93	2	DHD130A	52		3.00		17.33		01/28/93		17		12.1	40.0%
07/19/93	2	DHD130A	140	52	6.25	2.83	14.08	18.37	07/20/93			40	32.7	22.4%

Total Drill Time = 9.25 Hours
 Average Penetration Rate = 15.14 Feet / Hour
 Total Redrill Time = 2.83 Hours
 Average Penetration Rate = 18.37 Feet / Hour

Verticality Information
 At Full Depth = 3.09° N X 3.09° E
 S-ARC North = 27.41
 S-ARC South = 25.82

Quality Coring: None.

Comments:

Primary Pile # 313
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/05/93	2	DHD130A	140		9.00		15.56		08/05/93			38.5	32.7	17.8%

Total Drill Time = 9.00 Hours
 Average Penetration Rate = 15.56 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate =

Verticality Information
 At Full Depth = 2.5° N X 1° E
 S-ARC North = 25.82
 S-ARC South = 24.56

Quality Coring: None.

Comments:

Secondary Pile # 314
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/15/93	2	DHD130A	140	12.09			11.58	07/16/93			50	32.7	52.9%

Total Drill Time = 12.09 Hours
Average Penetration Rate = 11.58 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" N X 6.18" E
S-ARC North = 24.56
S-ARC South = 25.20

Quality Coring: None.

Comments:

Primary Pile # 315
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/09/93	2	DHD130A	140	9.50			14.74	08/09/93			39	32.7	19.3%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 14.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" N X 1" W
S-ARC North = 25.20
S-ARC South = 27.05

Quality Coring: None.

Comments:

Secondary Pile # 316
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/21/93	2	DHD130A	140	8.42		16.63		07/21/93			41	32.7	25.4%

Total Drill Time = 8.42 Hours
Average Penetration Rate = 16.63 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.75" N X .5" E
S--ARC North = 27.05
S--ARC South = 31.56

Quality Coring: None.

Comments:

Primary Pile # 317
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/07/93	2	DHD130A	140	7.66		18.28		08/07/93			39.5	32.7	20.6%

Total Drill Time = 7.66 Hours
Average Penetration Rate = 18.28 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 5.5" N X 3" E
S--ARC North = 31.56
S--ARC South = 20.46

Quality Coring: None.

Comments:

Secondary Pile # 318
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)					
07/05/93	2	DHD130A	140		12.42		11.27		07/05/93		54	32.7	65.2%

Total Drill Time = 12.42 Hours
Average Penetration Rate = 11.27 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.58" N X 1.05" E
S-ARC North = 20.46
S-ARC South = 24.45

Quality Coring: None.

Comments:

Primary Pile # 319
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)					
08/09/93	2	DHD130A	140		8.48		16.51		08/09/93		38	32.7	16.2%

Total Drill Time = 8.48 Hours
Average Penetration Rate = 16.51 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0" N/S X 1.5" E
S-ARC North = 24.45
S-ARC South = 27.99

Quality Coring: None.

Comments:

Secondary Pile # 320
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/14/93	1	DHD130A	140	9.58		14.61		06/15/93		49		32.7	49.9%
06/23/93	1	DHD130A	140	9.58	140	9.58	14.61	06/23/93			39	32.7	19.3%

Total Drill Time = 9.58 Hours
Average Penetration Rate = 14.61 Feet / Hour

Total Redrill Time = 9.58 Hours
Average Penetration Rate = 14.61 Feet / Hour

Verticality Information
At Full Depth = 1" N X .75" W
S-ARC North = 27.99
S-ARC South = 26.66

Quality Coring: None.

Comments: PLATFORM COLLAPSE HELD 14 CU. YD. OF CONCRETE. COLLAPSE WAS UNDER THE MAT. AIRLIFTED PILE.

Primary Pile # 321
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/10/93	2	DHD130A	140	9.58		14.61		08/10/93			39	32.7	19.3%

Total Drill Time = 9.58 Hours
Average Penetration Rate = 14.61 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" N X 1" E
S-ARC North = 26.68
S-ARC South = 27.47

Quality Coring: None.

Comments:

Secondary Pile # 322
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
01/27/93	2	DHD130A	35	2.58	35	13.57	31.53	01/27/93		8	41.5	8.2	-2.1%
06/04/93	1	DHD130A	40	0.33	40	15.15	23.95	06/04/93		14		9.3	49.9%
06/17/93	1	DHD130A	140	7.67	40	13.04		06/18/93				32.7	26.9%

Total Drill Time = 10.58 Hours
Average Penetration Rate = 13.23 Feet / Hour

Total Redrill Time = 2.78 Hours
Average Penetration Rate = 26.98 Feet / Hour

Verticality Information
At Full Depth = 1.5" N X 1" E
S--ARC North = 27.47
S--ARC South = 26.00

Quality Coring: None.

Comments:

Primary Pile # 323
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
08/11/93	2	DHD130A	140	9.09		15.40		08/12/93			38	32.7	16.2%

Total Drill Time = 9.09 Hours
Average Penetration Rate = 15.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" N X 0" EW
S--ARC North = 26.00
S--ARC South = 27.72

Quality Coring: None.

Comments:

Secondary Pile # 324
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/07/93	1	DHD130A	140	9.58			14.61			06/08/94			48	32.7	46.8%

Total Drill Time = 9.58 Hours
Average Penetration Rate = 14.61 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.7" N X .85" W
S-ARC North = 27.72
S-ARC South = 26.66

Quality Coring: None.

Comments: Water flow eroded hole at 25' causing a cavity after drilling.

Primary Pile # 325
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/13/93	2	DHD130A	140	9.57			14.63			08/13/93			37.5	32.7	14.7%

Total Drill Time = 9.57 Hours
Average Penetration Rate = 14.63 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.75" N X 1.5" E
S-ARC North = 26.66
S-ARC South = 24.96

Quality Coring: None.

Comments:

Secondary Pile # 326
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/11/93	1	DHD130A	140		11.49		12.18		06/12/93			54.5	32.7	66.7%

Total Drill Time = 11.49 Hours
Average Penetration Rate = 12.18 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .58° N X 3.21° E
S-ARC North = 24.98
S-ARC South = 25.63

Quality Coring: None.

Comments:

Primary Pile # 327
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/23/93	2	DHD130A	140		10.41		13.45		07/23/93			39	32.7	19.3%

Total Drill Time = 10.41 Hours
Average Penetration Rate = 13.45 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 25.63
S-ARC South = 23.63

Quality Coring: None.

Comments:

Secondary Pile # 328
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
02/03/93	2	DHD130A	34		0.75		02/04/93		8		7.9	0.8%
06/21/93	1	DHD130A	140	34	8.08	1.50	06/21/93			48.5	32.7	48.4%

Total Drill Time = 8.83 Hours
 Average Penetration Rate = 15.86 Feet / Hour
 Total Redrill Time = 1.50 Hours
 Average Penetration Rate = 22.67 Feet / Hour

Verticality Information
 At Full Depth = 2.07° S X 1.56° E
 S-ARC North = 23.63
 S-ARC South = 25.32

Quality Coring: None.
 Comments:

Primary Pile # 329
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
08/19/93	2	DHD130A	140		7.67		08/20/93			36	32.7	10.1%

Total Drill Time = 7.67 Hours
 Average Penetration Rate = 18.25 Feet / Hour
 Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 3° S X 0° E/W
 S-ARC North = 25.32
 S-ARC South = 30.42

Quality Coring: None.
 Comments:

Secondary Pile # 330
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
06/28/93	1	DHD130A	141				06/28/93			45	32.9	36.7%

Total Drill Time =
Average Penetration Rate =

Total Redrill Time =
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 3.5° W
S-ARC North = 26.69
S-ARC South = 27.77

Quality Coring: None.

Comments:

Primary Pile # 331
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
08/21/93	2	DHD130A	140		7.34	19.07	08/23/93			39	32.7	19.3%

Total Drill Time = 7.34 Hours
Average Penetration Rate = 19.07 Feet / Hour

Total Redrill Time =
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 2° W
S-ARC North = 27.77
S-ARC South = 25.67

Quality Coring: None.

Comments:

Secondary Pile # 332
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/01/93	1	DHD130A	140	10.83		12.93			07/01/93			47	32.7	43.8%

Total Drill Time = 10.83 Hours
Average Penetration Rate = 12.93 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information
At Full Depth = .75° N X .75° W
S--ARC North = 25.67
S--ARC South = 33.28

Quality Coring: None.

Comments:

Primary Pile # 333
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/28/93	2	DHD130A	140	10.08		13.89			07/28/93			39	32.7	19.3%

Total Drill Time = 10.08 Hours
Average Penetration Rate = 13.89 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X .76° W
S--ARC North = 33.28
S--ARC South = 25.97

Quality Coring: None.

Comments:

Secondary Pile # 334
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/06/93	2	DHD130A	140	11.17		12.53			07/06/93			42.5	32.7	30.0%

Total Drill Time = 11.17 Hours
Average Penetration Rate = 12.53 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 5' N X 0" E/W
S--ARC North = 25.97
S--ARC South = 25.23

Quality Coring: None.

Comments:

Primary Pile # 335
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/31/93	2	DHD130A	140	8.17		17.14			08/02/93			40	32.7	22.4%

Total Drill Time = 8.17 Hours
Average Penetration Rate = 17.14 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 4.5' N X 1.51" E
S--ARC North = 25.23
S--ARC South = 20.50

Quality Coring: None.

Comments:

Secondary Pile # 336
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
01/21/93	2	DHD130A	53		8.91						12.4	
06/16/93	1	DHD130A	140	53	10.00	0.50	06/17/93		56		32.7	71.3%
07/19/93	2	DHD130A	140	140		6.83	07/19/93	SUMP	40		32.7	22.4%

Total Drill Time = 18.91 Hours
Average Penetration Rate = 7.40 Feet / Hour

Total Redrill Time = 7.33 Hours
Average Penetration Rate = 26.33 Feet / Hour

Verticality Information
At Full Depth = 3.75" N X 5.38" E
S-ARC North = 20.50
S-ARC South = 25.94

Quality Coring: None.
Comments: Used hole as a sump

Primary Pile # 337
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
07/29/93	2	DHD130A	140		7.50		07/29/93			37.5	32.7	14.7%

Total Drill Time = 7.50 Hours
Average Penetration Rate = 18.67 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0" N/S X 1.75" E
S-ARC North = 25.94
S-ARC South = 26.02

Quality Coring: None.

Comments:

Secondary Pile # 338
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
07/08/93	2	DHD130A	140		17.25		8.12		07/09/93			53	32.7	62.1%

Total Drill Time = 17.25 Hours
Average Penetration Rate = 8.12 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .5" S X 0" E/W
S-ARC North = 26.02
S-ARC South = 28.13

Quality Coring: None.

Comments:

Primary Pile # 339
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
07/30/93	2	DHD130A	140		8.11		17.26		07/30/93			37	32.7	13.2%

Total Drill Time = 8.11 Hours
Average Penetration Rate = 17.26 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" S X 1" W
S-ARC North = 28.13
S-ARC South = 31.44

Quality Coring: None.

Comments:

Secondary Pile # 340
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION							
Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/10/93	2	DHD130A	140			9.76		07/12/94			48	32.7	46.8%

Total Drill Time = 14.34 Hours
Average Penetration Rate = 9.76 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S--ARC North = 28.13
S--ARC South = 31.44

Quality Coring: None.

Comments:

Primary Pile # 341
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION							
Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/03/93	2	DHD130A	140			14.86		08/03/93			38	32.7	16.2%

Total Drill Time = 9.42 Hours
Average Penetration Rate = 14.86 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.5° N X 0° E/W
S--ARC North = 31.44
S--ARC South = 23.26

Quality Coring: None.

Comments:

Secondary Pile # 342
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
07/13/93	2	DHD130A	140		9.08		15.42			43	32.7	31.5%

Total Drill Time = 9.08 Hours
Average Penetration Rate = 15.42 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.25° N X 2° E
S-ARC North = 23.26
S-ARC South = 28.83

Quality Coring: None.

Comments:

Primary Pile # 343
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
08/04/93	2	DHD130A	140		10.34		13.54			38	32.7	16.2%

Total Drill Time = 10.34 Hours
Average Penetration Rate = 13.54 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.77° N X 1.5° E
S-ARC North = 28.83
S-ARC South = 25.81

Quality Coring: None.

Comments:

Secondary Pile # 344
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
06/23/93	1	DHD130A	46		2.00		23.00		06/24/93		17.5	37.5	10.7	62.9%
07/16/93	2	DHD130A	140	46	7.50	2.67	12.53	17.23	07/16/93				32.7	14.7%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 14.74 Feet / Hour

Total Redrill Time = 2.67 Hours
Average Penetration Rate = 17.23 Feet / Hour

Verticality Information
At Full Depth = 2.15" N X 0" EW
S-ARC North = 25.81
S-ARC South = 25.08

Quality Coring: None.
Comments:

Primary Pile # 345
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
08/06/93	2	DHD130A	140		8.25		16.97		08/06/93			41	32.7	25.4%

Total Drill Time = 8.25 Hours
Average Penetration Rate = 16.97 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" N X 1" W
S-ARC North = 25.08
S-ARC South = 20.42

Quality Coring: None.
Comments:

Secondary Pile # 346
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/08/93	1	DHD130A	90		9.00		10.00			06/09/93		38		21.0	80.8%
06/25/93	1	DHD130A	120		1.92	90	15.63	3.08	29.22	06/28/93		32		28.0	14.2%
07/26/93	2	DHD130A	140	120	1.50		13.33	8.49	14.13	07/27/93			38	32.7	16.2%

Total Drill Time = 12.42 Hours
 Average Penetration Rate = 11.27 Feet / Hour
 Total Redrill Time = 11.57 Hours
 Average Penetration Rate = 18.15 Feet / Hour

Verticality Information
 At Full Depth = 3° S X 0° E/W
 S--ARC North = 20.42
 S--ARC South = 30.52

Quality Coring: None.

Comments: PILE CAVED IN ON 6/9/93 AND 6/25/93.

Primary Pile # 347
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/07/93	2	DHD130A	140		8.16		17.16			08/07/93			40	32.7	22.4%

Total Drill Time = 8.16 Hours
 Average Penetration Rate = 17.16 Feet / Hour

Total Redrill Time = None

Verticality Information
 At Full Depth = 0° N/S X 3° W
 S--ARC North = 30.52
 S--ARC South = 25.86

Quality Coring: None.

Comments:

Secondary Pile # 348
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Penetration Rate Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/21/93	1	DHD130A	140	140	12.42	140	11.27	6.33	06/22/93		48	40	32.7	46.8%
07/28/93	1	DHD130A	140	140					07/29/93				32.7	22.4%

Total Drill Time = 12.42 Hours
Average Penetration Rate = 11.27 Feet / Hour

Total Redrill Time = 6.33 Hours
Average Penetration Rate = 22.12 Feet / Hour

Verticality Information
At Full Depth = .5" S X .5" W
S-ARC North = 25.86
S-ARC South = 28.77

Quality Coring: None.

Comments: PLATFORM COLAPSE AND PILE CAVE IN.

Primary Pile # 349
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Penetration Rate Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/10/93	2	DHD130A	140	140	9.92	140	14.11		08/10/93			38.5	32.7	17.8%

Total Drill Time = 9.92 Hours
Average Penetration Rate = 14.11 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" N X 1" E
S-ARC North = 28.77
S-ARC South = 27.78

Quality Coring: None.

Comments:

Secondary Pile # 350
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)					
07/24/93	2	DHD130A	140		10.09		07/26/93		57	32.7	74.4%

Total Drill Time = 10.09 Hours
Average Penetration Rate = 13.88 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.75" N X 0" E/W
S-ARC North = 27.78
S-ARC South = 27.80

Quality Coring: None.

Comments:

Primary Pile # 351
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)					
08/11/93	2	DHD130A	140		8.25		08/11/93		38.5	32.7	17.8%

Total Drill Time = 8.25 Hours
Average Penetration Rate = 16.97 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.5" N X .75" E
S-ARC North = 27.80
S-ARC South = 28.04

Quality Coring: None.

Comments:

Secondary Pile # 352
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)					
07/22/93	2	DHD130A	140		10.92		12.82		07/23/93		75	32.7	129.4%

Total Drill Time = 10.92 Hours
Average Penetration Rate = 12.82 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.5" N X 2.75" E
S-ARC North = 28.04
S-ARC South = 22.76

Quality Coring: None.

Comments: Hit a cavity 23-24' deep. Hole collapsed and had to be cleaned out.

Primary Pile # 353
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)					
08/12/93	2	DHD130A	140		11.15		12.56		08/13/93		37	32.7	13.2%

Total Drill Time = 11.15 Hours
Average Penetration Rate = 12.56 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" N X 0" E/W
S-ARC North = 22.76
S-ARC South = 23.75

Quality Coring: None.

Comments:

Secondary Pile # 354
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/21/93	2	DHD130A	140	10.09		13.88		07/21/93			47	32.7	43.8%

Total Drill Time = 10.09 Hours
Average Penetration Rate = 13.88 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" S X 1" E
S-ARC North = 23.75
S-ARC South = 28.16

Quality Coring: None.

Comments:

Primary Pile # 355
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/16/93	2	DHD130A	140	9.50		14.74		08/17/93			39	32.7	19.3%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 14.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0" N/S X 1" E
S-ARC North = 28.16
S-ARC South = 26.73

Quality Coring: None.

Comments:

Secondary Pile # 356
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
01/29/93	2	DHD130A	47	3.75		12.53		02/01/93		16		11.0	45.8%
07/20/93	2	DHD130A	140	11.84	47	7.85	2.17	07/20/93			40	32.7	22.4%

Total Drill Time = 15.59 Hours
 Average Penetration Rate = 8.98 Feet / Hour
 Total Redrill Time = 2.17 Hours
 Average Penetration Rate = 21.66 Feet / Hour

Verticality Information
 At Full Depth = 0° N/S X 0° EW
 S-ARC North = 26.73
 S-ARC South = 22.17

Quality Coring: Cavity

Comments:

Primary Pile # 357
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/18/93	2	DHD130A	140	8.83		15.86		08/19/93			37	32.7	13.2%

Total Drill Time = 8.83 Hours
 Average Penetration Rate = 15.86 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 3° S X 5° E
 S-ARC North = 22.17
 S-ARC South = 30.79

Quality Coring: None.

Comments:

Secondary Pile # 358
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/14/93	2	DHD130A	140	10.50		13.33		07/14/93			52	32.7	59.1%

Total Drill Time = 10.50 Hours
Average Penetration Rate = 13.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 30.79
S-ARC South = 26.76

Quality Coring: None.

Comments:

Primary Pile # 359
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/21/93	2	DHD130A	140	7.67		18.25		08/22/93			37	32.7	13.2%

Total Drill Time = 7.67 Hours
Average Penetration Rate = 18.25 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 26.76
S-ARC South = 29.47

Quality Coring: None.

Comments:

Secondary Pile # 360
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/01/93	1	DHD130A	29	1.50		19.33		03/01/93		7		6.8	3.4%
03/11/93	1	DHD130A	51	1.66	1.00	13.25	29.00	03/11/93		22		11.9	84.7%
04/20/93	1	DHD130A	65	0.50	0.67	28.00	76.12	04/21/93		29		15.2	91.1%
07/17/93	2	DHD130A	140	7.58	2.83	9.89	22.97	07/19/93		38		32.7	16.2%

Total Drill Time = 11.24 Hours
 Average Penetration Rate = 12.46 Feet / Hour
 Total Redrill Time = 4.50 Hours
 Average Penetration Rate = 32.22 Feet / Hour

Verticality Information
 At Full Depth = 2.09° N X 2.09° E
 S-ARC North = 29.47
 S-ARC South = 27.56

Quality Coring: None.

Comments:

Primary Pile # 361
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/16/93	2	DHD130A	140	7.75		18.06		08/17/93			39.5	32.7	20.8%

Total Drill Time = 7.75 Hours
 Average Penetration Rate = 18.06 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 3° N X 2° W
 S-ARC North = 27.56
 S-ARC South = 25.30

Quality Coring: None.

Comments:

Secondary Pile # 362
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
07/01/93	1	DHD130A	140		7.92		07/01/93			43.5	32.7	33.1%

Total Drill Time = 7.92 Hours
Average Penetration Rate = 17.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.5" N X 3" E
S-ARC North = 25.30
S-ARC South = 22.92

Quality Coring: None.

Comments:

Primary Pile # 363
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
08/08/93	2	DHD130A	140		7.34		08/07/93			39	32.7	19.3%

Total Drill Time = 7.34 Hours
Average Penetration Rate = 19.07 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0" N/S X 1.5" E
S-ARC North = 22.92
S-ARC South = 27.28

Quality Coring: None.

Comments:

Secondary Pile # 364
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
03/02/93	1	DHD130A	45		45	2.50		18.00		03/03/93		10	40.5	10.5	-4.8%
07/07/93	2	DHD130A	140		45	10.75	2.17	8.94	20.74	07/07/93				32.7	23.9%

Total Drill Time = 13.25 Hours
Average Penetration Rate = 10.57 Feet / Hour

Total Redrill Time = 2.17 Hours
Average Penetration Rate = 20.74 Feet / Hour

Verticality Information
At Full Depth = .5" N X 1" W
S-ARC North = 27.28
S-ARC South = 28.16

Quality Coring: None.

Comments:

Primary Pile # 365
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
08/02/93	2	DHD130A	140			11.08		12.64		08/02/93			38	32.7	16.2%

Total Drill Time = 11.08 Hours
Average Penetration Rate = 12.64 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5" N X 1" W
S-ARC North = 28.16
S-ARC South = 24.53

Quality Coring: None.

Comments:

Secondary Pile # 366
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/25/93	1	DHD130A	141	11.75			12.00			06/26/93			66	32.9	100.4%

Total Drill Time = 11.75 Hours
Average Penetration Rate = 12.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 2° W
S-ARC North = 24.53
S-ARC South = 23.79

Quality Coring: None.

Comments: Hole collapsed and had to be cleaned out.

Primary Pile # 367
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/30/93	2	DHD130A	140	9.59			14.60			07/30/93			37	32.7	13.2%

Total Drill Time = 9.59 Hours
Average Penetration Rate = 14.60 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2° S X 2.27° W
S-ARC North = 23.79
S-ARC South = 27.65

Quality Coring: None.

Comments:

Secondary Pile # 368
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/15/93	1	DHD130A	92		6.75		13.63		06/15/93		36		21.5	67.6%
06/22/93	1	DHD130A	141	92	3.17	5.50	15.46	16.73	06/22/93			39	32.9	18.4%

Total Drill Time = 9.92 Hours
 Average Penetration Rate = 14.21 Feet / Hour
 Total Redrill Time = 5.50 Hours
 Average Penetration Rate = 16.73 Feet / Hour

Verticality Information
 At Full Depth = 1.25" S X 0" E/W
 S--ARC North = 27.65
 S--ARC South = 29.68

Quality Coring: 6' Joint core 29.9' deep on 10/28/93.

Comments:

Primary Pile # 369
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/04/93	2	DHD130A	140		8.50		16.47		08/04/93			38	32.7	16.2%

Total Drill Time = 8.50 Hours
 Average Penetration Rate = 16.47 Feet / Hour
 Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 1.09" N X 2.27" E
 S--ARC North = 29.68
 S--ARC South = 27.44

Quality Coring: See pile 368

Comments:

Secondary Pile # 370
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/01/93	1	DHD130A	31		1.83		16.94			03/01/93		9		7.2	24.3%
03/12/93	1	DHD130A	51	31	0.41	3.00	48.78		10.33	03/12/93		14		11.9	17.6%
06/17/93	1	DHD130A	140	51	8.75	3.16	10.17		16.14	06/17/93		41		32.7	25.4%

Total Drill Time = 10.99 Hours
Average Penetration Rate = 12.74 Feet / Hour
Total Redrill Time = 6.16 Hours
Average Penetration Rate = 13.31 Feet / Hour

Verticality Information
At Full Depth = 1.5" N X 3" E
S-ARC North = 27.44
S-ARC South = 29.74

Quality Coring: None.

Comments: Cavity observed 25-45'.

Primary Pile # 371
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Pig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/05/93	2	DHD130A	140		7.25		19.31			08/05/93			38	32.7	16.2%

Total Drill Time = 7.25 Hours
Average Penetration Rate = 19.31 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.78" N X 1.26" E
S-ARC North = 29.74
S-ARC South = 21.79

Quality Coring: None.

Comments:

Secondary Pile # 372
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/12/93	1	DHD130A	140		11.24		12.46		06/12/93			47	32.7	43.8%

Total Drill Time = 11.24 Hours
 Average Penetration Rate = 12.46 Feet / Hour
 Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = .5° N X .79° E
 S-ARC North = 21.79
 S-ARC South = 32.63

Quality Coring: None.

Comments:

Primary Pile # 373
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/09/93	2	DHD130A	140		8.75		16.00		08/09/93			38.5	32.7	17.8%

Total Drill Time = 8.75 Hours
 Average Penetration Rate = 16.00 Feet / Hour
 Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 5° N X 0° E/W
 S-ARC North = 32.63
 S-ARC South = 29.68

Quality Coring: None.

Comments:

Secondary Pile # 374
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/03/93	1	DHD130A	50		2.16		23.15						11.7	-100.0%
06/09/93	1	DHD130A	141	50	10.00	3.50	9.10	14.29	06/10/93	SUMP		61	32.9	85.3%

Total Drill Time = 12.16 Hours
 Average Penetration Rate = 11.60 Feet / Hour
 Total Redrill Time = 3.50 Hours
 Average Penetration Rate = 14.29 Feet / Hour

Verticality Information
 At Full Depth = 7.56° N X 4.08° W
 S-ARC North = 29.68
 S-ARC South = 22.34

Quality Coring: Used as a sump for 3 months.

Comments:

Primary Pile # 375
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/11/93	2	DHD130A	140		10.50		13.33		08/11/93			40	32.7	22.4%

Total Drill Time = 10.50 Hours
 Average Penetration Rate = 13.33 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 4.78° N X 1.5° W
 S-ARC North = 22.34
 S-ARC South = 18.43

Quality Coring: None.

Comments:

Secondary Pile # 376
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/24/93	1	DHD130A	141	9.58		14.72		06/24/93			32	32.9	-2.8%

Total Drill Time = 9.58 Hours
Average Penetration Rate = 14.72 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 6° W
S-ARC North = 18.43
S-ARC South = 28.79

Quality Coring: None.

Comments:

Primary Pile # 377
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/12/93	2	DHD130A	140	9.08		15.42		08/12/93			38	32.7	16.2%

Total Drill Time = 9.08 Hours
Average Penetration Rate = 15.42 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5° N X 5° W
S-ARC North = 28.79
S-ARC South = 20.47

Quality Coring: None.

Comments:

Secondary Pile # 378
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/10/93	1	DHD130A	65		4.00		16.25		03/10/93		24.5		15.2	61.4%
07/02/93	1	DHD130A	141	65	9.75	3.33	7.79	19.52	07/02/93			47	32.9	42.7%

Total Drill Time = 13.75 Hours
 Average Penetration Rate = 10.25 Feet / Hour
 Total Redrill Time = 3.33 Hours
 Average Penetration Rate = 19.52 Feet / Hour

Verticality Information
 At Full Depth = 2.5" S X 4.78"W
 S--ARC North = 20.47
 S--ARC South = 29.84

Quality Coring: None.

Comments:

Primary Pile # 379
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/17/93	2	DHD130A	140		9.42		14.86		08/17/93			39	32.7	19.3%

Total Drill Time = 9.42 Hours
 Average Penetration Rate = 14.86 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 0" N/S X 1.5" W
 S--ARC North = 29.84
 S--ARC South = 25.50

Quality Coring: None.

Comments:

Secondary Pile # 380
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/01/93	1	DHD130A	32	1.75		18.29		03/01/93		7		7.5	-6.3%
06/28/93	1	DHD130A	61	0.91	32	31.87	1.09	06/29/93		25.5		14.2	79.0%
07/07/93	1	DHD130A	140	10.50	61	7.52	4.25	07/08/93			47.5	32.7	45.3%

Total Drill Time = 13.16 Hours
Average Penetration Rate = 10.64 Feet / Hour

Total Redrill Time = 5.34 Hours
Average Penetration Rate = 17.42 Feet / Hour

Verticality Information
At Full Depth = .75° S X 1° E
S-ARC North = 25.50
S-ARC South = 31.67

Quality Coring: None.
Comments:

Primary Pile # 381
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/20/93	2	DHD130A	140	6.33		22.12		08/21/93			38	32.7	16.2%

Total Drill Time = 6.33 Hours
Average Penetration Rate = 22.12 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3° N X .5° W
S-ARC North = 31.67
S-ARC South = 22.87

Quality Coring: None.

Comments: Connected with pile-408

Secondary Pile # 382
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/30/93	1	DHD130A	61	1.75		34.86		06/30/93			24	14.2	68.5%
07/09/93	2	DHD130A	140	7.42	61	10.65	3.50	07/10/93			41	32.7	25.4%

Total Drill Time = 9.17 Hours
Average Penetration Rate = 15.27 Feet / Hour

Total Redrill Time = 3.50 Hours
Average Penetration Rate = 17.43 Feet / Hour

Verticality Information
At Full Depth = .5" N X 1.5" E
S-ARC North = 22.87
S-ARC South = 28.09

Quality Coring: None.

Comments:

Primary Pile # 383
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/23/93	2	DHD130A	140	9.80		14.29		08/24/93			35	32.7	7.1%

Total Drill Time = 9.80 Hours
Average Penetration Rate = 14.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5" N X 0" E/W
S-ARC North = 28.09
S-ARC South = 24.56

Quality Coring: None.

Comments:

Secondary Pile # 384
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/03/93	1	DHD130A	59	5.41		10.91		03/04/93		22		13.8	59.7%
03/11/93	1	DHD130A	65	0.25	59	0.75	78.67	03/12/93		16		15.2	5.4%
07/16/93	2	DHD130A	140	9.25	65	3.75	17.33	07/17/93			43	32.7	31.5%

Total Drill Time = 14.91 Hours
 Average Penetration Rate = 9.39 Feet / Hour
 Total Redrill Time = 4.50 Hours
 Average Penetration Rate = 27.56 Feet / Hour

Verticality Information
 At Full Depth = 0° N/S X 0° E/W
 S-ARC North = 24.56
 S-ARC South = 22.16

Quality Coring: None.

Comments:

Primary Pile # 385
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/30/93	2	240	140	4.41		31.75		08/31/93			38	32.7	16.2%

Total Drill Time = 4.41 Hours
 Average Penetration Rate = 31.75 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 3° S X 1° W
 S-ARC North = 22.16
 S-ARC South = 27.99

Quality Coring: None.

Comments:

Secondary Pile # 386
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/13/93	2	DHD130A	140	15.25			9.18		07/14/93			58	32.7	77.4%

Total Drill Time = 15.25 Hours
Average Penetration Rate = 9.18 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2' S X 1.25' E
S-ARC North = 27.99
S-ARC South = 25.15

Quality Coring: None.

Comments:

Primary Pile # 387
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/13/93	2	DHD130A	140	7.59			18.45		09/13/93			37.5	32.7	14.7%

Total Drill Time = 7.59 Hours
Average Penetration Rate = 18.45 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3' S X 1" W
S-ARC North = 25.15
S-ARC South = 30.34

Quality Coring: None.

Comments:

Secondary Pile # 388
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/15/93	2	DHD130A	140		8.75		16.00			07/15/93			71	32.7	117.2%

Total Drill Time = 8.75 Hours
Average Penetration Rate = 16.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 2.9° E
S-ARC North = 30.34
S-ARC South = 22.18

Quality Coring: None.

Comments:

Primary Pile # 389
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/14/93	2	240	140		5.00		28.00			09/15/93			38	32.7	16.2%

Total Drill Time = 5.00 Hours
Average Penetration Rate = 28.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.77° S X .76° W
S-ARC North = 22.18
S-ARC South = 30.16

Quality Coring: None.

Comments:

Secondary Pile # 390
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/01/93	1	DHD130A	31		1.25		24.80		03/01/93		9		7.2	24.3%
06/22/93	1	DHD130A	48	31	0.84	1.83	20.24	16.94	06/22/93		24		11.2	114.1%
08/13/93	2	DHD130A	140	48	6.83	2.75	13.47	17.45	08/16/93			41	32.7	25.4%

Total Drill Time = 8.92 Hours
Average Penetration Rate = 15.70 Feet / Hour

Total Redrill Time = 4.58 Hours
Average Penetration Rate = 17.25 Feet / Hour

Verticality Information
At Full Depth = .25° S X .75° W
S-ARC North = 30.16
S-ARC South = 25.55

Quality Coring: None.

Comments:

Primary Pile # 391
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/15/93	2	DHD130A	140		7.17		19.53		09/16/93			38	32.7	16.2%

Total Drill Time = 7.17 Hours
Average Penetration Rate = 19.53 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1° S X 1.25° E
S-ARC North = 25.55
S-ARC South = 28.07

Quality Coring: None.

Comments:

Secondary Pile # 392
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/23/93	1	DHD130A	140	7.58		18.47		08/11/93			57.5	32.7	75.9%

Total Drill Time = 7.58 Hours
Average Penetration Rate = 18.47 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 3° E
S-ARC North = 28.07
S-ARC South = 23.52

Quality Coring: None.

Comments:

Primary Pile # 393
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/28/93	2	DHD130A	140	8.84		15.84		09/28/93			39	32.7	19.3%

Total Drill Time = 8.84 Hours
Average Penetration Rate = 15.84 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2° S X 0° E/W
S-ARC North = 23.52
S-ARC South = 24.54

Quality Coring: None.

Comments:

Secondary Pile # 394
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/20/93	2	DHD130A	140	10.78		12.99	08/21/93			46	32.7	40.7%

Total Drill Time = 10.78 Hours
Average Penetration Rate = 12.99 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.53° S X 0° E W
S-ARC North = 24.54
S-ARC South = 31.11

Quality Coring: None.

Comments:

Primary Pile # 395
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/14/93	2	XL-24	140	5.42		25.83	09/15/93			38	32.7	16.2%

Total Drill Time = 5.42 Hours
Average Penetration Rate = 25.83 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 3.27° W
S-ARC North = 31.11
S-ARC South = 20.69

Quality Coring: None.

Comments:

Secondary Pile # 396
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/27/93	2	DHD130A	140	7.25			19.31	08/28/93			49.5	32.7	51.4%

Total Drill Time = 7.25 Hours
Average Penetration Rate = 19.31 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.86° S X 4.69° W
S--ARC North = 20.89
S--ARC South = 28.39

Quality Coring: None.

Comments:

Primary Pile # 397
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/25/93	2	DHD130A	140	8.67			16.15	09/27/93			37	32.7	13.2%

Total Drill Time = 8.67 Hours
Average Penetration Rate = 16.15 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.5° S X 2° W
S--ARC North = 28.39
S--ARC South = 26.02

Quality Coring: None.

Comments:

Secondary Pile # 398
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/30/93	2	DHD130A	140		7.16		19.55	09/01/93			59	32.7	80.5%

Total Drill Time = 7.16 Hours
Average Penetration Rate = 19.55 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3" S X 1" W
S-ARC North = 26.02
S-ARC South = 28.13

Quality Coring: None.

Comments:

Primary Pile # 399
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/23/93	2	DHD130A	140		10.17		13.77	09/23/94			38	32.7	16.2%

Total Drill Time = 10.17 Hours
Average Penetration Rate = 13.77 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2" S X 0" E/W
S-ARC North = 28.13
S-ARC South = 27.11

Quality Coring: None.

Comments:

Secondary Pile # 400
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
03/01/93	1	DHD130A	31		17.71		03/02/93	7			7.2	-3.3%
03/10/93	1	DHD130A	64	31	44.00	0.92	03/11/93	16			14.9	7.1%
09/09/93	2	DHD130A	140	64	17.88	1.33	09/09/93			42	32.7	28.5%

Total Drill Time = 6.75 Hours
Average Penetration Rate = 20.74 Feet / Hour

Total Redrill Time = 2.25 Hours
Average Penetration Rate = 42.22 Feet / Hour

Verticality Information

At Full Depth = 1.75" S X .5" W
S-ARC North = 24.17
S-ARC South = 30.80

Quality Coring: 6" Joint core; 400/401; 10/26/93

Comments:

Primary Pile # 401
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
09/21/93	2	DHD130A	140		17.68		09/22/93			39.5	32.7	20.8%

Total Drill Time = 7.92 Hours
Average Penetration Rate = 17.68 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 1.25" N X .75" W
S-ARC North = 30.80
S-ARC South = 24.78

Quality Coring: None.

Comments:

Secondary Pile # 402
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/24/93	1	DHD130A	63	1.92		32.81		06/24/93		25		14.7	69.9%
09/10/93	2	DHD130A	140	5.41	3.75	14.23	16.80	09/10/93			41	32.7	25.4%

Total Drill Time = 7.33 Hours
Average Penetration Rate = 19.10 Feet / Hour
Total Redrill Time = 3.75 Hours
Average Penetration Rate = 16.80 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 3° W
S-ARC North = 24.78
S-ARC South = 33.29

Quality Coring: None.

Comments:

Primary Pile # 403
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/18/93	2	DHD130A	140	7.92		17.68		09/18/93			38	32.7	16.2%

Total Drill Time = 7.92 Hours
Average Penetration Rate = 17.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 5° N X 2.75° W
S-ARC North = 33.29
S-ARC South = 18.34

Quality Coring: None.

Comments:

Secondary Pile # 404
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
08/26/93	2	DHD130A	140	7.08		19.77		08/26/93			55	32.7	68.2%

Total Drill Time = 7.08 Hours
Average Penetration Rate = 19.77 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 18.34
S-ARC South = 25.96

Quality Coring: None.

Comments:

Primary Pile # 405
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
09/29/93	2	DHD130A	140	9.16		15.28		09/29/93			38	32.7	16.2%

Total Drill Time = 9.16 Hours
Average Penetration Rate = 15.28 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .5° S X 2.5° W
S-ARC North = 25.86
S-ARC South = 29.77

Quality Coring: None.

Comments:

Secondary Pile # 406
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
08/23/93	2	DHD130A	140		9.25		15.14			50	32.7	52.9%

Total Drill Time = 9.25 Hours
Average Penetration Rate = 15.14 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Vertically Information

At Full Depth = 1.75" N X 1.25" W
S-ARC North = 29.77
S-ARC South = 26.39

Quality Coring: None.

Comments:

Primary Pile # 407
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
09/30/93	2	DHD130A	140		8.84		15.84			39	32.7	19.3%

Total Drill Time = 8.84 Hours
Average Penetration Rate = 15.84 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Vertically Information

At Full Depth = 1.5" N X .5" W
S-ARC North = 26.39
S-ARC South = 22.71

Quality Coring: None.

Comments:

Secondary Pile # 408
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
08/18/93	2	DHD130A	140	13.16		10.64		08/19/93			69.5	32.7	112.6%

Total Drill Time = 13.16 Hours
Average Penetration Rate = 10.64 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" S X 3.5" W
S-ARC North = 22.71
S-ARC South = 30.11

Quality Coring: None.

Comments: Connected to piles 443, 445, & 381

Primary Pile # 409
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
10/02/93	2	DHD130A	140	8.33		16.81		10/02/93			36	32.7	16.2%

Total Drill Time = 8.33 Hours
Average Penetration Rate = 16.81 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5" N X 2.25" W
S-ARC North = 30.11
S-ARC South = 31.07

Quality Coring: None.

Comments:

Secondary Pile # 410
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Penetration Rate Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/01/93	1	DHD130A	22		1.66			13.25			OPEN			5.1	
03/04/93	1	DHD130A	42		0.58		0.17	72.41	0.00		OPEN			9.8	
03/11/93	1	DHD130A	65		0.41		0.17	158.54	0.00	03/12/93		20		15.2	31.8%
08/24/93	2	DHD130A	140	65	5.42		2.17	13.84	29.95	08/24/93			42	32.7	28.5%

Total Drill Time = 8.07 Hours
 Average Penetration Rate = 25.28 Feet / Hour
 Total Redrill Time = 2.51 Hours
 Average Penetration Rate = 25.90 Feet / Hour

Verticality Information
 At Full Depth = 4.75" N X 1" W
 S-ARC North = 31.07
 S-ARC South = 22.15

Quality Coring: None.

Comments:

Primary Pile # 411
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Penetration Rate Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/29/93	2	DHD130A	140		8.67			16.15		09/29/93			36	32.7	10.1%

Total Drill Time = 8.67 Hours
 Average Penetration Rate = 16.15 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 1.75" N X 0" E/W
 S-ARC North = 22.15
 S-ARC South = 27.34

Quality Coring: None.

Comments:

Secondary Pile # 412
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/05/93	1	DHD130A	171		20.17		8.48		08/13/93			83.5	39.9	109.1%

Total Drill Time = 20.17 Hours
Average Penetration Rate = 8.48 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.67" N X 1.33" E
S--ARC North = 27.34
S--ARC South = 22.69

Quality Coring: NX/INQ cored 177.2' deep on 11/04/93.

Comments: Hole collapsed after completion, had to be cleaned; connected to 442

Primary Pile # 413
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/01/93	2	DHD130A	170		10.66		15.95		10/01/93			46	39.7	15.9%

Total Drill Time = 10.66 Hours
Average Penetration Rate = 15.95 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0 N/S X 0 E/W
S--ARC North = 22.69
S--ARC South = 25.19

Quality Coring: None.

Comments:

Secondary Pile # 414
Area "A"

CUT-OFF WALL EXCAVATION							CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/03/93	1	DHD130A	170	14.17		12.00		08/03/93			58	39.7	46.1%

Total Drill Time = 14.17 Hours
Average Penetration Rate = 12.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1°S X 2°E
S--ARC North = 25.19
S--ARC South = 29.16

Quality Coring: None.

Comments:

Primary Pile # 415
Area "A"

CUT-OFF WALL EXCAVATION							CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/27/93	2	DHD130A	170	10.34		16.44		09/27/93			45.5	39.7	14.6%

Total Drill Time = 10.34 Hours
Average Penetration Rate = 16.44 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .75°N X 1.5°E
S--ARC North = 29.16
S--ARC South = 24.56

Quality Coring: None.

Comments:

Secondary Pile # 416
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/22/93	2	DHD130A	170		10.42		16.31			07/22/93			57	39.7	43.6%

Total Drill Time = 10.42 Hours
Average Penetration Rate = 16.31 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .75° S X 2.25° E
S-ARC North = 24.56
S-ARC South = 27.46

Quality Coring: None.

Comments:

Primary Pile # 417
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/13/93	2	240	170		5.83		29.16			09/14/93			47	39.7	18.4%

Total Drill Time = 5.83 Hours
Average Penetration Rate = 29.16 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .25° S X 2° E
S-ARC North = 27.46
S-ARC South = 30.08

Quality Coring: None.

Comments:

Secondary Pile # 418
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
07/20/93	1	DHD130A	170		11.83		14.37			55	39.7	38.5%

Total Drill Time = 11.83 Hours
Average Penetration Rate = 14.37 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information
At Full Depth = 2.25" N X 3.52" E
S-ARC North = 30.08
S-ARC South = 11.01

Quality Coring: None.

Comments:

Primary Pile # 419
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
09/24/93	2	DHD130A	170		9.50		17.89			48	39.7	20.9%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 17.89 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information
At Full Depth = 5.78" S X 0" E/W
S-ARC North = 11.01
S-ARC South = 39.60

Quality Coring: None.

Comments:

Secondary Pile # 420
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
03/02/93	1	DHD130A	33		1.41	23.40	03/02/93	9		7.7	16.8%
06/24/93	1	DHD130A	60	33	5.00	2.33		OPEN HOLE			
07/05/93	1	DHD130A	170	0	4.83	35.20	07/06/93		68.5	39.7	72.6%

Total Drill Time = 11.24 Hours
 Average Penetration Rate = 20.46 Feet / Hour
 Total Redrill Time = 2.33 Hours
 Average Penetration Rate = 14.16 Feet / Hour

Verticality Information
 At Full Depth = 5.15' N X 3.09' E
 S-ARC North = 39.60
 S-ARC South = 18.30

Quality Coring: None.

Comments:

Primary Pile # 421
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
09/16/93	2	DHD130A	170		9.33	18.22	09/16/93		44	39.7	10.8%

Total Drill Time = 9.33 Hours
 Average Penetration Rate = 18.22 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 0' N/S X 1.5' E
 S-ARC North = 18.30
 S-ARC South = 23.50

Quality Coring: None.

Comments:

Secondary Pile # 422
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/30/93	1	DHD130A	170	17.92		9.49		06/30/93			75	39.7	88.9%

Total Drill Time = 17.92 Hours
Average Penetration Rate = 9.49 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.75° S X 6.29° E
S--ARC North = 23.50
S--ARC South = 19.66

Quality Coring: None.

Comments: Hole collapsed

Primary Pile # 423
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/22/93	2	DHD130A	170	10.83		15.70		09/23/93			46	39.7	15.9%

Total Drill Time = 10.83 Hours
Average Penetration Rate = 15.70 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 5.33° S X 0° E/W
S--ARC North = 19.66
S--ARC South = 33.88

Quality Coring: None.

Comments: Connected with hole 399

Secondary Pile # 424
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
03/04/93	1	DHD130A	64		2.50		25.60		63/04/93		19		14.9	27.1%
07/07/93	1	DHD130A	170	64	8.52	2.66	12.44	24.06	07/08/93			53	39.7	33.5%

Total Drill Time = 11.02 Hours
Average Penetration Rate = 15.43 Feet / Hour

Total Redrill Time = 2.66 Hours
Average Penetration Rate = 24.06 Feet / Hour

Vertically Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 33.88
S-ARC South = 17.71

Quality Coring: None.

Comments:

Primary Pile # 425
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
09/21/93	2	DHD130A	170		11.50		14.78		09/21/93			45.5	39.7	14.6%

Total Drill Time = 11.50 Hours
Average Penetration Rate = 14.78 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 5.28° S X 3.52° E
S-ARC North = 17.71
S-ARC South = 28.56

Quality Coring: None.

Comments:

Secondary Pile # 426
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/24/93	1	DHD130A	60		4.00		15.00		06/25/93		20.5		14.0	46.3%
07/17/93	1	DHD130A	170	60	12.87	4.47	8.55	13.42	07/19/93			96.5	39.7	143.1%

Total Drill Time = 16.87 Hours
 Average Penetration Rate = 10.08 Feet / Hour
 Total Redrill Time = 4.47 Hours
 Average Penetration Rate = 13.42 Feet / Hour

Verticality Information
 At Full Depth = 3.92' S X 1.96" E
 S-ARC North = 28.56
 S-ARC South = 31.50

Quality Coring: None.

Comments: Large cavity 56 - 65' took 32 cubic yds of concrete to fill.

Primary Pile # 427
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/17/93	2	DHD130A	170		11.25		15.11		09/18/93			46	39.7	15.9%

Total Drill Time = 11.25 Hours
 Average Penetration Rate = 15.11 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 0' N/S X 1.76" W
 S-ARC North = 31.50
 S-ARC South = 28.13

Quality Coring: None.

Comments:

Secondary Pile # 428
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
07/12/93	1	DHD130A	75		2.50		30.00		07/12/93		36	46	17.5	105.6%
07/26/93	1	DHD130A	170	75	7.26	3.92	13.09	19.13	07/27/93				39.7	15.9%

Total Drill Time = 9.76 Hours
 Average Penetration Rate = 17.42 Feet / Hour
 Total Redrill Time = 3.92 Hours
 Average Penetration Rate = 19.13 Feet / Hour

Verticality Information
 At Full Depth = 1" N X .75" W
 S-ARC North = 28.13
 S-ARC South = 25.29

Quality Coring: None.

Comments:

Primary Pile # 429
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/07/93	2	DHD130A	170		10.00		17.00		09/07/93			46	39.7	15.9%

Total Drill Time = 10.00 Hours
 Average Penetration Rate = 17.00 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 0" N/S X 0" E/W
 S-ARC North = 25.29
 S-ARC South = 28.16

Quality Coring: None.

Comments:

Secondary Pile # 430
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/02/93	1	DHD130A	30		2.75		10.91			03/03/93		7		7.0	-0.1%
03/10/93	1	DHD130A	65	30	1.00	0.41	35.00		73.17	03/10/93		21		15.2	38.4%
07/23/93	1	DHD130A	86	65	2.50	3.00	8.40		21.67	07/24/93		71.5		20.1	256.0%
07/29/93	1	DHD130A	170	86	1.58	4.75	53.16		18.11	07/30/93			45	39.7	13.4%

Total Drill Time = 7.83 Hours
 Average Penetration Rate = 21.71 Feet / Hour
 Total Redrill Time = 8.16 Hours
 Average Penetration Rate = 22.18 Feet / Hour

Verticality Information
 At Full Depth = 1" N X 0" E/W
 S-ARC North = 28.16
 S-ARC South = 20.05

Quality Coring: 6" Joint core 430/431; 29.6' deep on 10/29/93.
 Comments: Cavity at 86'; placed 71.5 cu. yds

Primary Pile # 431
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/09/93	2	DHD130A	170		10.08		16.87			09/09/93			46.5	39.7	17.1%

Total Drill Time = 10.08 Hours
 Average Penetration Rate = 16.87 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 3.25" S X 0" E/W
 S-ARC North = 20.05
 S-ARC South = 30.43

Quality Coring: None.
 Comments:

Secondary Pile # 432
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/14/93	1	DHD130A	80	2.08		38.46		07/15/93		35.5		18.7	90.0%
07/28/93	1	DHD130A	170	8.66	4.09	10.39	19.56	07/28/93			48	39.7	20.9%

Total Drill Time = 10.74 Hours
Average Penetration Rate = 15.83 Feet / Hour

Total Redrill Time = 4.09 Hours
Average Penetration Rate = 19.56 Feet / Hour

Verticality Information
At Full Depth = 5° S X .5° E
S-ARC North = 30.43
S-ARC South = 24.57

Quality Coring: None.

Comments: Connected with pile 460

Primary Pile # 433
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/10/93	2	240	170	6.16		27.60		09/11/93			45	39.7	13.4%

Total Drill Time = 6.16 Hours
Average Penetration Rate = 27.60 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2° S X .5° E
S-ARC North = 24.57
S-ARC South = 29.37

Quality Coring: None.

Comments:

Secondary Pile # 434
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (HRS)	Redrill (HRS)	Pure Drill Time (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Penetration Rate (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/11/93	1	DHD130A	65	1.90		1.90	34.21		34.21	03/12/93		18		15.2	18.6%
08/11/93	1	DHD130A	170	11.25	3.42	65	9.33	3.42	9.33	08/12/93			88	39.7	121.7%

Total Drill Time = 13.15 Hours
 Average Penetration Rate = 12.93 Feet / Hour
 Total Redrill Time = 3.42 Hours
 Average Penetration Rate = 19.01 Feet / Hour

Verticality Information
 At Full Depth = 0' N/S X 1.5' W
 S-ARC North = 29.37
 S-ARC South = 6.23

Quality Coring: None.

Comments: DEFICIENT JOINT WIDTH AT FULL DEPTH, CORRECTED WITH CONFORMING PILE.
 Connected with pile 472; Large cavity encountered.

Primary Pile # 435
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (HRS)	Redrill (HRS)	Pure Drill Time (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Penetration Rate (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/15/93	2	DHD130A	171	9.08		9.08	18.83		18.83	09/15/93			44	39.9	10.2%

Total Drill Time = 9.08 Hours
 Average Penetration Rate = 18.83 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 6.54' S X 12.10' E
 S-ARC North = 6.23
 S-ARC South = 26.25

Quality Coring: None.

Comments:

Secondary Pile # 436
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/31/93	1	DHD130A	170		15.42		11.02		08/02/93			81	39.7	104.0%

Total Drill Time = 15.42 Hours
Average Penetration Rate = 11.02 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 5.18° S X 3.11° E
S-ARC North = 26.25
S-ARC South = 18.36

Quality Coring: None.

Comments: Cavities 40 to 60' deep

Primary Pile # 437
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/30/93	2	DHD130A	170		10.51		16.18		08/30/93			51	39.7	28.5%

Total Drill Time = 10.51 Hours
Average Penetration Rate = 16.18 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 10.30° S X 1.5° E
S-ARC North = 18.36
S-ARC South = 31.90

Quality Coring: None.

Comments:

Secondary Pile # 438
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
08/09/93	1	DHD130A	171		12.41		08/10/93		46.5		39.9	16.4%
08/16/93	1	DHD130A	170	171		7.42	08/16/93			45	39.7	13.4%

Total Drill Time = 12.41 Hours
Average Penetration Rate = 13.70 Feet / Hour

Total Redrill Time = 7.42 Hours
Average Penetration Rate = 23.05 Feet / Hour

Vertically Information
At Full Depth = 5' S X 5.78' W
S-ARC North = 31.90
S-ARC South = 33.69

Quality Coring: None.

Comments: Connected with pile 470; Hole collapsed 50 feet.

Primary Pile # 439
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
08/23/93	1	DHD130A	170		10.42		08/23/93			46	39.7	15.9%

Total Drill Time = 10.42 Hours
Average Penetration Rate = 16.31 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 1.25' N X 0' E/W
S-ARC North = 33.69
S-ARC South = 24.66

Quality Coring: None.

Comments:

Secondary Pile # 440
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
03/02/93	1	DHD130A	30		1.33		03/03/93		6		7.0	-14.4%
08/12/93	1	DHD130A	171	30	11.30	0.86	08/13/93			55	39.9	37.7%

Total Drill Time = 12.63 Hours
 Average Penetration Rate = 13.54 Feet / Hour
 Total Redrill Time = 0.86 Hours
 Average Penetration Rate = 34.88 Feet / Hour

Verticality Information
 At Full Depth = 0° N/S X 3° E
 S-ARC North = 24.66
 S-ARC South = 17.96

Quality Coring: None.

Comments:

Primary Pile # 441
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
08/18/93	1	DHD130A	170		9.08		08/18/93			49	39.7	23.4%

Total Drill Time = 9.08 Hours
 Average Penetration Rate = 18.72 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 5.28° S X .75° E
 S-ARC North = 17.96
 S-ARC South = 37.01

Quality Coring: None.

Comments:

Secondary Pile # 442
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
08/06/93	1	DHD130A	170		8.84		08/07/93			67	39.7	68.8%

Total Drill Time = 8.84 Hours
Average Penetration Rate = 19.23 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 3° N X 2.25° E
S-ARC North = 37.01
S-ARC South = 24.88

Quality Coring: None.

Comments: Connection with pile 412

Primary Pile # 443
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
08/20/93	1	DHD130A	170		10.50		08/20/93			46	39.7	15.9%

Total Drill Time = 10.50 Hours
Average Penetration Rate = 16.19 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 2° N X 1.5° W
S-ARC North = 24.88
S-ARC South = 26.00

Quality Coring: None.

Comments:

Secondary Pile # 444
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/04/93	1	DHD130A	170	9.42			18.05			08/04/93			59.5	39.7	49.9%

Total Drill Time = 9.42 Hours
Average Penetration Rate = 18.05 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5" N X 0" E/W
S-ARC North = 26.00
S-ARC South = 25.55

Quality Coring: None.

Comments:

Primary Pile # 445
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/17/93	1	DHD130A	170	10.67			15.93			08/18/93			47	39.7	18.4%

Total Drill Time = 10.67 Hours
Average Penetration Rate = 15.93 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" N X 4" E
S-ARC North = 25.55
S-ARC South = 25.22

Quality Coring: None.

Comments: Connected with pile 408

Secondary Pile # 446
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/22/93	1	DHD130A	170	11.67			14.57	07/22/93		59	39.7	48.6%

Total Drill Time = 11.67 Hours
Average Penetration Rate = 14.57 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° NS X 5.78° E
S-ARC North = 25.22
S-ARC South = 29.40

Quality Coring: None.

Comments:

Primary Pile # 447
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/21/93	1	DHD130A	170	9.09			18.70	08/21/93		48	39.7	20.9%

Total Drill Time = 9.09 Hours
Average Penetration Rate = 18.70 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2° N X 4° E
S-ARC North = 29.40
S-ARC South = 25.97

Quality Coring: None.

Comments:

Secondary Pile # 448
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
07/15/93	1	DHD130A	170		11.50		14.78		07/16/93			69	39.7	73.8%

Total Drill Time = 11.50 Hours
Average Penetration Rate = 14.78 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.79" N X 0" EW
S-ARC North = 25.97
S-ARC South = 23.35

Quality Coring: None.

Comments:

Primary Pile # 449
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
08/24/93	2	DHD130A	170		10.51		16.18		08/26/93			46.5	39.7	17.1%

Total Drill Time = 10.51 Hours
Average Penetration Rate = 16.18 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .5" S X .5" W
S-ARC North = 23.35
S-ARC South = 27.45

Quality Coring: None.

Comments:

Secondary Pile # 450
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/02/93	1	DHD130A	50		1.33		37.59			03/03/93				11.7	-5.6%
07/20/93	1	DHD130A	170	50	8.09	1.58	14.83		31.65	07/20/93			51.5	39.7	29.7%

Total Drill Time = 9.42 Hours
Average Penetration Rate = 18.05 Feet / Hour

Total Redrill Time = 1.58 Hours
Average Penetration Rate = 31.65 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 27.45
S-ARC South = 29.39

Quality Coring: None.

Comments:

Primary Pile # 451
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/20/93	2	DHD130A	170		8.59		19.79			09/21/93			46	39.7	15.9%

Total Drill Time = 8.59 Hours
Average Penetration Rate = 19.79 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.7° N X 6° W
S-ARC North = 29.39
S-ARC South = 29.48

Quality Coring: None.

Comments: Connected with pile 425

Secondary Pile # 452
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/06/93	1	DHD130A	170		11.33		15.00		07/07/93			64	39.7	61.2%

Total Drill Time = 11.33 Hours
Average Penetration Rate = 15.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 4.78' N X 6.79' W
S--ARC North = 29.48
S--ARC South = 22.83

Quality Coring: None.

Comments:

Primary Pile # 453
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/13/93	2	240	170		5.33		31.89		09/14/93			47	39.7	18.4%

Total Drill Time = 5.33 Hours
Average Penetration Rate = 31.89 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 2.5' N X 2.5' W
S--ARC North = 22.83
S--ARC South = 23.96

Quality Coring: None.

Comments:

Secondary Pile # 454
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HRT)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/04/93	1	DHD130A	60		3.33		18.02		03/05/93		21		14.0	49.9%
07/13/93	1	DHD130A	170	60	4.32	3.33	25.46	18.02	07/13/93			50	39.7	26.0%

Total Drill Time = 7.65 Hours
Average Penetration Rate = 22.22 Feet / Hour

Total Redrill Time = 3.33 Hours
Average Penetration Rate = 18.02 Feet / Hour

Verticality Information
At Full Depth = 1" N X 2" E
S-ARC North = 23.96
S-ARC South = 25.24

Quality Coring: None.

Comments:

Primary Pile # 455
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/11/93	2	240	171		5.33		32.08		09/11/93			45	39.9	12.7%

Total Drill Time = 5.33 Hours
Average Penetration Rate = 32.08 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0" N/S X .5" E
S-ARC North = 25.24
S-ARC South = 28.13

Quality Coring: None.

Comments: Connected with pile 485

Secondary Pile # 456
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
07/09/93	1	DHD130A	171		12.59	13.58	07/09/93		55.5	39.9	39.0%

Total Drill Time = 12.59 Hours
Average Penetration Rate = 13.58 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" N X 1.25" E
S-ARC North = 28.13
S-ARC South = 12.79

Quality Coring: None.

Comments:

Primary Pile # 457
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
09/17/93	2	DHD130A	170		10.09	16.85	09/17/93		44	39.7	10.6%

Total Drill Time = 10.09 Hours
Average Penetration Rate = 16.85 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 6.54" S X 1" W
S-ARC North = 12.79
S-ARC South = 34.77

Quality Coring: None.

Comments:

Secondary Pile # 458
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
07/10/93	1	DHD130A	170		13.91	12.22	07/12/93			52	39.7	31.0%

Total Drill Time = 13.91 Hours
Average Penetration Rate = 12.22 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° N/S X 2° E
S-ARC North = 34.77
S-ARC South = 29.30

Quality Coring: None.

Comments:

Primary Pile # 459
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
09/07/93	2	DHD130A	170		8.00	21.25	09/08/93			47	39.7	18.4%

Total Drill Time = 8.00 Hours
Average Penetration Rate = 21.25 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2° N X 4.53° E
S-ARC North = 29.30
S-ARC South = 25.55

Quality Coring: None.

Comments:

Secondary Pile # 460
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/02/93	1	DHD130A	45		1.50		30.00		03/03/93		11		10.5	4.7%
03/10/93	1	DHD130A	55	45	1.00	0.91	10.00	49.45	03/10/93		18		12.8	40.1%
07/14/93	1	DHD130A	170	55	10.25	2.25	11.22	24.44	07/14/93			46	39.7	15.9%

Total Drill Time = 12.75 Hours
Average Penetration Rate = 13.33 Feet / Hour

Total Redrill Time = 3.16 Hours
Average Penetration Rate = 31.65 Feet / Hour

Verticality Information
At Full Depth = 1.27" N X 2.29" E
S--ARC North = 25.55
S--ARC South = 24.76

Quality Coring: None.

Comments: Connected with pile 432

Primary Pile # 461
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/09/93	2	DHD130A	170		10.25		16.59		09/10/93			46.5	39.7	17.1%

Total Drill Time = 10.25 Hours
Average Penetration Rate = 16.59 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0" N/S X 0" E/W
S--ARC North = 24.76
S--ARC South = 24.56

Quality Coring: None.

Comments:

Secondary Pile # 462
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/26/93	1	DHD130A	170	12.17		13.97			07/26/93			52	39.7	31.0%

Total Drill Time = 12.17 Hours
Average Penetration Rate = 13.97 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.5° S X 0° E/W
S-ARC North = 24.56
S-ARC South = 28.65

Quality Coring: None.

Comments:

Primary Pile # 463
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/22/93	2	DHD130A	170	9.83		17.29			09/22/93			45	39.7	13.4%

Total Drill Time = 9.83 Hours
Average Penetration Rate = 17.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 2.5° E
S-ARC North = 28.65
S-ARC South = 17.51

Quality Coring: None.

Comments:

Secondary Pile # 464
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT./HR)	Redrill (FT./HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/27/93	1	DHD130A	170	13.83		12.29		07/28/93			53.5	39.7	34.8%

Total Drill Time = 13.83 Hours
Average Penetration Rate = 12.29 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 5.57" S X 3.54" E
S--ARC North = 17.51
S--ARC South = 34.39

Quality Coring: None.

Comments: Cavity 41 - 52'

Primary Pile # 465
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT./HR)	Redrill (FT./HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/27/93	2	DHD130A	170	10.58		16.07		09/27/93			45	39.7	13.4%

Total Drill Time = 10.58 Hours
Average Penetration Rate = 16.07 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .5" N X 1.5" E
S--ARC North = 34.39
S--ARC South = 22.38

Quality Coring: None.

Comments:

Secondary Pile # 466
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/29/93	1	DHD130A	170	10.58		16.07		07/29/93			54	39.7	36.0%

Total Drill Time = 10.58 Hours
Average Penetration Rate = 16.07 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.32' S X .52' W
S-ARC North = 22.38
S-ARC South = 27.13

Quality Coring: None.

Comments:

Primary Pile # 467
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/05/93	2	DHD130A	170	11.25		15.11		10/06/93			47	39.7	18.4%

Total Drill Time = 11.25 Hours
Average Penetration Rate = 15.11 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2' S X 1" E
S-ARC North = 27.13
S-ARC South = 24.83

Quality Coring: None.

Comments:

Secondary Pile # 468
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/30/93	1	DHD130A	170	12.33		13.79		08/05/93			75	39.7	88.9%

Total Drill Time = 12.33 Hours
Average Penetration Rate = 13.79 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3° S X 5° E
S--ARC North = 24.83
S--ARC South = 29.43

Quality Coring: None.

Comments: Hole collapsed - cavity 34-50'; Took 32 cy of concrete to fill

Primary Pile # 469
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/04/93	2	DHD130A	170	10.33		16.46		10/04/93			45	39.7	13.4%

Total Drill Time = 10.33 Hours
Average Penetration Rate = 16.46 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1° S X 3.5° E
S--ARC North = 29.43
S--ARC South = 29.44

Quality Coring: None.

Comments:

Secondary Pile # 470
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/07/93	1	DHD130A	171	11.00		15.55		08/09/93			69.5	39.9	74.0%

Total Drill Time = 11.00 Hours
Average Penetration Rate = 15.55 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" N X 2" E
S-ARC North = 29.44
S-ARC South = 26.27

Quality Coring: 6' Joint core to 29.6' on 10/30/93

Comments: Connected to pile 438

Primary Pile # 471
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/01/93	2	DHD130A	170	12.41		13.70		10/02/93			46	39.7	15.9%

Total Drill Time = 12.41 Hours
Average Penetration Rate = 13.70 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .75" N X 0" E/W
S-ARC North = 26.27
S-ARC South = 22.94

Quality Coring: None.

Comments: See pile 470

Secondary Pile # 472
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (HRS)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/10/93	1	DHD130A	64	3.91		16.37		08/11/93		43.5		14.9	191.1%
10/07/93	2	DHD130A	170	6.75	64	15.70	3.67	10/07/93			45	39.7	13.4%

Total Drill Time = 10.66 Hours
Average Penetration Rate = 15.95 Feet / Hour

Total Redrill Time = 3.67 Hours
Average Penetration Rate = 17.44 Feet / Hour

Verticality Information
At Full Depth = 1.75° S X 1.5° E
S-ARC North = 22.94
S-ARC South = 29.04

Quality Coring: None.

Comments:

Primary Pile # 473
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (HRS)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/21/93	1	DHD130A	63	3.00		21.00		08/22/93		32		14.7	117.5%
09/30/93	2	DHD130A	170	9.83	63	10.89	4.33	09/30/93			55.5	39.7	39.8%

Total Drill Time = 12.83 Hours
Average Penetration Rate = 13.25 Feet / Hour

Total Redrill Time = 4.33 Hours
Average Penetration Rate = 14.55 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 3.58° E
S-ARC North = 29.04
S-ARC South = 26.69

Quality Coring: None.

Comments: Cavity at 62'

Secondary Pile # 474
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
08/16/93	1	DHD130A	60		2.43		08/17/93		19.5	45	14.0	39.2%
10/11/93	2	DHD130A	170	60	7.41	3.50	10/11/93				39.7	13.4%

Total Drill Time = 9.84 Hours
 Average Penetration Rate = 17.28 Feet / Hour
 Total Redrill Time = 3.50 Hours
 Average Penetration Rate = 17.14 Feet / Hour

Verticality Information
 At Full Depth = 0° N/S X 2° E
 S-ARC North = 26.69
 S-ARC South = 26.05

Quality Coring: None.

Comments: Cavity

Primary Pile # 475
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
09/28/93	2	DHD130A	170		13.25		09/28/93			48	39.7	20.9%

Total Drill Time = 13.25 Hours
 Average Penetration Rate = 12.83 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 5° S X 2.26° E
 S-ARC North = 26.05
 S-ARC South = 26.02

Quality Coring: None.

Comments:

Secondary Pile # 476
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/19/93	1	DHD130A	78		2.92		26.71		08/20/93		36	44.5	18.2	97.6%
10/05/93	2	DHD130A	170	78	6.08	4.83	15.13	16.15	10/06/93				39.7	12.1%

Total Drill Time = 9.00 Hours
 Average Penetration Rate = 18.89 Feet / Hour
 Total Redrill Time = 4.83 Hours
 Average Penetration Rate = 16.15 Feet / Hour

Verticality Information
 At Full Depth = 1" S X 3" E
 S-ARC North = 26.02
 S-ARC South = 23.72

Quality Coring: None.

Comments:

Primary Pile # 477
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/24/93	2	DHD130A	170		11.67		14.57		09/25/93			49	39.7	23.4%

Total Drill Time = 11.67 Hours
 Average Penetration Rate = 14.57 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate =

Verticality Information
 At Full Depth = 3" S X 4.53" E
 S-ARC North = 23.72
 S-ARC South = 29.30

Quality Coring: None.

Comments: Part of verticality device lost in hole.

Secondary Pile # 478
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
08/17/93	1	DHD130A	62		1.83		08/18/93		32.5		14.5	124.5%
10/02/93	2	DHD130A	170	62	7.50	4.17	10/04/93			45	39.7	13.4%

Total Drill Time = 9.33 Hours
 Average Penetration Rate = 18.22 Feet / Hour
 Total Redrill Time = 4.17 Hours
 Average Penetration Rate = 14.87 Feet / Hour

Verticality Information
 At Full Depth = 1" S X 2" E
 S--ARC North = 29.30
 S--ARC South = 26.72

Quality Coring: None.

Comments: Cavity at 62'

Primary Pile # 479
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
09/20/93	2	DHD130A	175		14.92		09/21/93			100.5	40.9	145.9%

Total Drill Time = 14.92 Hours
 Average Penetration Rate = 11.73 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 1" S X 3.27" E
 S--ARC North = 26.72
 S--ARC South = 19.10

Quality Coring: None.

Comments: Deep cavity at 165'-168'; other cavities also in pile.

Secondary Pile # 480
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/05/93	1	DHD130A	59	1.83			32.24	08/06/93		34		13.8	146.8%
10/06/93	2	DHD130A	170	6.83	59	3.60	16.25	11/03/93			45	39.7	13.4%

Total Drill Time = 8.66 Hours
Average Penetration Rate = 19.63 Feet / Hour

Total Redrill Time = 3.60 Hours
Average Penetration Rate = 16.39 Feet / Hour

Verticality Information
At Full Depth = 5.6° S X 0° E/W
S-ARC North = 19.10
S-ARC South = 30.82

Quality Coring: None.

Comments: Lost bit in hole; Cavity at 60' deep

Primary Pile # 481
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/16/93	2	DHD130A	170	10.67			15.93	09/17/93			48	39.7	20.9%

Total Drill Time = 10.67 Hours
Average Penetration Rate = 15.93 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.5° S X 1.5° W
S-ARC North = 30.82
S-ARC South = 39.35

Quality Coring: None.

Comments:

Secondary Pile # 482
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/13/93	1	DHD130A	74		3.83		19.32			08/16/93		36		17.3	108.3%
11/09/93	1	DHD130A	170	74	4.83	1.42	19.88		52.11	11/09/93			42	39.7	5.8%

Total Drill Time = 8.66 Hours
Average Penetration Rate = 19.63 Feet / Hour

Total Redrill Time = 1.42 Hours
Average Penetration Rate = 52.11 Feet / Hour

Verticality Information
At Full Depth = 8.5" N X 2.76" E
S-ARC North = 39.35
S-ARC South = 11.83

Quality Coring: None.

Comments:

Primary Pile # 483
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/15/93	2	DHD130A	170		11.25		15.11			09/15/93			55	39.7	38.5%

Total Drill Time = 11.25 Hours
Average Penetration Rate = 15.11 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5" N X 5" W
S-ARC North = 11.83
S-ARC South = 18.63

Quality Coring: None.

Comments:

Secondary Pile # 484
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/11/93	1	DHD130A	72	1.83			39.34	08/12/93				16.8	191.4%
10/26/93	2	DHD130A	170	4.50	72	3.33	21.78	10/26/93		49	46	39.7	15.9%

Total Drill Time = 6.33 Hours
Average Penetration Rate = 26.86 Feet / Hour

Total Redrill Time = 3.33 Hours
Average Penetration Rate = 21.62 Feet / Hour

Verticality Information
At Full Depth = 3.5" S X 5.5" W
S-ARC North = 18.63
S-ARC South = 30.18

Quality Coring: None.

Comments:

Primary Pile # 485
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/13/93	2	240	172	8.25			20.85	09/14/93			91	40.2	128.6%

Total Drill Time = 8.25 Hours
Average Penetration Rate = 20.85 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = .25" S X 0" E/W
S-ARC North = 30.18
S-ARC South = 32.22

Quality Coring: None.

Comments: Connected with pile 455; cavity 49-65'

Secondary Pile # 486
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/21/93	1	DHD130A	72	2.33		30.90			07/22/93		42	48	16.8	149.8%
10/19/93	1	DHD130A	170	5.50	72	17.82		26.97	10/20/93				39.7	20.9%

Total Drill Time = 7.83 Hours
 Average Penetration Rate = 21.71 Feet / Hour
 Total Redrill Time = 2.67 Hours
 Average Penetration Rate = 26.97 Feet / Hour

Verticality Information
 At Full Depth = 4" N X 2" E
 S--ARC North = 32.22
 S--ARC South = 21.23

Quality Coring: None.

Comments:

Primary Pile # 487
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/10/93	2	DHD130A	170	10.58		16.07			09/10/93			76	39.7	91.4%

Total Drill Time = 10.58 Hours
 Average Penetration Rate = 16.07 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 5" N X 0" EW
 S--ARC North = 21.23
 S--ARC South = 28.68

Quality Coring: None.

Comments: Cavity 50-70' deep

Secondary Pile # 488
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
07/16/93	1	DHD130A	60		1.30		07/16/93		27		14.0	92.7%
08/03/93	1	DHD130A	75	60	8.03	2.30	08/03/93		24		17.5	37.0%
10/22/93	2	DHD130A	170	75	6.33	3.50	10/23/93		43		39.7	8.3%

Total Drill Time = 15.66 Hours
 Average Penetration Rate = 10.86 Feet / Hour
 Total Redrill Time = 5.80 Hours
 Average Penetration Rate = 23.28 Feet / Hour

Verticality Information
 At Full Depth = 2' N X 2.26" E
 S--ARC North = 28.68
 S--ARC South = 31.00

Quality Coring: None.

Comments: Cavity at 63'

Primary Pile # 489
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
08/27/93	2	DHD130A	183.5		19.74		08/28/93			117	42.9	173.0%

Total Drill Time = 19.74 Hours
 Average Penetration Rate = 9.30 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate =

Verticality Information
 At Full Depth = 5.21" N X 3.13" E
 S--ARC North = 31.00
 S--ARC South = No Overlap at Full Depth, Connected with Conforming Pile.

Quality Coring: None.

Comments: Used 489/490 conforming pile for sump. Lost air in hole at 157'.

Secondary Pile # 490
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)			Drill (FT / HR)	Redrill (FT / HR)						
07/12/93	1	DHD130A	57		1.67		34.13		07/12/93		23		13.3	72.8%
07/19/93	1	DHD130A	69		2.05	3.00	5.85	19.00	07/19/93		36		16.1	123.4%
10/30/93	2	DHD130A	170		10.33	3.50	9.78	19.71	10/30/93		44		39.7	10.8%

Total Drill Time = 14.05 Hours
 Average Penetration Rate = 12.10 Feet / Hour
 Total Redrill Time = 6.50 Hours
 Average Penetration Rate = 19.38 Feet / Hour

Verticality Information
 At Full Depth = 5.53° S X 3.52° E
 S--ARC North = No Overlap at Full Depth, Connected With conforming Pile.
 S--ARC South = 23.51

Quality Coring: None.
 Comments: Cavity at 69'

Primary Pile # 491
Area "A"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)			Drill (FT / HR)	Redrill (FT / HR)						
09/09/93	2	240	170		5.50		30.91		09/09/93			45	39.7	13.4%

Total Drill Time = 5.50 Hours
 Average Penetration Rate = 30.91 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 7.72° S X 3.09° E
 S--ARC North = 23.51
 S--ARC South = 37.83

Quality Coring: None.
 Comments:

Secondary Pile # 492
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
07/06/93	1	DHD130A	90		6.75		13.33		07/07/93		49.5		21.0	135.5%
07/15/93	1	DHD130A	170	90	5.92	4.75	13.51	18.95	07/15/93			48	39.7	20.9%

Total Drill Time = 12.67 Hours
Average Penetration Rate = 13.42 Feet / Hour

Total Redrill Time = 4.75 Hours
Average Penetration Rate = 18.95 Feet / Hour

Verticality Information
At Full Depth = 1.26° N X 2.28° E
S-ARC North = 37.83
S-ARC South = 28.50

Quality Coring: None.

Comments:

Primary Pile # 493
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/09/93	2	DHD130A	170		11.42		14.89		10/09/93			45	39.7	13.4%

Total Drill Time = 11.42 Hours
Average Penetration Rate = 14.89 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.52° N X 2° E
S-ARC North = 28.50
S-ARC South = 21.32

Quality Coring: None.

Comments:

Secondary Pile # 494
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
07/09/93	1	DHD130A	170		14.25	11.93	07/10/93		53.5	39.7	34.8%

Total Drill Time = 14.25 Hours
Average Penetration Rate = 11.93 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" S X 2.75" E
S-ARC North = 21.32
S-ARC South = 24.89

Quality Coring: None.

Comments:

Primary Pile # 495
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
10/25/93	2	XL-24	170		6.33	26.86	10/25/93		47.5	39.7	19.7%

Total Drill Time = 6.33 Hours
Average Penetration Rate = 26.86 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2" S X 1" W
S-ARC North = 24.89
S-ARC South = 19.98

Quality Coring: None.

Comments:

Secondary Pile # 496
Area "A"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
07/13/93	1	DHD130A	59		2.25		26.22		07/13/93		23		13.8	66.9%					
07/24/93	1	DHD130A	170	59	9.67	2.50	11.48		07/24/93		86		39.7	116.6%					
08/20/93	1	DHD130A	170	170		5.66			08/21/93		47		39.7	18.4%					

Total Drill Time = 11.92 Hours
Average Penetration Rate = 14.26 Feet / Hour

Total Redrill Time = 8.16 Hours
Average Penetration Rate = 28.06 Feet / Hour

Verticality Information
At Full Depth = 6.29° S X 0° E/W
S-ARC North = 19.98
S-ARC South = 30.92

Quality Coring: None.
Comments: Cavity at 59'; Hole collapsed.

Primary Pile # 497
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
12/02/93	2	XL-24	170		4.92		34.55		12/03/93			57.5	39.7	44.8%					

Total Drill Time = 4.92 Hours
Average Penetration Rate = 34.55 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.18° S X 0° E/W
S-ARC North = 30.92
S-ARC South = 21.99

Quality Coring: None.
Comments: Numerous air connection from pile 550 to 600

Secondary Pile # 498
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/16/93	1	DHD130A	70	3.17			22.08		08/17/93		38		16.3	132.5%
10/27/93	2	240	74	0.33	70	2.25	12.12	31.11	10/28/93		63		17.3	264.6%
12/11/93	2	XL-24	170	3.25	74	2.67	28.54	27.72	12/11/93			47	39.7	18.4%

Total Drill Time = 6.75 Hours
Average Penetration Rate = 25.19 Feet / Hour

Total Redrill Time = 4.92 Hours
Average Penetration Rate = 29.27 Feet / Hour

Verticality Information
At Full Depth = 6.26" S X 1.5" E
S-ARC North = 21.99
S-ARC South = 33.15

Quality Coring: None.

Comments: Cavity 50'-70' deep

Primary Pile # 499
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
12/07/93	2	DHD130A	170	16.33			10.41		12/08/93			96	39.7	139.3%

Total Drill Time = 16.33 Hours
Average Penetration Rate = 10.41 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1" S X 2" W
S-ARC North = 33.15
S-ARC South = 24.71

Quality Coring: None.

Comments:

Secondary Pile #500
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
10/20/93	1	XL-24	46		0.83		55.42		10/21/93		37		10.7	244.4%
11/05/93	1	DHD130A	78	46	1.67	5.50	19.16	8.36	11/06/93		34		18.2	86.7%
01/06/94	2	DHD130A	186	78	9.34	4.75	11.56	16.42	01/06/94		49.5		43.4	14.0%

Total Drill Time = 11.84 Hours
 Average Penetration Rate = 15.71 Feet / Hour
 Total Redrill Time = 10.25 Hours
 Average Penetration Rate = 12.10 Feet / Hour

Verticality Information
 At Full Depth = 2.5" South X 0" East / West
 S-ARC North = 26.52"
 S-ARC South = 31.71"

Quality Coring: None.

Comments:

Primary Pile #501
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
12/14/93	2	XL-24	185		8.33		22.21		12/15/93		53		43.2	22.7%

Total Drill Time = 8.33 Hours
 Average Penetration Rate = 22.21 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 1.25" North X 1.0" West
 S-ARC North = 31.71"
 S-ARC South = 29.92"

Quality Coring: None.

Comments:

Secondary Pile #502
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/02/93	2	DHD130A	66	2.00		33.00		11/02/93		39		15.4	153.0%
01/11/94	1	DHD130A	185	7.42	66	16.04	3.07	01/12/94			51	43.2	18.1%

Total Drill Time = 9.42 Hours
Average Penetration Rate = 19.64 Feet / Hour
Total Redrill Time = 3.07 Hours
Average Penetration Rate = 21.50 Feet / Hour

Verticality Information

At Full Depth = 3.5" North X 1.0" West
S-ARC North = 29.92"
S-ARC South = No Overlap at Full Depth, Overlap Achieved with Conforming Pile.

Quality Coring: None.

Comments:

Primary Pile #503
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/08/93	1	DHD130A	83	3.92		21.17		11/30/93		45		19.4	132.2%
05/18/93	2	XL-24	185	3.66	83	27.87	3.50	05/19/94			48	43.2	11.1%

Total Drill Time = 7.58 Hours
Average Penetration Rate = 24.41 Feet / Hour
Total Redrill Time = 3.50 Hours
Average Penetration Rate = 23.71 Feet / Hour

Verticality Information

At Full Depth = 10.5" North X 6.0" West
S-ARC North = No Overlap at Full Depth, Overlap Achieved with Conforming Pile.
S-ARC South = 31.38"

Quality Coring: None.

Comments:

Secondary Pile #504
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/04/93	1	DHD130A	64	1.58		40.51	11/04/93		28.5		14.9	90.7%
05/04/94	1	DHD130A	185	8.21	3.12	14.74	05/04/94			47	43.2	8.8%

Total Drill Time = 9.79 Hours
 Average Penetration Rate = 18.90 Feet / Hour
 Total Redrill Time = 3.12 Hours
 Average Penetration Rate = 20.51 Feet / Hour

Verticality Information
 At Full Depth = 7.0° South X 5.5° West
 S-ARC North = 31.38"
 S-ARC South = 36.40"

Quality Coring: None.

Comments:

Primary Pile #505
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/11/94	2	DHD130A	80	4.50		17.78	04/11/94				18.7	74.0%
06/14/94	1	DHD130A	185	5.25	2.00	20.00	06/15/94	32.5		47	43.2	8.8%

Total Drill Time = 9.75 Hours
 Average Penetration Rate = 18.97 Feet / Hour
 Total Redrill Time = 2.00 Hours
 Average Penetration Rate = 40.00 Feet / Hour

Verticality Information
 At Full Depth = 1.0° North X 2.25° West
 S-ARC North = 36.40"
 S-ARC South = No Overlap at Full Depth, Overlap Achieved with Conforming Pile.

Quality Coring: None.

Comments:

Secondary Pile #506
Area "B"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/13/94	2	DHD130A	74		4.75		15.58		01/31/94	12			17.3	-30.8%
02/11/94	2	XL-24	135	74	2.35	1.40	25.96	52.86	02/18/94	86	16		31.5	223.6%
04/20/94	1	DHD130A	185	135	6.00	4.59	8.33	29.41	04/20/94		48		43.2	11.1%

Total Drill Time = 13.10 Hours
 Average Penetration Rate = 14.12 Feet / Hour
 Total Redrill Time = 5.99 Hours
 Average Penetration Rate = 34.89 Feet / Hour

Verticality Information
 At Full Depth = 14.8" South X 9.25" West
 S-ARC North = No Overlap at Full Depth, Overlap Achieved with Conforming Pile.
 S-ARC South = 38.51"

Quality Coring: None.

Comments:

On 1/31/94 12 cu.yds. of grout was placed in Pile #506 before grout pump broke down

Primary Pile #507
Area "B"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/06/94	2	DHD130A	107		3.75		28.53		04/06/94	35	1		25.0	44.1%
06/20/94	1	XL-24	185	107	2.92	2.58	26.71	41.47	06/21/94		47		43.2	8.8%

Total Drill Time = 6.67 Hours
 Average Penetration Rate = 27.74 Feet / Hour
 Total Redrill Time = 2.58 Hours
 Average Penetration Rate = 41.47 Feet / Hour

Verticality Information
 At Full Depth = 5.0" South X 6.75" West
 S-ARC North = 38.51"
 S-ARC South = 21.73"

Quality Coring: None.

Comments:

Secondary Pile #508
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
03/18/94	2	DHD130A	66		22.60		03/18/94	45		48	15.4	192.0%
04/30/94	1	DHD130A	185	66	16.41	1.68	05/02/94				43.2	11.1%

Total Drill Time = 10.17 Hours
 Average Penetration Rate = 18.19 Feet / Hour
 Total Redrill Time = 1.68 Hours
 Average Penetration Rate = 39.29 Feet / Hour

Verticality Information
 At Full Depth = 8.25" South X 5.25" West
 S-ARC North = 21.73"
 S-ARC South = 27.80"

Quality Coring: None.

Comments:

Primary Pile #509
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
04/12/94	2	DHD130A	85		23.16		04/13/94	40			19.8	101.5%
07/01/94	1	XL-24	185	85	27.93	2.17	07/05/94			48	43.2	11.1%

Total Drill Time = 7.25 Hours
 Average Penetration Rate = 25.52 Feet / Hour
 Total Redrill Time = 2.17 Hours
 Average Penetration Rate = 39.17 Feet / Hour

Verticality Information
 At Full Depth = 6.5" South X 1.5" East
 S-ARC North = 27.80"
 S-ARC South = 19.40"

Quality Coring: None.

Comments:

Secondary Pile #510
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/21/94	2	DHD130A	65	1.50		43.33			03/22/94	25			15.2	64.7%
05/05/94	1	XL-24	185	4.17	1.08	28.78		60.19	05/05/94			51	43.2	18.1%

Total Drill Time = 5.67 Hours
 Average Penetration Rate = 32.63 Feet / Hour
 Total Redrill Time = 1.08 Hours
 Average Penetration Rate = 60.19 Feet / Hour

Verticality Information
 At Full Depth = 11" South X 1.0" West
 S-ARC North = 19.40"
 S-ARC South = 42.21"

Quality Coring: None.

Comments:

Primary Pile #511
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/14/94	2	DHD130A	109	4.25		25.65			04/15/94	28			25.5	10.0%
06/28/94	1	XL-24	185	2.67	2.91	28.46		37.46	06/29/94			47	43.2	8.8%

Total Drill Time = 6.92 Hours
 Average Penetration Rate = 26.73 Feet / Hour
 Total Redrill Time = 2.91 Hours
 Average Penetration Rate = 37.46 Feet / Hour

Verticality Information
 At Full Depth = 2.0" North X 0.5" West
 S-ARC North = 42.21"
 S-ARC South = 36.77"

Quality Coring: None.

Comments:

Secondary Pile #512
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)						
03/24/94	2	DHD130A	62		1.67		37.13		03/24/94	20		2.2	14.5	53.3%
05/11/94	1	XL-24	185	62	5.09	1.00	24.17	62.00	05/11/94			49	43.2	13.4%

Total Drill Time = 6.76 Hours
 Average Penetration Rate = 27.37 Feet / Hour
 Total Redrill Time = 1.00 Hours
 Average Penetration Rate = 62.00 Feet / Hour

Verticality Information
 At Full Depth = 11" North X 5.0" East
 S-ARC North = 36.77"
 S-ARC South = 7.77"

Quality Coring: None.

Comments:

Primary Pile #513
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)						
04/08/94	2	DHD130A	84		4.43		18.96		04/08/94	37			19.6	88.6%
06/06/94	1	DHD130A	185	84	8.33	3.33	12.12	25.23	06/07/94			47	43.2	8.8%

Total Drill Time = 12.76 Hours
 Average Penetration Rate = 14.50 Feet / Hour
 Total Redrill Time = 3.33 Hours
 Average Penetration Rate = 25.23 Feet / Hour

Verticality Information
 At Full Depth = 2.75" North X 2.25" West
 S-ARC North = 7.77"
 S-ARC South = 24.94"

Quality Coring: None.

Comments:

Secondary Pile #514
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/23/94	1	DHD130A	63		1.08		58.33		03/23/94	20			14.7	35.9%
05/13/94	2	DHD130A	95	63	1.67	2.50	19.16	25.20	05/16/94		27		22.2	21.7%
07/20/94	2	DHD130A	185	95	8.10	6.83	11.11	13.91	07/21/94			47	43.2	8.8%

Total Drill Time = 10.85 Hours
 Average Penetration Rate = 17.05 Feet / Hour
 Total Redrill Time = 9.33 Hours
 Average Penetration Rate = 16.93 Feet / Hour

Vertically Information
 At Full Depth = 2.0' North X 2.5' East
 S-ARC North = 24.94"
 S-ARC South = 13.84"

Quality Coring: None.
 Comments:

Primary Pile #515
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/22/94	1	DHD130A	94		3.50		26.86		04/22/94	33	3.6		22.0	66.7%
05/26/94	1	XL-24	185	94	3.67	1.83	24.80	51.37	05/27/94			48	43.2	11.1%

Total Drill Time = 7.17 Hours
 Average Penetration Rate = 25.80 Feet / Hour
 Total Redrill Time = 1.83 Hours
 Average Penetration Rate = 51.37 Feet / Hour

Vertically Information
 At Full Depth = 3.0' South X 9.0' West
 S-ARC North = 13.84"
 S-ARC South = 29.51"

Quality Coring: None.
 Comments:

Secondary Pile #516
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
03/19/94	2	DHD130A	65		2.17		29.95		03/19/94	89			15.2	486.3%
05/16/94	2	DHD130A	110	65	2.50	1.83	18.00	35.52	05/17/94		33		25.7	28.5%
06/22/94	2	XL-24	185	110	4.46	1.04	16.82	105.77	06/23/94			47	43.2	8.8%

Total Drill Time = 9.13 Hours
Average Penetration Rate = 20.26 Feet / Hour

Total Redrill Time = 2.87 Hours
Average Penetration Rate = 60.98 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 2.5° West
S-ARC North = 29.51"
S-ARC South = 30.32"

Comments:

Primary Pile #517
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
04/19/94	1	DHD130A	120		8.08		14.85		04/19/94	48			28.0	71.3%
05/24/94	1	XL-24	185	120	2.33	2.92	27.90	41.10	05/25/94			47	43.2	8.8%

Total Drill Time = 10.41 Hours
Average Penetration Rate = 17.77 Feet / Hour

Total Redrill Time = 2.92 Hours
Average Penetration Rate = 41.10 Feet / Hour

Verticality Information
At Full Depth = 4.0° North X 5.0° East
S-ARC North = 30.32"
S-ARC South = 17.64"

Quality Coring: None.

Comments:

Secondary Pile #518
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
12/13/93	1	DHD130A	63		7.50		8.40		12/13/93		45.5		14.7	209.3%
03/22/94	1	DHD130A	65	63	0.02	3.23	100.00	19.50	03/22/94	25			15.2	64.7%
05/13/94	2	DHD130A	120	65	3.13	1.28	17.57	50.78	05/13/94		48		28.0	71.3%
08/02/94	1	DHD130A	185	120	4.42	7.83	14.71	15.33	08/03/94			47	43.2	8.8%

Total Drill Time = 15.07 Hours
 Average Penetration Rate = 12.28 Feet / Hour
 Total Redrill Time = 12.34 Hours
 Average Penetration Rate = 20.10 Feet / Hour

Verticality Information
 At Full Depth = 1.5" South X 5.5" East
 S-ARC North = 17.64"
 S-ARC South = 19.54"

Quality Coring: None.

Comments:

Primary Pile #519
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/31/94	1	DHD130A	117		5.83		20.07		03/31/94				27.3	75.7%
06/02/94	1	XL-24	185	117	2.70	2.89	25.19	40.48	06/03/94	48		50	43.2	15.7%

Total Drill Time = 8.53 Hours
 Average Penetration Rate = 21.69 Feet / Hour
 Total Redrill Time = 2.89 Hours
 Average Penetration Rate = 40.48 Feet / Hour

Verticality Information
 At Full Depth = 6.0" South X 7.0" East
 S-ARC North = 19.54"
 S-ARC South = 34.43"

Quality Coring: None.

Comments:

Secondary Pile # 520
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (HRS)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/19/93	1	XL-24	60	0.58				103.45			10/19/93		29		14.0	107.0%
11/06/93	1	DHD130A	75	0.84	60	5.25	5.25	17.86		11.43	11/06/93		32		17.5	82.7%
03/24/94	1	DHD130A	78	0.03	75	3.64	3.64	100.00		20.60	03/24/94	25	2		18.2	48.2%
05/17/94	2	DHD130A	115	2.51	78	2.33	2.33	14.74		33.48	05/18/94		31		26.9	15.4%
07/22/94	2	DHD130A	185	3.50	115	5.00	5.00	20.00		23.00	07/22/94		47		43.2	8.8%

Total Drill Time = 7.46 Hours
 Average Penetration Rate = 24.80 Feet / Hour
 Total Redrill Time = 16.22 Hours
 Average Penetration Rate = 20.22 Feet / Hour

Vertically Information
 At Full Depth = 1" North X 13" East
 S-ARC North = 19.54
 S-ARC South = 24.53

Quality Coring: None.
 Comments:

Primary Pile # 521
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (HRS)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/16/94	2	DHD130A	87	4.41				19.73			04/18/94		1.5		20.3	30.4%
06/17/94	1	XL-24	185	3.84	87	1.58	1.58	25.52		55.06	06/17/94		47		43.2	8.8%

Total Drill Time = 8.25 Hours
 Average Penetration Rate = 22.42 Feet / Hour
 Total Redrill Time = 1.58 Hours
 Average Penetration Rate = 55.06 Feet / Hour

Vertically Information
 At Full Depth = 4" North X 1.5" West
 S-ARC North = 34.43
 S-ARC South = 15.43

Quality Coring: None.
 Comments:

Secondary Pile # 522
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
09/17/94	1	DHD130A	64		1.17		54.70		10/13/93	23			14.9	53.9%					
04/02/94	1	DHD130A	63	63	5.17		12.19		04/02/94	29	2		14.7	110.7%					
05/31/94	1	DHD130A	115	64	2.00	1.08	25.50		06/01/94	31			26.9	15.4%					
08/05/94	2	DHD130A	185	115	5.97	6.08	11.73		08/08/94			47	43.2	8.8%					

Total Drill Time = 9.14 Hours
Average Penetration Rate = 20.24 Feet / Hour
Total Redrill Time = 12.33 Hours
Average Penetration Rate = 19.63 Feet / Hour

Verticality Information
At Full Depth = 2.5 South X 0° E/W
S-ARC North = 24.53
S-ARC South = 31.85

Quality Coring: None.

Comments: Connected with pile 552

Primary Pile # 523
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
04/13/94	2	DHD130A	115		6.33		18.17		04/13/94	1			26.9	30.3%					
06/14/94	1	XL-24	185	115	2.83	2.50	24.73		06/14/94	34		47	43.2	8.8%					

Total Drill Time = 9.16 Hours
Average Penetration Rate = 20.20 Feet / Hour
Total Redrill Time = 2.50 Hours
Average Penetration Rate = 46.00 Feet / Hour

Verticality Information
At Full Depth = 4" North X 10° east
S-ARC North = 15.43
S-ARC South = 35.59

Quality Coring: None.

Comments:

Secondary Pile # 524
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (HRS)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
12/09/94	2	DHD130A	60	3.50		3.50		17.14		12/09/93		34		14.0	142.7%
05/05/94	1	DHD130A	185	6.77	60	6.77	2.39	18.46	25.10	05/05/94			48	43.2	11.1%

Total Drill Time = 10.27 Hours
Average Penetration Rate = 18.01 Feet / Hour
Total Redrill Time = 2.39 Hours
Average Penetration Rate = 25.10 Feet / Hour

Verticality Information
At Full Depth = 11" North X 10" east
S-ARC North = 31.85
S-ARC South = 17.24

Quality Coring: None.

Comments:

Primary Pile # 525
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Drill (HRS)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/28/94	1	DHD130A	97	5.00		5.00		19.40		03/29/94		127		22.7	460.7%
06/28/94	1	XL-24	185	5.12	97	5.12	0.21	17.19	461.90	06/09/94			47	43.2	8.8%

Total Drill Time = 10.12 Hours
Average Penetration Rate = 18.28 Feet / Hour
Total Redrill Time = 0.21 Hours
Average Penetration Rate = 461.90 Feet / Hour

Verticality Information
At Full Depth = 7" North X 0" E/W
S-ARC North = 35.59
S-ARC South = 21.81

Quality Coring: None.

Comments:

Secondary Pile # 526
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/17/94	2	DHD130A	63	1.83			34.43			03/15/94	58			14.7	294.2%
04/21/94	1	DHD130A	185	8.83	63	3.00	13.82			04/21/94			50	43.2	15.7%

Total Drill Time = 10.66 Hours
Average Penetration Rate = 17.35 Feet / Hour
Total Redrill Time = 3.00 Hours
Average Penetration Rate = 21.00 Feet / Hour

Verticality Information
At Full Depth = 3.77 North X 0° E/W
S-ARC North = 17.24
S-ARC South = No Overlap at Full Depth, Overlap Achieved with Conforming Pile.

Quality Coring: None.

Comments:

Primary Pile # 527
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/06/94	1	DHD130A	83	3.17			26.18			04/06/94	40			19.4	106.4%
07/07/94	2	DHD130A	185	9.16	83	4.67	11.14			07/08/94			48	43.2	11.1%

Total Drill Time = 12.33 Hours
Average Penetration Rate = 15.00 Feet / Hour
Total Redrill Time = 4.67 Hours
Average Penetration Rate = 17.77 Feet / Hour

Verticality Information
At Full Depth = 5.5° South X 12.75° West
S-ARC North = 21.81
S-ARC South = 25.55

Quality Coring: None.

Comments:

Secondary Pile # 528
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/19/94	2	DHD130A	65	1.58			41.14			03/19/94	42			15.2	176.7%
05/03/94	1	DHD130A	185	9.62	65	2.08	12.47			05/03/94			48	43.2	11.1%

Total Drill Time = 11.20 Hours
Average Penetration Rate = 16.52 Feet / Hour
Total Redrill Time = 2.08 Hours
Average Penetration Rate = 31.25 Feet / Hour

Verticality Information
At Full Depth = 4.75 South X 4" West
S-ARC North =
S-ARC South = 32.92

Quality Coring: None.

Comments:

Primary Pile # 529
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/11/94	2	DHD130A	81	3.83			21.15			04/11/94	32			18.9	69.2%
06/20/94	1	XL-24	185	3.58	81	2.08	29.05			06/21/94			47	43.2	8.8%

Total Drill Time = 7.41 Hours
Average Penetration Rate = 24.97 Feet / Hour
Total Redrill Time = 2.08 Hours
Average Penetration Rate = 38.94 Feet / Hour

Verticality Information
At Full Depth = 0°N/S X 3" West
S-ARC North = 25.55
S-ARC South = 35.33

Quality Coring: None.

Comments:

Secondary Pile # 530
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/21/94	2	DHD130A	64	1.08		59.26	03/21/94	40			14.9	167.6%
05/09/94	1	XL-24	185	4.68	1.00	25.85	05/10/94			49	43.2	13.4%

Total Drill Time = 5.76 Hours
Average Penetration Rate = 32.12 Feet / Hour

Total Redrill Time = 1.00 Hours
Average Penetration Rate = 64.00 Feet / Hour

Verticality Information

At Full Depth = 8.25' North X 4" East
S-ARC North = 2.92
S-ARC South = No Overlap at Full Depth, Overlap Achieved with Conforming Pile

Quality Coring: None.

Comments:

Primary Pile # 531
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/08/94	2	DHD130A	85	3.92		21.68	04/08/94	100			19.8	413.9%
06/07/94	1	DHD130A	185	6.92	4.67	14.45	06/07/94			47	43.2	8.8%

Total Drill Time = 10.84 Hours
Average Penetration Rate = 17.07 Feet / Hour

Total Redrill Time = 4.67 Hours
Average Penetration Rate = 18.20 Feet / Hour

Verticality Information

At Full Depth = 2.5' South X 4" West
S-ARC North = 5.33
S-ARC South = 3.94

Quality Coring: None.

Comments:

Secondary Pile # 532
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/23/94	1	DHD130A	64		1.17		54.70		03/23/94	20			14.9	33.8%
05/16/94	2	DHD130A	85	64	1.35	3.06	15.56		05/16/94		24		19.8	20.9%
07/01/94	1	XL-24	185	85	2.75	2.67	36.36		07/05/94			48	43.2	11.1%

Total Drill Time = 5.27 Hours
Average Penetration Rate = 22.96 Feet / Hour

Total Redrill Time = 5.73 Hours
Average Penetration Rate = 26.00 Feet / Hour

Verticality Information
At Full Depth = 3.5" North X 8" West
S-ARC North =
S-ARC South = 28.15

Quality Coring: None.
Comments:

Primary Pile # 533
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/14/94	2	DHD130A	83		3.75		22.13		04/14/94	25			19.4	34.1%
05/27/94	1	XL-24	185	83	4.08	1.67	25.00		05/27/94		1	48	43.2	11.1%

Total Drill Time = 7.83 Hours
Average Penetration Rate = 13.03 Feet / Hour

Total Redrill Time = 1.67 Hours
Average Penetration Rate = 49.70 Feet / Hour

Verticality Information
At Full Depth = 5" North X 3.25" West
S-ARC North = 33.94
S-ARC South = 28.82

Quality Coring: None.
Comments:

Secondary Pile # 534
Area "B"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/29/94	1	DHD130A	64		64	1.50		42.67		03/29/94	44	2		14.9	207.8%
05/16/94	1	DHD130A	95	64	95	1.70	2.80	18.24	22.86	05/17/94		27.5		22.2	24.0%
07/19/94	2	DHD130A	185	95	185	3.17	5.50	28.39	17.27	07/19/94			47	43.2	8.8%

Total Drill Time = 6.37 Hours
Average Penetration Rate = 19.00 Feet / Hour

Total Redrill Time = 8.30 Hours
Average Penetration Rate = 19.16 Feet / Hour

Verticality Information
At Full Depth = 6.5" North X 3.5" West
S-ARC North = 28.15
S-ARC South = 24.21

Quality Coring: None.
Comments:

Primary Pile # 535
Area "B"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/19/94	1	DHD130A	108		108	4.33		24.94		04/19/94	27	8		25.2	38.8%
05/24/94	1	XL-24	185	108	185	3.42	2.25	22.51	48.00	05/25/94			47	43.2	8.8%

Total Drill Time = 7.75 Hours
Average Penetration Rate = 9.94 Feet / Hour

Total Redrill Time = 2.25 Hours
Average Penetration Rate = 48.00 Feet / Hour

Verticality Information
At Full Depth = 5" North X 7" West
S-ARC North = 28.82
S-ARC South = 12.12

Quality Coring: None.
Comments:

Secondary Pile # 536
Area "B"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
03/30/94	1	DHD130A	62		62	1.58		39.24		03/30/94	30			14.5	107.2%
05/11/94	2	DHD130A	100		62	1.87	2.21	20.32	28.05	05/13/94		32		23.4	37.0%
07/20/94	2	DHD130A	185		100	9.08	7.00	9.36	14.29	07/21/94		47		43.2	8.8%

Total Drill Time = 12.53 Hours
Average Penetration Rate = 9.82 Feet / Hour
Total Redrill Time = 9.21 Hours
Average Penetration Rate = 17.59 Feet / Hour

Verticality Information
At Full Depth = 1.75" South X 1.25" East
S-ARC North = 24.21
S-ARC South = 27.76

Quality Coring: None.

Comments: Contractor reported that an additional 35 cy of grout went into this hole, this grout however was used top to off several piles and is not included above.

Primary Pile # 537
Area "B"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
04/27/94	1	DHD130A	94		94	4.33		21.71		04/28/94	30	7		22.0	68.6%
06/02/94	1	XL-24	185		94	3.00	2.25	30.33	41.78	06/03/94		47		43.2	8.8%

Total Drill Time = 7.33 Hours
Average Penetration Rate = 12.41 Feet / Hour
Total Redrill Time = 2.25 Hours
Average Penetration Rate = 41.78 Feet / Hour

Verticality Information
At Full Depth = 1" South X 0" E/W
S-ARC North = 12.12
S-ARC South = 30.80

Quality Coring: None.

Comments:

Secondary Pile # 538
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/26/94	1	DHD130A	62		1.75		35.43			03/28/94	30	2		14.5	121.0%
05/17/94	2	DHD130A	110	62	2.03	1.72	23.65		36.05	05/18/94		31		25.7	20.7%
07/30/94	2	XL-24	185	110	3.00	3.72	25.00		29.57	08/01/94			49	43.2	13.4%

Total Drill Time = 6.78 Hours
 Average Penetration Rate = 18.14 Feet / Hour
 Total Redrill Time = 5.44 Hours
 Average Penetration Rate = 31.62 Feet / Hour

Verticality Information
 At Full Depth = 2" North X 0" E/W
 S-ARC North = 27.76
 S-ARC South = 25.29

Quality Coring: None.

Comments:

Primary Pile # 539
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/21/94	1	DHD130A	116		2.83		40.99			04/22/94	30			27.1	10.7%
06/24/94	1	XL-24	185	116	3.58	1.25	19.27		92.80	06/04/94			47	43.2	8.8%

Total Drill Time = 6.41 Hours
 Average Penetration Rate = 10.76 Feet / Hour
 Total Redrill Time = 1.25 Hours
 Average Penetration Rate = 92.80 Feet / Hour

Verticality Information
 At Full Depth = 1" North X 1" West
 S-ARC North = 30.80
 S-ARC South = 29.12

Quality Coring: None.

Comments:

Secondary Pile #540
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Pig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Drill (FT / HR)						
03/24/94	1	DHD130A	65	65	1.93		33.68			03/24/94	20	2.2		15.2	46.3%
05/31/94	1	DHD130A	110	65	1.70		26.47	1.80		06/01/94		29		25.7	12.9%
07/25/94	2	XL-24	185	110	7.79		9.63	5.00		07/26/94			53	43.2	22.7%

Total Drill Time = 11.42 Hours
Average Penetration Rate = 16.20 Feet / Hour

Total Redrill Time = 6.80 Hours
Average Penetration Rate = 25.74 Feet / Hour

Verticality Information
At Full Depth = 2.75" North X 0" East / West
S-ARC North = 29.12"
S-ARC South = 22.60"

Quality Coring: None.

Comments:

Primary Pile #541
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Pig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Drill (FT / HR)						
04/18/94	1	DHD130A	110	110	5.42		20.30			04/18/94	35			25.7	36.3%
06/21/94	1	DHD130A	185	110	4.95		15.15	1.25		06/22/94			55	43.2	27.3%

Total Drill Time = 10.37 Hours
Average Penetration Rate = 17.84 Feet / Hour

Total Redrill Time = 1.25 Hours
Average Penetration Rate = 88.00 Feet / Hour

Verticality Information
At Full Depth = 0" North / South X 0" East / West
S-ARC North = 22.60"
S-ARC South = 36.62"

Quality Coring: None.

Comments:

Secondary Pile #542
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/22/94	1	DHD130A	63	2.25			28.00		03/22/94	30			14.7	103.9%
05/11/94	2	DHD130A	110	1.42	63	3.25	33.10	19.38	05/12/94	25	6		25.7	20.7%
06/16/94	1	DHD130A	110		110	3.75		29.33	06/17/94		31		25.7	20.7%
07/28/94	2	XL-24	185	2.75	110	6.75	27.27	16.30	07/29/94			48	43.2	11.1%

Total Drill Time = 6.42 Hours
Average Penetration Rate = 28.82 Feet / Hour
Total Redrill Time = 13.75 Hours
Average Penetration Rate = 20.58 Feet / Hour

Verticality Information
At Full Depth = 8.0° North X 2.0° West
S-ARC North = 36.62°
S-ARC South = 16.73°

Quality Coring: None.

Comments:

Primary Pile #543
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/05/94	2	DHD130A	123	4.40			27.95		04/06/94	45	1.0		28.7	60.2%
06/14/94	1	XL-24	185	2.50	123	2.42	24.80	50.83	06/14/94			49	43.2	13.4%

Total Drill Time = 6.90 Hours
Average Penetration Rate = 26.81 Feet / Hour
Total Redrill Time = 2.42 Hours
Average Penetration Rate = 50.83 Feet / Hour

Verticality Information
At Full Depth = 2.5° North X 3.25° East
S-ARC North = 16.73°
S-ARC South = 29.96°

Quality Coring: None.

Comments:

Secondary Pile #544
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
03/18/94	2	DHD130A	64		2.75		23.27		03/18/94	50			14.9	234.6%
05/05/94	1	XL-24	185	64	3.83	1.00	31.59	64.00	05/05/94			50	43.2	15.7%

Total Drill Time = 6.58 Hours
Average Penetration Rate = 28.12 Feet / Hour

Total Redrill Time = 1.00 Hours
Average Penetration Rate = 64.00 Feet / Hour

Vertically Information
At Full Depth = 2.75" North X 5.5" East
S-ARC North = 29.96"
S-ARC South =

Quality Coring: None.

Comments:

Primary Pile #545
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
03/29/94	1	DHD130A	98		3.33		29.43		03/30/94	53			22.9	131.6%
07/05/95	2	DHD130A	185	98	5.87	4.73	14.82	20.72	07/07/94			47	43.2	8.8%

Total Drill Time = 9.20 Hours
Average Penetration Rate = 20.11 Feet / Hour

Total Redrill Time = 4.73 Hours
Average Penetration Rate = 20.72 Feet / Hour

Vertically Information
At Full Depth = 10" South X 6.5" West
S-ARC North =
S-ARC South = 36.88"

Quality Coring: None.

Comments:

Secondary Pile #546
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/16/94	1	DHD130A	61	2.25		27.11			03/16/94	45			14.2	215.9%
04/29/94	1	XL-24	185	4.08	61	30.39	1.17	52.14	04/29/94			51	43.2	18.1%

Total Drill Time = 6.33 Hours
 Average Penetration Rate = 29.23 Feet / Hour
 Total Redrill Time = 1.17 Hours
 Average Penetration Rate = 52.14 Feet / Hour

Verticality Information
 At Full Depth = 0° North / South X 1.0° East
 S-ARC North = 36.88°
 S-ARC South = 31.04°

Quality Coring: None.

Comments:

Primary Pile #547
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/11/94	2	DHD130A	95	4.58		20.74			04/12/94	38			22.2	71.3%
05/18/94	2	XL-24	186	3.08	95	29.55	2.17	43.78	05/19/94			49	43.4	12.8%

Total Drill Time = 7.66 Hours
 Average Penetration Rate = 24.28 Feet / Hour
 Total Redrill Time = 2.17 Hours
 Average Penetration Rate = 43.78 Feet / Hour

Verticality Information
 At Full Depth = 3.5° North X 2.5° West
 S-ARC North = 31.04°
 S-ARC South = 22.99°

Quality Coring: None.

Comments: 115' of tremie pipe left in hole. Was hung at bottom of hole due to fast setting concrete.

Secondary Pile #548
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
12/16/93	2	DHD130A	54		3.00		18.00		12/16/93	54	48		12.6	708.9%
04/02/94	1	DHD130A	65	54	0.25	3.33	44.00	16.22	04/02/94	24	1.4		15.2	67.3%
05/03/94	1	DHD130A	185	65	8.09	1.18	14.83	55.08	05/03/94			48	43.2	11.1%

Total Drill Time = 11.34 Hours
 Average Penetration Rate = 16.31 Feet / Hour
 Total Redrill Time = 4.51 Hours
 Average Penetration Rate = 26.39 Feet / Hour

Verticality Information
 At Full Depth = 1.0° North X 1.5° West
 S-ARC North = 22.99°
 S-ARC South = 27.05°

Quality Coring: None.

Comments:

Primary Pile #549
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/15/94	2	DHD130A	112		5.33		21.01		04/15/94	40			26.2	52.9%
06/01/94	1	XL-24	185	112	2.83	2.42	25.80	46.28	06/03/94			48	43.2	11.1%

Total Drill Time = 8.16 Hours
 Average Penetration Rate = 22.67 Feet / Hour
 Total Redrill Time = 2.42 Hours
 Average Penetration Rate = 46.28 Feet / Hour

Verticality Information
 At Full Depth = 1.25° North X 0° East / West
 S-ARC North = 27.05°
 S-ARC South = 24.93°

Quality Coring: None.

Comments:

Secondary Pile #550
Area "B"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/19/93	1	XL-24	64		64	0.92		69.57		10/19/93		25		14.9	67.3%
11/06/93	1	DHD130A	52	64	64	3.25		19.69		11/30/93		38		12.1	212.9%
03/25/94	1	DHD130A	65	52	52	2.42		21.49		03/25/94	20	2.2		15.2	46.3%
04/22/94	1	DHD130A	63	65	65	1.00		65.00		04/22/94		27		14.7	83.5%
05/13/94	1	DHD130A	120	63	63	3.83		27.40		05/13/94		32		28.0	14.2%
06/28/94	1	XL-24	185	120	120	3.25		20.00		06/28/94		47		43.2	8.8%

Total Drill Time = 6.25 Hours
 Average Penetration Rate = 29.60 Feet / Hour
 Total Redrill Time = 13.25 Hours
 Average Penetration Rate = 27.47 Feet / Hour

Verticality Information
 At Full Depth = 0° North / South X 0° East / West
 S-ARC North = 24.93"
 S-ARC South = 26.76"

Quality Coring: None.

Comments:

Primary Pile #551
Area "B"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/13/94	2	DHD130A	123		123	5.34		23.03		04/13/94		40		28.7	39.3%
05/24/94	1	XL-24	185	123	123	2.92		21.23		05/26/94		48		43.2	11.1%

Total Drill Time = 8.26 Hours
 Average Penetration Rate = 22.40 Feet / Hour
 Total Redrill Time = 2.75 Hours
 Average Penetration Rate = 44.73 Feet / Hour

Verticality Information
 At Full Depth = 0° North / South X 0° East / West
 S-ARC North = 26.76"
 S-ARC South = 20.22"

Quality Coring: None.

Comments:

Secondary Pile #552
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)		Penetration Rate (FT / HR)		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
09/17/93	1	DHD130A	65	1.33		48.87		10/13/94		18		15.2	18.6%
03/14/94	1	DHD130A	65	2.00	2.50	22.50	26.00	03/14/94	42			15.2	176.7%
05/16/94	2	DHD130A	110	2.27	2.92	33.04	22.26	05/17/94		31.5		25.7	22.6%
07/13/94	1	XL-24	185	2.27	4.26		25.82	07/14/94			47.5	43.2	10.0%

Total Drill Time = 5.60 Hours
 Average Penetration Rate = 33.04 Feet / Hour
 Total Redrill Time = 9.68 Hours
 Average Penetration Rate = 24.79 Feet / Hour

Verticality Information
 At Full Depth = 4.0° South X 3.0° West
 S-ARC North = 20.22°
 S-ARC South = 30.73°

Quality Coring: None.

Comments:

Primary Pile #553
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)		Penetration Rate (FT / HR)		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/07/94	2	DHD130A	103	3.67	2.92	28.07	35.27	04/09/94	164		2.8	24.1	583.5%
08/20/94	1	XL-24	185	3.67	103	22.34	35.27	06/20/94			48	43.2	11.1%

Total Drill Time = 7.34 Hours
 Average Penetration Rate = 25.20 Feet / Hour
 Total Redrill Time = 2.92 Hours
 Average Penetration Rate = 35.27 Feet / Hour

Verticality Information
 At Full Depth = 1.0° South X 2.0° West
 S-ARC North = 30.73°
 S-ARC South = 23.90°

Quality Coring: None.

Comments:

Secondary Pile #554
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/18/94	1	XL-24	62		1.58		39.24		03/18/94	25			14.5	72.7%
05/18/94	2	DHD130A	105	62	0.87	1.13	49.43	54.87	05/19/94		32		24.5	30.5%
07/11/94	1	DHD130A	185	105	3.83	3.75	20.89	28.00	07/12/94			48	43.2	11.1%

Total Drill Time = 6.28 Hours
Average Penetration Rate = 29.46 Feet / Hour

Total Redrill Time = 4.88 Hours
Average Penetration Rate = 34.22 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 10° East
S--ARC North = 23.90"
S--ARC South = 22.71"

Quality Coring: None.

Comments:

Primary Pile #555
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/18/94	1	DHD130A	105		3.83		27.42		04/19/94	100	8		24.5	340.5%
05/05/94	1	DHD130A	105	105	2.42	2.17	43.39	48.39	05/05/94	35	6		24.5	67.2%
05/27/94	1	DHD130A	185	105	3.33	2.17	24.02	48.39	05/27/94			51.5	43.2	19.2%

Total Drill Time = 7.16 Hours
Average Penetration Rate = 25.84 Feet / Hour

Total Redrill Time = 4.59 Hours
Average Penetration Rate = 45.75 Feet / Hour

Verticality Information
At Full Depth = 0.75° South X 0° East / West
S--ARC North = 22.71"
S--ARC South = 14.24"

Quality Coring: None.

Comments:

Secondary Pile #556
Area "B"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/17/94	1	DHD130A	64	64	1.00		64.00		03/17/94	45			14.9	201.1%
05/17/94	1	DHD130A	100	64	1.13	1.95	31.86	32.82	05/18/94		29.5		23.4	26.3%
06/30/94	1	XL-24	185	100	2.75	3.33	30.91	30.03	07/01/94			47	43.2	8.8%

Total Drill Time = 4.88 Hours
Average Penetration Rate = 37.91 Feet / Hour

Total Redrill Time = 5.28 Hours
Average Penetration Rate = 31.06 Feet / Hour

Vertically Information
At Full Depth = 7.0' South X 7.0' West
S-ARC North = 14.24"
S-ARC South = 31.14"

Quality Coring: None.

Comments:

Primary Pile #557
Area "B"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/27/94	1	DHD130A	94	94	3.34		28.14		04/28/94	55	9		22.0	191.6%
06/08/94	1	XL-24	185	94	3.08	2.17	29.55	43.32	06/09/94			50	43.2	15.7%

Total Drill Time = 6.42 Hours
Average Penetration Rate = 28.82 Feet / Hour

Total Redrill Time = 2.17 Hours
Average Penetration Rate = 43.32 Feet / Hour

Vertically Information
At Full Depth = 3.5' South X 10' West
S-ARC North = 31.14"
S-ARC South = 20.14"

Quality Coring: None.

Comments:

Secondary Pile #558
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/21/94	1	DHD130A	65		1.25		52.00		03/21/94	20			15.2	31.8%
05/10/94	2	DHD130A	95	65	1.36	1.02	22.06	63.73	05/11/94	30	3.5		22.2	51.0%
05/25/94	2	DHD130A	185	95	8.09	1.33	11.12	71.43	05/25/94			52.5	43.2	21.5%

Total Drill Time = 10.70 Hours
Average Penetration Rate = 17.29 Feet / Hour
Total Redrill Time = 2.35 Hours
Average Penetration Rate = 68.09 Feet / Hour

Verticality Information
At Full Depth = 7.0° South X 3.75° West
S-ARC North = 20.14°
S-ARC South = 37.78°

Quality Coring: None.

Comments:

Primary Pile #559
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/21/94	1	DHD130A	95		2.53		37.55		04/21/94	45			22.2	102.8%
06/28/94	1	XL-24	185	95	3.17	2.00	28.39	47.50	06/29/94			47	43.2	8.8%

Total Drill Time = 5.70 Hours
Average Penetration Rate = 32.46 Feet / Hour
Total Redrill Time = 2.00 Hours
Average Penetration Rate = 47.50 Feet / Hour

Verticality Information
At Full Depth = 2.0° North X 2.0° West
S-ARC North = 37.78°
S-ARC South = 19.33°

Quality Coring: None.

Comments:

Secondary Pile #560
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/23/94	1	DHD130A	62		1.17		52.99		03/24/94	20	2.2		14.5	53.3%
06/03/94	2	DHD130A	100	62	1.92	1.67	19.79	37.13	06/07/94	25	2		23.4	15.6%
06/16/94	1	DHD130A	95	100	3.92	1.30	21.68	76.92	06/17/94	30	30		22.2	35.2%
07/18/94	1	XL-24	185	100				30.03	07/19/94			48	43.2	11.1%

Total Drill Time = 7.01 Hours
Average Penetration Rate = 25.68 Feet / Hour
Total Redrill Time = 6.30 Hours
Average Penetration Rate = 41.59 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 10° East
S--ARC North = 19.33"
S--ARC South = 19.91"

Quality Coring: None.
Comments:

Primary Pile #561
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/15/94	2	DHD130A	104		4.00		26.00		04/15/94	30	2.9		24.3	35.5%
06/24/94	1	XL-24	185	104	3.25	2.00	24.92	52.00	06/27/94			47	43.2	8.8%

Total Drill Time = 7.25 Hours
Average Penetration Rate = 25.52 Feet / Hour
Total Redrill Time = 2.00 Hours
Average Penetration Rate = 52.00 Feet / Hour

Verticality Information
At Full Depth = 2.5° South X 0° East / West
S--ARC North = 19.91"
S--ARC South = 23.62"

Quality Coring: None.
Comments:

Secondary Pile #562
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/22/94	1	DHD130A	63		1.75		36.00		03/22/94	20			14.7	35.9%
06/10/94	2	DHD130A	100	63	1.67	2.00	22.16	31.50	06/13/94		43		23.4	84.1%
07/13/94	1	XL-24	185	100	3.67	3.58	23.16	27.93	07/14/94			47	43.2	8.8%

Total Drill Time = 7.09 Hours
Average Penetration Rate = 26.09 Feet / Hour

Total Redrill Time = 5.58 Hours
Average Penetration Rate = 29.21 Feet / Hour

Verticality Information
At Full Depth = 4.5° South X 2.5° East
S-ARC North = 23.62"
S-ARC South = 22.13"

Quality Coring: None.

Comments:

Primary Pile #563
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/09/94	2	DHD130A	96		3.00		32.00		04/09/94	60			22.4	167.6%
06/21/94	1	XL-24	185	96	3.35	1.73	26.57	55.49	06/22/94			47	43.2	8.8%

Total Drill Time = 6.35 Hours
Average Penetration Rate = 29.13 Feet / Hour

Total Redrill Time = 1.73 Hours
Average Penetration Rate = 55.49 Feet / Hour

Verticality Information
At Full Depth = 6.0° South X 6.5° West
S-ARC North = 22.13"
S-ARC South = 22.26"

Quality Coring: None.

Comments:

Secondary Pile #564
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
03/17/94	1	DHD130A	65		1.33		48.87		03/17/94	20			15.2	31.8%
05/31/94	1	DHD130A	96	65	0.83	1.80	37.35	36.11	06/01/94		28		22.4	24.9%
07/05/94	1	XL-24	185	96	2.58	2.92	34.50	32.88	07/05/94			47	43.2	8.8%

Total Drill Time = 4.74 Hours
 Average Penetration Rate = 39.03 Feet / Hour
 Total Redrill Time = 4.72 Hours
 Average Penetration Rate = 34.11 Feet / Hour

Verticality Information
 At Full Depth = 7.75° South X 1.5° East
 S-ARC North = 22.28"
 S-ARC South = 21.41"

Quality Coring: None.

Comments:

Primary Pile #565
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
03/29/94	1	DHD130A	97		2.67		36.33		03/29/94	92			22.7	306.2%
06/23/94	1	XL-24	185	97	2.83	2.75	31.10	35.27	06/24/94			47	43.2	8.8%

Total Drill Time = 5.50 Hours
 Average Penetration Rate = 33.64 Feet / Hour
 Total Redrill Time = 2.75 Hours
 Average Penetration Rate = 35.27 Feet / Hour

Verticality Information
 At Full Depth = 11° South X 2.0° West
 S-ARC North = 21.41"
 S-ARC South = 18.94"

Quality Coring: None.

Comments:

Secondary Pile #566
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/21/94	1	DHD130A	65		1.25		52.00		03/21/94	18			15.2	18.6%
04/28/94	1	XL-24	185	65	8.17	1.00	14.69	65.00	04/28/94	80			43.2	85.2%
05/12/94	2	DHD130A	185	185		5.00		37.00	05/13/94		61		43.2	41.2%

Total Drill Time = 9.42 Hours
Average Penetration Rate = 19.64 Feet / Hour

Total Redrill Time = 6.00 Hours
Average Penetration Rate = 41.67 Feet / Hour

Verticality Information
At Full Depth = 15° South X 9.0° West
S--ARC North = 18.94"
S--ARC South = 38.13"

Quality Coring: None.

Comments:

Primary Pile #567
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/05/94	2	DHD130A	99		3.33		29.73		04/05/94	30	2.9		23.1	42.3%
06/15/94	1	XL-24	185	99	3.25	2.17	26.46	45.62	06/15/94		47		43.2	8.8%

Total Drill Time = 6.58 Hours
Average Penetration Rate = 28.12 Feet / Hour

Total Redrill Time = 2.17 Hours
Average Penetration Rate = 45.62 Feet / Hour

Verticality Information
At Full Depth = 4.0° South X 2.0° West
S--ARC North = 38.13"
S--ARC South = 24.72"

Quality Coring: None.

Comments:

Secondary Pile #568
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/16/94	1	DHD130A	64	1.33	48.12	26.89	23	03/16/94				14.9	53.9%
05/16/94	2	DHD130A	100	0.28	128.57	2.38	28	05/17/94				23.4	19.9%
07/26/94	2	DHD130A	185	7.58	11.21	1.67		07/27/94			47.5	43.2	10.0%

Total Drill Time = 9.19 Hours
 Average Penetration Rate = 20.13 Feet / Hour
 Total Redrill Time = 4.05 Hours
 Average Penetration Rate = 40.49 Feet / Hour

Verticality Information
 At Full Depth = 5.0° South X 2.5° East
 S-ARC North = 24.72°
 S-ARC South = 24.72°

Quality Coring: None.

Comments:

Primary Pile #569
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/01/94	2	DHD130A	98	5.25	18.67	5.58	45	04/01/94				22.9	96.6%
05/31/94	2	DHD130A	165	5.33	16.32	17.56		05/31/94			50	43.2	15.7%

Total Drill Time = 10.58 Hours
 Average Penetration Rate = 17.49 Feet / Hour
 Total Redrill Time = 5.58 Hours
 Average Penetration Rate = 17.56 Feet / Hour

Verticality Information
 At Full Depth = 6.0° South X 7.0° East
 S-ARC North = 24.72°
 S-ARC South = 32.02°

Quality Coring: None.

Comments:

Secondary Pile #570
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
12/06/94	1	DHD130A	94		2.67		35.21		12/06/93		72		22.0	228.0%	
08/04/94	1	XL-24	185	94	2.92	3.07	31.16	30.62	08/05/94			49.5	43.2	14.6%	

Total Drill Time = 5.59 Hours
Average Penetration Rate = 33.09 Feet / Hour

Total Redrill Time = 3.07 Hours
Average Penetration Rate = 30.62 Feet / Hour

Verticality Information
At Full Depth = 2.0° South X 7.5° East
S--ARC North = 32.02°
S--ARC South = 27.82°

Quality Coring: None.

Comments:

Primary Pile #571
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)							
04/12/94	2	DHD130A	96		5.00		19.20		04/12/94		1.0		22.4	60.6%	
06/27/94	1	XL-24	185	96	3.65	2.07	24.38	46.38	06/28/94			47	43.2	8.8%	

Total Drill Time = 8.65 Hours
Average Penetration Rate = 21.39 Feet / Hour

Total Redrill Time = 2.07 Hours
Average Penetration Rate = 46.38 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 0° East / West
S--ARC North = 27.82°
S--ARC South = 39.10°

Quality Coring: None.

Comments:

Secondary Pile #572
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
12/14/93	2	DHD130A	90		3.08		12/18/93		61		21.0	190.2%
03/14/94	1	DHD130A	41	90	2.08	43.27	03/15/94	45			9.6	370.0%
05/10/94	1	XL-24	215	90	1.67	53.89	05/10/94			63	50.2	25.5%

Total Drill Time = 8.08 Hours
Average Penetration Rate = 20.54 Feet / Hour

Total Redrill Time = 3.75 Hours
Average Penetration Rate = 48.00 Feet / Hour

Verticality Information
At Full Depth = 12.0° North X 7.0° East
S-ARC North = 39.10"
S-ARC South = 14.71"

Quality Coring: None.

Comments: Drilled extra 30' because of shale strata

Primary Pile #573
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
04/06/94	2	DHD130A	98		3.42		04/06/93				22.9	74.8%
06/22/94	1	DHD130A	185	98	3.00	45.16	06/23/94	40		48	43.2	11.1%

Total Drill Time = 6.42 Hours
Average Penetration Rate = 28.82 Feet / Hour

Total Redrill Time = 2.17 Hours
Average Penetration Rate = 45.16 Feet / Hour

Verticality Information
At Full Depth = 8.0° North X 6.0° West
S-ARC North = 14.71"
S-ARC South = 0.39"

Quality Coring: None.

Comments:

Secondary Pile #574
Area "B"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Penetration Rate		Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)							
03/18/94	1	DHD130A	65		65	2.00		32.50			03/18/94	22			15.2	44.9%
05/17/94	2	DHD130A	100		65	1.67	1.92	20.96	33.85		05/18/94		31		23.4	32.8%
07/28/94	2	XL-24	185		100	3.42	3.67	24.85	27.25		04/29/94			50	43.2	15.7%

Total Drill Time = 7.09 Hours
Average Penetration Rate = 26.09 Feet / Hour

Total Redrill Time = 5.59 Hours
Average Penetration Rate = 29.52 Feet / Hour

Verticality Information
At Full Depth = 1.5" North X 9.0" East
S-ARC North = 0.39"
S-ARC South = 23.63"

Quality Coring: None.

Comments:

Primary Pile #575
Area "B"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Penetration Rate		Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)							
04/13/94	2	DHD130A	99		99	3.08	2.17	32.14	45.62		04/14/94	50	2.9		23.1	128.8%
06/24/94	1	XL-24	185		99	2.75	2.17	31.27	45.62		06/27/94			48.5	43.2	12.3%

Total Drill Time = 5.83 Hours
Average Penetration Rate = 31.73 Feet / Hour

Total Redrill Time = 2.17 Hours
Average Penetration Rate = 45.62 Feet / Hour

Verticality Information
At Full Depth = 1.0" North X 0" East / West
S-ARC North = 23.63"
S-ARC South = 27.00"

Quality Coring: None.

Comments:

Secondary Pile #576
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/26/94	1	DHD130A	62		1.65		37.58		03/26/94	20			14.5	38.1%
05/11/94	2	DHD130A	100	62	1.85	1.32	20.54	46.97	05/12/94	30	4.5		23.4	47.7%
05/25/94	2	DHD130A	185	100	6.00	2.33	14.17	42.92	05/26/94			52	43.2	20.4%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 19.47 Feet / Hour

Total Redrill Time = 3.65 Hours
Average Penetration Rate = 44.38 Feet / Hour

Verticality Information
At Full Depth = 1.5" North X 4.0" East
S-ARC North = 27.00"
S-ARC South = 17.67"

Quality Coring: None.

Comments:

Primary Pile #577
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/08/94	2	DHD130A	87		2.42		35.95		04/08/94	52.5			20.3	158.4%
07/08/94	1	XL-24	185	87	3.88	1.87	25.26	46.52	07/11/94			49.5	43.2	14.6%

Total Drill Time = 6.30 Hours
Average Penetration Rate = 29.37 Feet / Hour

Total Redrill Time = 1.87 Hours
Average Penetration Rate = 46.52 Feet / Hour

Verticality Information
At Full Depth = 4.5" South X 4.25" East
S-ARC North = 17.67"
S-ARC South = 26.22"

Quality Coring: None.

Comments:

Secondary Pile #578
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/16/94	1	DHD130A	65	1.67		38.92		03/16/94	20			15.2	31.8%
06/13/94	2	DHD130A	100	1.69	2.06	20.71	31.55	06/13/94		30		23.4	28.5%
08/01/94	1	XL-24	185	3.23	3.27	26.32	30.58	08/03/94			48	43.2	11.1%

Total Drill Time = 6.59 Hours
Average Penetration Rate = 28.07 Feet / Hour

Total Redrill Time = 5.33 Hours
Average Penetration Rate = 30.96 Feet / Hour

Verticality Information
At Full Depth = 3.75" South X 9.75" East
S-ARC North = 26.22"
S-ARC South = 28.47"

Quality Coring: None.

Comments:

Primary Pile #579
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/20/94	2	DHD130A	101	3.92		25.77		05/24/94	100		5.8	23.6	348.6%
06/30/94	1	XL-24	185	3.32	2.02	25.30	50.00	07/01/94			50	43.2	15.7%

Total Drill Time = 7.24 Hours
Average Penetration Rate = 25.55 Feet / Hour

Total Redrill Time = 2.02 Hours
Average Penetration Rate = 50.00 Feet / Hour

Verticality Information
At Full Depth = 2.5" North X 4.5" West
S-ARC North = 28.47"
S-ARC South = 16.67"

Quality Coring: None.

Comments:

Secondary Pile #580
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)						
10/19/93	1	XL-24	45		1.45		31.03		10/19/93	13			10.5	23.7%
04/23/94	1	DHD130A	65	45	0.67	2.42	29.85	18.60	04/25/94	20	2.1		15.2	45.6%
06/14/94	2	DHD130A	105	65	1.43	1.40	27.97	46.43	06/15/94		31		24.5	26.4%
08/08/94	1	XL-24	185	105	3.42	3.42	23.39	30.70	08/09/94		48		43.2	11.1%

Total Drill Time = 6.97 Hours
Average Penetration Rate = 26.54 Feet / Hour

Total Redrill Time = 7.24 Hours
Average Penetration Rate = 29.70 Feet / Hour

Verticality Information
At Full Depth = 1.75" South X 5.5" East
S-ARC North = 16.67"
S-ARC South = 21.76"

Quality Coring: None.

Comments:

Primary Pile #581
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION				
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)						
06/02/94	2	DHD130A	103		4.75		21.68		06/02/94	45	6.0		24.1	112.0%
07/06/94	1	XL-24	185	103	4.97	2.37	16.50	43.46	07/07/94		55		43.2	27.3%

Total Drill Time = 9.72 Hours
Average Penetration Rate = 19.03 Feet / Hour

Total Redrill Time = 2.37 Hours
Average Penetration Rate = 43.46 Feet / Hour

Verticality Information
At Full Depth = 5.0" South X 6.0" East
S-ARC North = 21.76"
S-ARC South = 30.02"

Quality Coring: None.

Comments:

Secondary Pile #582
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Redrill (FT / HR)						
09/17/93	1	DHD130A	124	124	6.25		19.84			10/13/93		89		29.0	207.4%
10/22/93	2	240	51	124		2.25				12/10/93		65.5		11.9	450.0%
06/16/94	2	DHD130A	124	51		4.00				06/16/94		35		29.0	20.9%
08/12/94	1	XL-24	185	124	2.92	4.83	20.89	25.67		08/16/94		47.5		43.2	10.0%

Total Drill Time = 9.17 Hours
 Average Penetration Rate = 20.17 Feet / Hour
 Total Redrill Time = 11.08 Hours
 Average Penetration Rate = 26.99 Feet / Hour
 Verticality Information
 At Full Depth = 2.0° South X 1.5° East
 S-ARC North = 30.02"
 S-ARC South = 26.71"

Quality Coring: None.

Comments: Clam in hole approx. 54' deep. (09/17/93)
 12/10/93 Piles # 582 - 586 were connected, so when one pile was poured they both filled with concrete.

Primary Pile #583
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Redrill (FT / HR)						
04/14/94	2	DHD130A	54	54	2.42		22.31			04/14/94		15.5		12.6	22.9%
06/09/94	2	DHD130A	105	54	2.49	2.43	20.48	22.22		06/09/94	30	2		24.5	30.5%
07/11/94	1	DHD130A	185	105	6.17	4.00	12.97	26.25		07/12/94		48.5		43.2	12.3%

Total Drill Time = 11.08 Hours
 Average Penetration Rate = 16.70 Feet / Hour
 Total Redrill Time = 6.43 Hours
 Average Penetration Rate = 24.73 Feet / Hour

Verticality Information
 At Full Depth = 2.0° South X 0° East / West
 S-ARC North = 26.71"
 S-ARC South = 28.69"

Quality Coring: None.

Comments: Recovered clam (see above) on 04/16/94

Secondary Pile #584
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/21/93	1	XL-24	45		1.42		31.69		10/21/93	16			10.5	52.3%
03/18/94	1	DHD130A	53	45	0.68	3.48	11.76	12.93	04/05/94	20	3.5		12.4	73.5%
03/28/94	1	DHD130A	58	53					04/20/94	15			13.5	19.0%
04/14/94	2	DHD130A	64	58					04/27/94	20			12.6	33.8%
04/26/94	1	DHD130A	125	64					06/20/94	42			14.9	43.9%
06/17/94	2	DHD130A	185	125					08/11/94	47			29.2	43.9%
08/10/94	1	XL-24										47	43.2	8.8%

Total Drill Time = 2.10 Hours
Average Penetration Rate = 25.24 Feet / Hour
Total Redrill Time = 3.48 Hours
Average Penetration Rate = 12.93 Feet / Hour

Verticality Information
At Full Depth = 0.5° South X 2.0° East
S--ARC North = 28.69°
S--ARC South = 23.80°

Quality Coring: None.

Comments:

Primary Pile #585
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/12/94	2	DHD130A	58		3.33		17.42		04/20/94	5	15		13.5	47.7%
06/13/94	2	XL-24	125	58	4.17	2.75	16.07	21.09	06/13/94	35	6		29.2	40.5%
07/14/94	1	DHD130A	185	125	3.97	5.53	15.11	22.60	07/15/94			55	43.2	27.3%

Total Drill Time = 11.47 Hours
Average Penetration Rate = 16.13 Feet / Hour
Total Redrill Time = 8.28 Hours
Average Penetration Rate = 22.10 Feet / Hour

Verticality Information
At Full Depth = 4.0° South X 2.5° East
S--ARC North = 23.80°
S--ARC South = 26.25°

Quality Coring: None.

Comments: 4/20/94 grout silo auger motor broke down after placing 5 cu. yds. of grout, pile filled with 'non-spec'.

Secondary Pile #586
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/29/94	2	DHD130A	50	1.67		29.94		12/10/93		40		11.7	242.6%
06/21/94	2	DHD130A	125	2.78	1.88	26.98	26.60	06/22/94		35		29.2	19.9%
07/27/94	2	DHD130A	185	3.77	6.10	15.92	20.49	07/28/94			46.5	43.2	7.6%

Total Drill Time = 8.22 Hours
Average Penetration Rate = 22.51 Feet / Hour

Total Redrill Time = 7.98 Hours
Average Penetration Rate = 21.93 Feet / Hour

Verticality Information
At Full Depth = 1.5" South X 5.5" West
S-ARC North = 26.25"
S-ARC South = 27.36"

Quality Coring: None.

Comments:

Primary Pile #587
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/07/94	2	DHD130A	123	5.50		22.36		06/07/94		2		28.7	46.2%
07/18/94	1	DHD130A	185	5.17	123	11.99	18.92	07/19/94		40	50.5	43.2	16.9%

Total Drill Time = 10.67 Hours
Average Penetration Rate = 17.34 Feet / Hour

Total Redrill Time = 6.50 Hours
Average Penetration Rate = 18.92 Feet / Hour

Verticality Information
At Full Depth = 1.0" South X 7.5" West
S-ARC North = 27.36"
S-ARC South = 24.61"

Quality Coring: None.

Comments:

Secondary Pile #588
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
03/15/94	1	DHD130A	63		3.00		21.00		03/15/94	30			14.7	103.9%					
06/29/94	2	DHD130A	125	63	3.27	2.15	18.96	29.30	06/29/94		40		29.2	37.0%					
08/18/94	1	DHD130A	185	125	4.27	2.40	14.05	52.08	08/22/94		47		43.2	8.8%					

Total Drill Time = 10.54 Hours
Average Penetration Rate = 17.55 Feet / Hour

Total Redrill Time = 4.55 Hours
Average Penetration Rate = 41.32 Feet / Hour

Verticality Information
At Full Depth = 1.0° South X 1.0° East
S-ARC North = 24.61"
S-ARC South = 36.18"

Quality Coring: None.

Comments:

Primary Pile #589
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
05/31/94	2	DHD130A	99		5.17		19.15		06/01/94	40			23.1	73.0%					
08/01/94	1	XL-24	185	99	4.37	2.72	19.68	36.40	08/03/94		52		43.2	20.4%					

Total Drill Time = 9.54 Hours
Average Penetration Rate = 19.39 Feet / Hour

Total Redrill Time = 2.72 Hours
Average Penetration Rate = 36.40 Feet / Hour

Verticality Information
At Full Depth = 6.5° North X 1.75° East
S-ARC North = 36.18"
S-ARC South = 17.59"

Quality Coring: None.

Comments:

Secondary Pile # 590
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/17/94	1	DHD130A	65		2.83		22.97		03/17/94	31			15.2	104.2%
07/01/94	1	DHD130A	109	65	2.40	1.85	18.33	35.14	07/01/94		29		25.5	13.9%
07/20/94	1	XL-24	185	109	3.65	4.18	20.82	26.08	07/21/94			49.5	43.2	14.6%

Total Drill Time = 8.88 Hours
Average Penetration Rate = 20.83 Feet / Hour

Total Redrill Time = 6.03 Hours
Average Penetration Rate = 28.86 Feet / Hour

Verticality Information
At Full Depth = 1" North X 0" E/W
S-ARC North = 36.18
S-ARC South = 25.24

Quality Coring: None.

Comments:

Primary Pile # 591
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/26/94	1	DHD130A	98		4.50		21.78		04/26/94	30	1		22.9	35.5%
08/04/94	1	XL24	185	98	3.55	2.53	24.51	38.74	08/05/94			48	43.2	11.1%

Total Drill Time = 8.05 Hours
Average Penetration Rate = 22.98 Feet / Hour

Total Redrill Time = 2.53 Hours
Average Penetration Rate = 38.74 Feet / Hour

Verticality Information
At Full Depth = 0" N/S X 1.5" East
S-ARC North = 17.59
S-ARC South = 22.57

Quality Coring: None.

Comments:

Secondary Pile # 592
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/30/94	1	DHD130A	65			2.17	ERR		03/30/94	33			15.2	117.4%
06/23/94	2	DHD130A	100	65	1.92	1.92	18.23	33.85	06/23/94		32		23.4	37.0%
08/08/94	1	XL24	185	100	3.67	4.08	23.16	24.51	08/09/94			49	43.2	13.4%

Total Drill Time = 5.59 Hours
Average Penetration Rate = 33.09 Feet / Hour

Total Redrill Time = 8.17 Hours
Average Penetration Rate = 20.20 Feet / Hour

Vertically Information
At Full Depth = 2.25' South X 6.75' East
S--ARC North = 25.24
S--ARC South = 18.09

Quality Coring: None.

Comments:

Primary Pile # 593
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/23/94	1	DHD130A	93		4.00		23.25		04/23/94	62			21.7	185.5%
07/29/94	2	XL-24	185	93	3.80	2.37	24.21	39.24	08/01/94			49	43.2	13.4%

Total Drill Time = 7.80 Hours
Average Penetration Rate = 23.72 Feet / Hour

Total Redrill Time = 2.37 Hours
Average Penetration Rate = 39.24 Feet / Hour

Vertically Information
At Full Depth = 6.5' South X 1" West
S--ARC North = 22.57
S--ARC South = 32.74

Quality Coring: None.

Comments:

Secondary Pile # 594
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
04/04/94	2	DHD130A	65		2.25		28.89		04/04/94	27.5			15.2	81.2%
06/13/94	2	DHD130A	100	65	1.03	1.59	33.98	40.88	06/14/94		28		23.4	19.9%
08/15/94	1	DHD130A	185	100	5.18	6.22	16.41	16.08	08/16/94			47.5	43.2	10.0%

Total Drill Time = 8.46 Hours
Average Penetration Rate = 21.87 Feet / Hour

Total Redrill Time = 7.81 Hours
Average Penetration Rate = 21.13 Feet / Hour

Verticality Information
At Full Depth = 1.75" South X 1.5" East
S-ARC North = 18.09
S-ARC South = 25.08

Quality Coring: None.

Comments:

Primary Pile # 595
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
05/23/94	2	DHD130A	106		5.08		20.87		05/23/94	50	3		24.8	114.1%
07/26/94	2	XL-24	185	106	6.25	4.10	12.64	25.85	07/27/94			48	43.2	11.1%

Total Drill Time = 11.33 Hours
Average Penetration Rate = 16.33 Feet / Hour

Total Redrill Time = 4.10 Hours
Average Penetration Rate = 25.85 Feet / Hour

Verticality Information
At Full Depth = 2.51" South X 3" West
S-ARC North = 32.74
S-ARC South = 29.72

Quality Coring: None.

Comments:

Secondary Pile # 596
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Redrill (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)						
04/06/94	2	DHD130A	65	2.17		29.95		04/06/94	20	2.5		15.2	48.2%	
06/15/94	2	DHD130A	105	1.11	1.31	36.04	49.62	06/16/94			31	24.5	26.4%	
08/10/94	1	XL-24	185	4.10	3.98	19.51	26.38	08/11/94			47	43.2	8.8%	

Total Drill Time = 7.38 Hours
Average Penetration Rate = 25.07 Feet / Hour

Total Redrill Time = 5.29 Hours
Average Penetration Rate = 32.14 Feet / Hour

Verticality Information
At Full Depth = 1" North X 4.5" East
S-ARC North = 25.08
S-ARC South = 22.58

Quality Coring: None.
Comments:

Primary Pile # 597
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time			Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Redrill (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)						
06/09/94	2	DHD130A	105	3.58		29.33		06/09/94	50		18	24.5	177.3%	
07/21/94	1	XL-24	185	3.47	3.53	23.05	29.75	07/22/94			50	43.2	15.7%	

Total Drill Time = 7.05 Hours
Average Penetration Rate = 26.24 Feet / Hour

Total Redrill Time = 3.53 Hours
Average Penetration Rate = 29.75 Feet / Hour

Verticality Information
At Full Depth = 1.75" South X 4" East
S-ARC North = 29.72
S-ARC South = 34.09

Quality Coring: None.
Comments:

Secondary Pile # 598
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/30/94	1	DHD130A	63		2.00		31.50		03/30/94	23	3		14.7	76.7%
06/17/94	2	DHD130A	105	63	1.33	2.25	31.58	28.00	06/20/94		34		24.5	38.7%
08/04/94	1	DHD130A	185	105	6.83	5.00	11.71	21.00	08/04/94			47	43.2	8.8%

Total Drill Time = 10.16 Hours
Average Penetration Rate = 18.21 Feet / Hour

Total Redrill Time = 7.25 Hours
Average Penetration Rate = 23.17 Feet / Hour

Verticality Information
At Full Depth = 4" North X 5.5" East
S-ARC North = 22.58
S-ARC South = 15.51

Quality Coring: None.

Comments:

Primary Pile # 599
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/03/94	2	DHD130A	104		3.17		32.81		06/03/94	55	9		24.3	163.5%
07/06/94	1	XL-24	185	104	3.88	2.62	20.88	39.69	07/06/94			48	43.2	11.1%

Total Drill Time = 7.05 Hours
Average Penetration Rate = 26.24 Feet / Hour

Total Redrill Time = 2.62 Hours
Average Penetration Rate = 39.69 Feet / Hour

Verticality Information
At Full Depth = 2" South X 0" E/W
S-ARC North = 34.09
S-ARC South = 19.54

Quality Coring: None.

Comments:

Secondary Pile #600
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
03/25/94	1	DHD130A	58		2.08		27.88	20			13.5	47.7%
06/22/94	2	DHD130A	105	58	2.03	1.55	23.15		30.5		24.5	24.4%
08/17/94	1	DHD130A	185	105	6.60	6.48	12.12			47	43.2	8.8%

Total Drill Time = 10.71 Hours
 Average Penetration Rate = 17.27 Feet / Hour
 Total Redrill Time = 8.03 Hours
 Average Penetration Rate = 20.30 Feet / Hour

Verticality Information
 At Full Depth = 6.5" South X 1.5" East
 S-ARC North = 19.54"
 S-ARC South = 21.32"

Quality Coring: None.

Comments:

Primary Pile #601
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
05/20/94	2	DHD130A	105		6.25		16.80		3.0		24.5	177.3%
06/29/94	2	XL-24	185	105	3.58	2.50	22.35	65		48	43.2	11.1%

Total Drill Time = 9.83 Hours
 Average Penetration Rate = 18.82 Feet / Hour
 Total Redrill Time = 2.50 Hours
 Average Penetration Rate = 42.00 Feet / Hour

Verticality Information
 At Full Depth = 10" South X 0" East / West
 S-ARC North = 21.32"
 S-ARC South = 33.70"

Quality Coring: None.

Comments:

Secondary Pile #602
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/22/94	1	DHD130A	64	2.50			25.60			03/23/94	20			14.9	33.8%
06/27/94	2	DHD130A	105	1.97	64	1.70	20.81		37.65	06/27/94		30		24.5	22.4%
08/23/94	1	DHD130A	185	5.33	105	6.08	15.01		17.27	08/25/94			47	43.2	8.8%

Total Drill Time = 9.80 Hours
 Average Penetration Rate = 18.88 Feet / Hour
 Total Redrill Time = 7.78 Hours
 Average Penetration Rate = 21.72 Feet / Hour

Verticality Information
 At Full Depth = 5' South X 2.0" East
 S-ARC North = 33.70"
 S-ARC South = 30.14"

Quality Coring: None.

Comments:

Primary Pile #603
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/17/94	1	DHD130A	7	0.50			14.00							1.6	
05/09/94	1	DHD130A	95	3.08	95	0.25	30.84		0.00	05/11/94	60		4.5	22.2	190.7%
07/12/94	1	XL-24	185	12.00	95	5.30	7.50		17.92	07/13/94			57.5	43.2	33.1%

Total Drill Time = 15.58 Hours
 Average Penetration Rate = 12.32 Feet / Hour
 Total Redrill Time = 5.55 Hours
 Average Penetration Rate = 17.12 Feet / Hour

Verticality Information
 At Full Depth = 2.0' South X 2.0" East
 S-ARC North = 30.14"
 S-ARC South = 28.86"

Quality Coring: None.

Comments:

Secondary Pile #604
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/21/94	1	DHD130A	62		2.75		22.55		03/22/94	21			14.5	45.0%
06/23/94	2	DHD130A	100	62	1.37	1.97	27.74	31.47	06/24/94		27		23.4	15.6%
07/30/94	2	XL-24	185	100	4.53	3.42	18.76	29.24	08/01/94			50	43.2	15.7%

Total Drill Time = 8.65 Hours
Average Penetration Rate = 21.39 Feet / Hour

Total Redrill Time = 5.39 Hours
Average Penetration Rate = 30.06 Feet / Hour

Vertically Information
At Full Depth = 1.0' North X 6.0' West
S-ARC North = 28.86"
S-ARC South = 26.87"

Quality Coring: None.

Comments:

Primary Pile #605
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/25/94	1	DHD130A	95		3.67		25.89		04/26/94	90			22.2	341.8%
07/15/94	1	XL-24	185	95	5.00	2.83	18.00	33.57	07/15/94			49	43.2	13.4%

Total Drill Time = 8.67 Hours
Average Penetration Rate = 21.34 Feet / Hour

Total Redrill Time = 2.83 Hours
Average Penetration Rate = 33.57 Feet / Hour

Vertically Information
At Full Depth = 1.5" North X 1.5" West
S-ARC North = 26.87"
S-ARC South = 15.05"

Quality Coring: None.

Comments:

Secondary Pile #606
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/15/94	1	DHD130A	65		2.67		24.34		03/15/94	47			15.2	209.6%
06/09/94	2	DHD130A	100	65	1.12	1.88	31.25	34.57	06/10/94		29		23.4	24.2%
08/02/94	1	XL-24	185	100	5.25	3.50	16.19	28.57	08/03/94			47.5	43.2	10.0%

Total Drill Time = 9.04 Hours
Average Penetration Rate = 20.46 Feet / Hour

Total Redrill Time = 5.38 Hours
Average Penetration Rate = 30.67 Feet / Hour

Verticality Information
At Full Depth = 5.0° South X 2.0° East
S-ARC North = 15.05"
S-ARC South = 22.97"

Quality Coring: None.

Comments: Connected with pile 620

Primary Pile #607
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/02/94	2	DHD130A	97		3.58		27.09		04/02/94	49			22.7	116.3%
07/19/94	1	XL-24	185	97	3.33	2.17	26.43	44.70	07/20/94			50.5	43.2	16.9%

Total Drill Time = 6.91 Hours
Average Penetration Rate = 26.77 Feet / Hour

Total Redrill Time = 2.17 Hours
Average Penetration Rate = 44.70 Feet / Hour

Verticality Information
At Full Depth = 7.5° South X 3.25° East
S-ARC North = 22.97"
S-ARC South = 32.02"

Quality Coring: None.

Comments:

Secondary Pile #608
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/01/93	2	DHD130A	102	5.17		19.73	11/02/93		123		23.8	416.4%
07/27/94	2	DHD130A	185	5.77	5.40	14.38	07/28/94			48	43.2	11.1%

Total Drill Time = 10.94 Hours
Average Penetration Rate = 16.91 Feet / Hour

Total Redrill Time = 5.40 Hours
Average Penetration Rate = 18.89 Feet / Hour

Verticality Information
At Full Depth = 3.5" South X 3.75" East
S--ARC North = 32.02"
S--ARC South = 20.96"

Quality Coring: None.
Comments:

Primary Pile #609
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/23/94	1	DHD130A	95	4.42		21.49	04/23/94		2.0		22.2	53.3%
07/21/94	1	XL-24	185	5.33	1.17	16.89	07/22/94			51	43.2	18.1%

Total Drill Time = 9.75 Hours
Average Penetration Rate = 18.97 Feet / Hour

Total Redrill Time = 1.17 Hours
Average Penetration Rate = 81.20 Feet / Hour

Verticality Information
At Full Depth = 7.0" South X 7.5" East
S--ARC North = 20.96"
S--ARC South = 33.75"

Quality Coring: None.
Comments:

Secondary Pile #610
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Pig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/19/93	1	XL-24	185		9.00		20.56		10/19/93		79	43.2	82.9%
11/30/93	1	XL-24	67						12/04/93		58	30.4	91.1%
12/03/93	1	XL-24	130										

Total Drill Time = 9.00 Hours
Average Penetration Rate = 20.56 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information

At Full Depth = 0° North / South X 0° East / West
S-ARC North = 33.75°
S-ARC South = No Overlap at Full Depth, Overlap Achieved with Conforming Pile.

Quality Coring: None.

Comments: 11/30/93 set up on wrong pile and continued on 12-3-93 until mistake was discovered
No redrill payment allowed.
No payment for additional 58 cy of concrete.

Primary Pile #611
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Pig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
01/27/94	2	XL-24	185		6.50		28.46		01/28/94		53	43.2	22.7%

Total Drill Time = 6.50 Hours
Average Penetration Rate = 28.46 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information

At Full Depth = 11° South X 7.0° West
S-ARC North = No Overlap at Full Depth, Overlap Achieved with Conforming Pile.
S-ARC South = 35.59°

Quality Coring: None.

Comments:

Secondary Pile #612
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
09/17/93	1	DHD130A	185		15.08		09/18/93		146		43.2	238.0%
10/20/93	1	XL-24	82	82		3.08	10/20/93		19		19.1	-0.8%
12/09/93	2	DHD130A	80	80		3.58	12/13/93		45.5		18.7	143.6%
01/22/94	2	DHD130A	185	185		11.92	01/24/94			53	43.2	22.7%

Total Drill Time = 15.08 Hours
Average Penetration Rate = 12.27 Feet / Hour

Total Redrill Time = 18.58 Hours
Average Penetration Rate = 18.68 Feet / Hour

Verticality Information
At Full Depth = 2.5° South X 0° East / West
S--ARC North = 35.59"
S--ARC South = 33.07"

Quality Coring: None.

Comments: Hole collapsed to 80' after drilling to 185' initially; cavities in the lower part of hole.

Primary Pile #613
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
01/31/94	2	DHD130A	185		9.08		02/01/94			47	43.2	8.8%

Total Drill Time = 9.08 Hours
Average Penetration Rate = 20.37 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.5° North X 2.5° East
S--ARC North = 33.07"
S--ARC South = 22.08"

Quality Coring: None.

Comments:

Secondary Pile #614
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)					
09/25/93	1	DHD130A	117		9.00		13.00		09/25/93	110		27.3	302.6%
01/13/94	2	DHD130A	185	117	7.17	8.58	9.48	13.64	01/14/94		53.5	43.2	23.8%

Total Drill Time = 16.17 Hours
Average Penetration Rate = 11.44 Feet / Hour

Total Redrill Time = 8.58 Hours
Average Penetration Rate = 13.64 Feet / Hour

Verticality Information
At Full Depth = 0.5° South X 0.75° East
S-ARC North = 22.08°
S-ARC South = 28.53°

Quality Coring: None.

Comments: Encountered clay to approx. 90', then went into rock

Primary Pile #615
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)					
12/15/93	2	XL-24	185		8.17		22.64		12/17/93		93	43.2	115.3%

Total Drill Time = 8.17 Hours
Average Penetration Rate = 22.64 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0.79° North X 0° East / West
S-ARC North = 28.53°
S-ARC South = 15.87°

Quality Coring: None.

Comments: Hole collapsed to 155', had to clean, probable reason for extra concrete.

Secondary Pile #616
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
10/29/93	2	DHD130A	110	110	5.92		18.58	16.72	10/29/93		61.5		25.7	139.4%
01/25/94	2	DHD130A	185	110	5.58		13.44	6.58	01/26/94			51	43.2	18.1%

Total Drill Time = 11.50 Hours
 Average Penetration Rate = 16.09 Feet / Hour
 Total Redrill Time = 6.58 Hours
 Average Penetration Rate = 16.72 Feet / Hour

Verticality Information
 At Full Depth = 4.8° South X 6.8° West
 S-ARC North = 15.87°
 S-ARC South = 30.56°

Quality Coring: None.
 Comments:

Primary Pile #617
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
11/08/93	1	DHD130A	95	95	4.83		19.67	42.22	11/08/93		39		22.2	75.8%
01/20/94	2	XL-24	186	95	4.25		21.41	2.25	01/20/94			54	43.4	24.3%

Total Drill Time = 9.08 Hours
 Average Penetration Rate = 20.48 Feet / Hour
 Total Redrill Time = 2.25 Hours
 Average Penetration Rate = 42.22 Feet / Hour

Verticality Information
 At Full Depth = 1.0° South X 0.5° West
 S-ARC North = 30.56°
 S-ARC South = 18.62°

Quality Coring: None.
 Comments:

Secondary Pile #618
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/30/93	87	DHD130A	87		4.50		19.33			11/01/93		45		20.3	121.5%
06/15/94	110	DHD130A	110	87	1.22	4.28	18.85		20.33	06/16/94		31		25.7	20.7%
08/09/94	185	XL-24	185	110	3.67	3.92	20.44		28.06	08/10/94			47.5	43.2	10.0%

Total Drill Time = 9.39 Hours
Average Penetration Rate = 19.70 Feet / Hour

Total Redrill Time = 8.20 Hours
Average Penetration Rate = 24.02 Feet / Hour

Verticality Information
At Full Depth = 5.5" South X 6.0" West
S-ARC North = 18.62"
S-ARC South = 37.84"

Quality Coring: None.

Comments:

Primary Pile #619
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/27/94	1	DHD130A	109		4.78		22.80			04/28/94		30		25.5	41.4%
06/29/94	2	XL-24	185	109	3.85	2.57	19.74		42.41	07/01/94		6	50.5	43.2	16.9%

Total Drill Time = 8.63 Hours
Average Penetration Rate = 21.44 Feet / Hour

Total Redrill Time = 2.57 Hours
Average Penetration Rate = 42.41 Feet / Hour

Verticality Information
At Full Depth = 3.5" North X 7.25" West
S-ARC North = 37.84"
S-ARC South = 11.60"

Quality Coring: None.

Comments:

Secondary Pile #620
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
11/04/93	1	240	63		2.50		11/04/93		37.5		14.7	154.9%
03/15/94	1	DHD30	65	63	0.02	3.33	03/15/94	25			15.2	64.7%
06/13/94	2	DHD30	110	65	2.37	1.92	06/14/94		30		25.7	16.8%
08/15/94	1	DHD30	185	110	5.88	6.78	08/18/94			47	43.2	8.8%

Total Drill Time = 10.77 Hours
 Average Penetration Rate = 17.18 Feet / Hour
 Total Redrill Time = 12.03 Hours
 Average Penetration Rate = 19.78 Feet / Hour

Verticality Information
 At Full Depth = 4.0° South X 1.5° West
 S-ARC North = 11.60°
 S-ARC South = 31.26°

Quality Coring: None.

Comments: Connected with pile 606

Primary Pile #621
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)						
03/25/94	1	DHD30	96		5.75		03/25/94	40			22.4	78.4%
07/08/94	1	XL-24	185	96	4.07	2.77	07/08/94			48.5	43.2	12.3%

Total Drill Time = 9.82 Hours
 Average Penetration Rate = 18.84 Feet / Hour
 Total Redrill Time = 2.77 Hours
 Average Penetration Rate = 34.66 Feet / Hour

Verticality Information
 At Full Depth = 0° North / South X 3.5° East
 S-ARC North = 31.26°
 S-ARC South = 20.39°

Quality Coring: None.

Comments:

Secondary Pile #622
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Drill (FT / HR)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/17/94	1	DHD30	65		2.33	27.90		27.90	03/17/94	20			15.2	31.8%
06/16/94	2	DHD30	110	65	2.93	15.36	1.74	15.36	06/17/94		28		25.7	9.0%
08/11/94	1	DHD30	185	110	5.50	13.64	4.42	13.64	08/12/94			47	43.2	8.8%

Total Drill Time = 10.76 Hours
 Average Penetration Rate = 17.19 Feet / Hour
 Total Redrill Time = 6.16 Hours
 Average Penetration Rate = 28.41 Feet / Hour

Verticality Information
 At Full Depth = 4.0° South X 5.25° East
 S-ARC North = 20.39°
 S-ARC South = 27.45°

Quality Coring: None.

Comments:

Primary Pile #623
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Drill (FT / HR)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/06/94	1	DHD30	107		7.83	13.67		13.67	05/06/94	35	5.5		25.0	62.1%
07/13/94	1	XL-24	185	107	4.08	19.12	3.08	19.12	07/13/94			48	43.2	11.1%

Total Drill Time = 11.91 Hours
 Average Penetration Rate = 15.53 Feet / Hour
 Total Redrill Time = 3.08 Hours
 Average Penetration Rate = 34.74 Feet / Hour

Verticality Information
 At Full Depth = 3.5° South X 5.75° East
 S-ARC North = 27.45°
 S-ARC South = 28.13°

Quality Coring: None.

Comments:

Secondary Pile #624
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/19/94	1	DHD30	64		2.75	23.27		03/19/94	23			14.9	53.9%
06/21/94	2	DHD30	110	64	3.78	12.17	41.29	06/21/94		32		25.7	24.6%
08/22/94	1	DHD30	185	110	4.95	15.15	17.46	08/23/94			47	43.2	8.8%

Total Drill Time = 11.48 Hours
 Average Penetration Rate = 16.11 Feet / Hour
 Total Redrill Time = 7.85 Hours
 Average Penetration Rate = 22.17 Feet / Hour

Verticality Information
 At Full Depth = 2.5" South X 5.0" East
 S-ARC North = 28.13"
 S-ARC South = 32.99"

Quality Coring: None.
 Comments:

Primary Pile #625
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/19/94	2	DHD30	105		7.58	13.85		05/20/94	30	3.9		24.5	38.3%
07/15/94	1	XL-24	185	105	4.08	19.61	32.31	07/18/94			48	43.2	11.1%

Total Drill Time = 11.66 Hours
 Average Penetration Rate = 15.87 Feet / Hour
 Total Redrill Time = 3.25 Hours
 Average Penetration Rate = 32.31 Feet / Hour

Verticality Information
 At Full Depth = 2.5" North X 2.0" East
 S-ARC North = 32.99"
 S-ARC South = 26.05"

Quality Coring: None.
 Comments:

Secondary Pile #626
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Excavation Method	Drill (FT)	Redrill (FT)	Drill (FT / HR)						
03/23/94	1	DHD30	63		27.04		20			14.7	35.9%
06/22/94	2	DHD30	105	63	25.15	2.00		32		24.5	30.5%
08/24/94	1	DHD30	185	105	19.18	4.75			43.5	43.2	0.7%

Total Drill Time = 8.17 Hours
Average Penetration Rate = 22.64 Feet / Hour

Total Redrill Time = 6.75 Hours
Average Penetration Rate = 24.89 Feet / Hour

Vertically Information
At Full Depth = 2.0' North X 2.0' East
S--ARC North = 26.05"
S--ARC South = 34.31"

Quality Coring: None.

Comments:

Primary Pile #627
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Excavation Method	Drill (FT)	Redrill (FT)	Drill (FT / HR)						
04/25/94	1	DHD30	95		22.35		40			22.2	116.4%
07/19/94	1	XL-24	185	95	18.00	2.67		8	48	43.2	11.1%

Total Drill Time = 9.25 Hours
Average Penetration Rate = 20.00 Feet / Hour

Total Redrill Time = 2.67 Hours
Average Penetration Rate = 35.58 Feet / Hour

Vertically Information
At Full Depth = 8.0' North X 0' East / West
S--ARC North = 34.31"
S--ARC South = 11.26"

Quality Coring: None.

Comments:

Secondary Pile #628
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/21/94	1	DHD30	64		2.17		29.49		03/22/94	20			14.9	33.8%
06/30/94	2	DHD30	109	64	5.75	0.67	7.83	95.52	07/01/94		28.5		25.5	12.0%
08/09/94	1	XL-24	185	109	4.78	4.05	15.90	26.91	09/09/94			48.5	43.2	12.3%

Total Drill Time = 12.70 Hours
Average Penetration Rate = 14.57 Feet / Hour
Total Redrill Time = 4.72 Hours
Average Penetration Rate = 36.65 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 3.0° West
S-ARC North = 11.26"
S-ARC South = 29.87"

Quality Coring: None.

Comments:

Primary Pile #629
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
03/31/94	1	DHD30	95		5.08		18.70		04/01/94	47			22.2	120.9%
07/22/94	1	XL-24	185	95	4.50	3.83	20.00	24.80	07/25/94		2	49	43.2	13.4%

Total Drill Time = 9.58 Hours
Average Penetration Rate = 19.31 Feet / Hour
Total Redrill Time = 3.83 Hours
Average Penetration Rate = 24.80 Feet / Hour

Verticality Information
At Full Depth = 2.5° North X 0° East / West
S-ARC North = 29.87"
S-ARC South = 14.22"

Quality Coring: None.

Comments:

Secondary Pile #630
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
03/18/94	1	DHD130A	64	2.08		30.77		03/18/94	28			14.9	87.4%
06/24/94	2	DHD130A	110	2.48	64	18.55	1.60	06/24/94		37.5		25.7	46.0%
08/17/94	1	DHD130A	185	6.83	110	10.98	6.42	08/18/94			47	43.2	8.8%

Total Drill Time = 11.39 Hours
Average Penetration Rate = 16.24 Feet / Hour

Total Redrill Time = 8.02 Hours
Average Penetration Rate = 21.70 Feet / Hour

Verticality Information
At Full Depth = 3.5" South X 8.0" East
S-ARC North = 14.22"
S-ARC South = 20.93"

Quality Coring: None.

Comments:

Primary Pile #631
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
04/22/94	1	DHD130A	80	4.00		20.00		04/22/94	32			18.7	71.3%
06/08/94	2	DHD130A	110	7.62	80	3.94	1.88	06/08/94	50	2.0		25.7	102.4%
08/02/94	1	XL-24	185	4.83	110	15.53	3.25	08/04/94			51	43.2	18.1%

Total Drill Time = 16.45 Hours
Average Penetration Rate = 11.25 Feet / Hour

Total Redrill Time = 5.13 Hours
Average Penetration Rate = 37.04 Feet / Hour

Verticality Information
At Full Depth = 5.0" South X 19" East
S-ARC North = 20.93"
S-ARC South = 26.67"

Quality Coring: None.

Comments: Connected with piles 609, 621 & 631; Hole collapsed to 60'.

Secondary Pile #632
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Redrill		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)										
03/16/94	1	DHD130A	65		65	2.08				31.25		03/16/94	74			15.2	387.5%		
05/23/94	2	DHD130A	80		80	1.95		1.88		7.69		05/25/94	22.5	3.5		18.7	39.2%		
06/27/94	2	DHD130A	110		110	0.85		1.48		35.29		06/27/94		32		25.7	24.6%		
08/12/94	1	XL-24	185		185	3.92		4.42		19.13		08/12/94		47		43.2	8.8%		

Total Drill Time = 8.80 Hours
 Average Penetration Rate = 21.02 Feet / Hour
 Total Redrill Time = 7.78 Hours
 Average Penetration Rate = 32.78 Feet / Hour

Verticality Information
 At Full Depth = 2.0° South X 7.25° East
 S-ARC North = 26.67°
 S-ARC South = 20.93°

Quality Coring: None.

Comments: cavities 45-65'

Primary Pile #633
Area "B"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Redrill		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak		
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT./HR)	Redrill (FT./HR)										
03/30/94	1	DHD130A	74		74	3.25				22.77		03/30/94	25	2.1		17.3	56.8%		
06/01/94	2	DHD130A	110		110	4.12		1.22		8.74		06/01/94	30	3.0		25.7	28.5%		
07/20/94	1	XL-24	185		185	3.83		2.58		19.58		07/21/94		48.5		43.2	12.3%		

Total Drill Time = 11.20 Hours
 Average Penetration Rate = 16.52 Feet / Hour
 Total Redrill Time = 3.80 Hours
 Average Penetration Rate = 48.42 Feet / Hour

Verticality Information
 At Full Depth = 2.0° North X 12° West
 S-ARC North = 20.93°
 S-ARC South = 15.72°

Quality Coring: None.

Comments: Cavity 66 to 94'

Secondary Pile #634
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
03/14/94	1	DHD130A	42		1.58		26.58		03/14/94	76			9.8	674.9%
03/19/94	1	DHD130A	64	42	0.90	1.33	24.44	31.58	03/19/94	22	8		14.9	100.7%
05/06/94	1	DHD130A	85	64	0.95	2.38	22.11	26.89	05/06/94	30	8.0		19.8	91.4%
06/29/94	2	DHD130A	110	85	1.58	1.58	15.82	53.80	06/29/94		31		25.7	20.7%
08/22/94	1	DHD130A	185	110	4.25	4.67	17.65	23.55	08/23/94			47	43.2	8.8%

Total Drill Time = 9.26 Hours
Average Penetration Rate = 19.98 Feet / Hour

Total Redrill Time = 9.96 Hours
Average Penetration Rate = 30.22 Feet / Hour

Verticality Information
At Full Depth = 1.5" South X 1.0" East
S-ARC North = 15.72"
S-ARC South = 20.70"

Quality Coring: None.

Comments: Connection with ditch during grouting, approx. 15' away.

Primary Pile #635
Area "B"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
03/24/94	1	DHD130A	96		4.92		19.51		03/24/94	25			22.4	11.5%
08/05/94	1	XL-24	185	96	3.95	2.88	22.53	33.33	08/08/94			51	43.2	18.1%

Total Drill Time = 8.87 Hours
Average Penetration Rate = 20.86 Feet / Hour

Total Redrill Time = 2.88 Hours
Average Penetration Rate = 33.33 Feet / Hour

Verticality Information
At Full Depth = 4.5" South X 8.0" East
S-ARC North = 20.70"
S-ARC South = 29.59"

Quality Coring: None.

Comments:

Secondary Pile #636
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)		Penetration Rate (FT / HR)		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/21/93	1	XL-24	64	8.75		7.31		10/22/93		36.5		14.9	144.2%
12/10/93	2	DHD130A	185		64	7.50	8.53	12/13/93		64		43.2	48.1%
07/06/94	1	DHD130A	185		185	10.08	18.35	07/07/94			55	43.2	27.3%

Total Drill Time = 8.75 Hours
Average Penetration Rate = 21.14 Feet / Hour

Total Redrill Time = 17.58 Hours
Average Penetration Rate = 14.16 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 2.0° West
S-ARC North = 28.59°
S-ARC South = 24.19°

Quality Coring: None.

Comments: Tremie plate fell into hole at 185'

Primary Pile #637
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)		Penetration Rate (FT / HR)		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/22/94	2	XL-24	120	5.75		20.87		01/22/94		24		28.0	-14.4%
08/01/94	1	DHD130A	185		120	6.83	17.57	08/02/94			47	43.2	8.8%

Total Drill Time = 10.92 Hours
Average Penetration Rate = 16.94 Feet / Hour

Total Redrill Time = 6.83 Hours
Average Penetration Rate = 17.57 Feet / Hour

Verticality Information
At Full Depth = 1.5° South X 1.5° East
S-ARC North = 24.19°
S-ARC South = 28.15°

Quality Coring: None.

Comments: Lost rotary bucket cap in hole.

Secondary Pile #638
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
10/16/94	1	XL-24	185		7.88		23.48	10/16/93	62	43.2	43.5%

Total Drill Time = 7.88 Hours
Average Penetration Rate = 23.48 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0.5° South X 1.0° East
S-ARC North = 28.15"
S-ARC South = 28.31"

Quality Coring: None.

Comments: Cavity 50 - 60' deep

Primary Pile #639
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
11/29/93	1	DHD130A	185		10.08		18.35	11/30/93	49	43.2	13.4%

Total Drill Time = 10.08 Hours
Average Penetration Rate = 18.35 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0.75° North X 1.5° West
S-ARC North = 28.31"
S-ARC South = 26.58"

Quality Coring: None.

Comments:

Secondary Pile #640
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Pig #	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Excavation Method	Drill (FT)	Redrill (FT)	Drill (FT/HR)						
10/11/93	1	DHD130A	185	185	16.58	12.25	11.16	15.10	114	43.2	163.9%
11/13/93	1	DHD130A	185	185	16.58	12.25	11.16	15.10	52	43.2	20.4%

Total Drill Time = 16.58 Hours
 Average Penetration Rate = 11.16 Feet / Hour
 Total Redrill Time = 12.25 Hours
 Average Penetration Rate = 15.10 Feet / Hour

Verticality Information
 At Full Depth = 1.0° North X 2.75° East
 S-ARC North = 26.58"
 S-ARC South = 28.48"

Quality Coring: None.

Comments: 10/12/93 drilled to 185' down staged to 100'; caved in to 128'.

Primary Pile #641
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Pig #	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Excavation Method	Drill (FT)	Redrill (FT)	Drill (FT/HR)						
11/19/93	1	XL-24	185	185	6.92	26.73	26.73	48.5	48.5	43.2	12.3%

Total Drill Time = 6.92 Hours
 Average Penetration Rate = 26.73 Feet / Hour

Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 2.25° North X 3.0° East
 S-ARC North = 28.48"
 S-ARC South = 23.33"

Quality Coring: None.

Comments: Cavity 40 - 46'.

Secondary Pile #642
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Pile #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/06/93	1	DHD130A	185			15.66		11.81		10/07/93			78	43.2	80.6%

Total Drill Time = 15.66 Hours
Average Penetration Rate = 11.81 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° North / South X 1.5° East
S-ARC North = 23.33"
S-ARC South = 24.87"

Quality Coring: None.

Comments:

Primary Pile #643
Area "C"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Pile #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/04/93	1	XL-24	185			6.46		28.64		11/05/93			52	43.2	20.4%

Total Drill Time = 6.46 Hours
Average Penetration Rate = 28.64 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.25° South X 0° East / West
S-ARC North = 24.87"
S-ARC South = 29.83"

Quality Coring: None.

Comments:

Secondary Pile #644
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/04/93	1	DHD130A	185	13.67		13.53		10/04/93			57	43.2	31.9%

Total Drill Time = 13.67 Hours
Average Penetration Rate = 13.53 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.0° North X 0.25° West
S-ARC North = 29.83°
S-ARC South = 34.14°

Quality Coring: None.

Comments:

Primary Pile #645
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/01/93	2	XL-24	185	7.09		26.09		11/01/93			49	43.2	13.4%

Total Drill Time = 7.09 Hours
Average Penetration Rate = 26.09 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 6.75° North X 0° East / West
S-ARC North = 34.14°
S-ARC South = 14.77°

Quality Coring: None.

Comments:

Secondary Pile #646
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/29/93	1	DHD130A	185	28.84		6.41	09/29/93			50.5	43.2	16.9%

Total Drill Time = 28.84 Hours
Average Penetration Rate = 6.41 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° North / South X 2.25° East
S-ARC North = 14.77"
S-ARC South = 23.75"

Quality Coring: None.

Comments:

Primary Pile #647
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/11/93	1	DHD130A	185	19.17		9.65	11/11/93			51.5	43.2	19.2%

Total Drill Time = 19.17 Hours
Average Penetration Rate = 9.65 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.0° South X 1.0° East
S-ARC North = 23.75"
S-ARC South = 31.08"

Quality Coring: None.

Comments:

Secondary Pile #648
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
09/24/93	1	DHD130A	185		17.59	10.52	09/27/93			57	43.2	31.9%

Total Drill Time = 17.59 Hours
Average Penetration Rate = 10.52 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.25" North X 0" East / West
S-ARC North = 31.08"
S-ARC South = 27.78"

Quality Coring: None.

Comments: Connected with piles 612, 582, 552 & 532

Primary Pile #649
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
11/09/93	1	DHD130A	185		13.67	13.53	11/09/93			47.5	43.2	10.0%

Total Drill Time = 13.67 Hours
Average Penetration Rate = 13.53 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.0" North X 1.0" East
S-ARC North = 27.78"
S-ARC South = 23.76"

Quality Coring: None.

Comments:

Secondary Pile #650
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
09/30/93	1	DHD130A	185		13.83		13.38		10/01/93			49	43.2	13.4%

Total Drill Time = 13.83 Hours
Average Penetration Rate = 13.38 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 0° North / South X 0° East / West
S-ARC North at 185' = 23.76"
S-ARC North at 130' = 26.76"
S-ARC South = 24.24"

Quality Coring: None.

Comments:

Primary Pile #651
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
10/28/93	2	240	130		6.50		20.00		10/28/93			35	30.4	15.3%

Total Drill Time = 6.50 Hours
Average Penetration Rate = 20.00 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 1.5° South X 3.25° West
S-ARC North = 24.24"
S-ARC South = 30.41"

Quality Coring: None.

Comments:

Secondary Pile #652
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/08/93	1	DHD130A	130		10.66		12.20		10/08/93			36	30.4	18.6%

Total Drill Time = 10.66 Hours
Average Penetration Rate = 12.20 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.0° North X 2.5° East
S-ARC North = 30.41"
S-ARC South = 24.03"

Quality Coring: None.

Comments:

Primary Pile #653
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
11/01/93	2	XL-24	130		5.67		22.93		11/01/93			35	30.4	15.3%

Total Drill Time = 5.67 Hours
Average Penetration Rate = 22.93 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0.5° North X 1.75° West
S-ARC North = 24.03"
S-ARC South = 28.14"

Quality Coring: None.

Comments:

Secondary Pile #654
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Spec. Concrete (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
10/14/93	1	DHD130A	130		15.83	8.21	10/14/93	35		30.4	15.3%

Total Drill Time = 15.83 Hours
Average Penetration Rate = 8.21 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 1.5" North X 1.25" West
S-ARC North = 28.14"
S-ARC South = 23.23"

Quality Coring: None.

Comments:

Primary Pile #655
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Spec. Concrete (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)					
11/03/93	1	240	130		7.33	17.74	11/04/93	35		30.4	15.3%

Total Drill Time = 7.33 Hours
Average Penetration Rate = 17.74 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 0.75" South X 1.0" East
S-ARC North = 23.23"
S-ARC South = 27.79"

Quality Coring: None.

Comments:

Secondary Pile #656
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/18/93	1	XL-24	130		6.50		20.00		10/18/93			36	30.4	18.6%

Total Drill Time = 6.50 Hours
Average Penetration Rate = 20.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information

At Full Depth = 0° North / South X 0° East / West
S-ARC North = 27.79"
S-ARC South = 19.80"

Quality Coring: None.

Comments:

Primary Pile #657
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/29/93	2	DHD130A	130		9.75		13.33		10/30/93			35	30.4	15.3%

Total Drill Time = 9.75 Hours
Average Penetration Rate = 13.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information

At Full Depth = 4.25° South X 2.75° West
S-ARC North = 19.80"
S-ARC South = 33.62"

Quality Coring: None.

Comments:

Secondary Pile #658
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
10/27/93	2	DHD130A	130		8.16		15.93			35	30.4	15.3%

Total Drill Time = 8.16 Hours
Average Penetration Rate = 15.93 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 1.25" North X 0' East / West
S--ARC North = 33.62"
S--ARC South = 24.87"

Quality Coring: None.

Comments:

Primary Pile #659
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
11/10/93	1	240	130		9.50		13.68			35	30.4	15.3%

Total Drill Time = 9.50 Hours
Average Penetration Rate = 13.68 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0' North / South X 1.5" West
S--ARC North = 24.87"
S--ARC South = 26.76"

Quality Coring: None.

Comments:

Secondary Pile #660
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/26/93	2	XL-24	130	6.50		20.00		10/26/93			35.5	30.4	16.9%

Total Drill Time = 6.50 Hours
Average Penetration Rate = 20.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° North / South X 2.0° West
S-ARC North = 26.76°
S-ARC South = 26.49°

Quality Coring: None.

Comments:

Primary Pile #661
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/08/93	1	240	130	6.81		19.09		11/08/93			37.5	30.4	23.5%

Total Drill Time = 6.81 Hours
Average Penetration Rate = 19.09 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° North / South X 1.0° East
S-ARC North = 26.49°
S-ARC South = 26.70°

Quality Coring: None.

Comments:

Secondary Pile #662
Area "C"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)					
10/25/93	2	XL-24	130		6.83		19.03		10/25/93	35		30.4	15.3%

Total Drill Time = 6.83 Hours
Average Penetration Rate = 19.03 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° North / South X 2.5° East
S-ARC North = 26.70"
S-ARC South = 26.58"

Quality Coring: None.

Comments: Cavity 59-63'

Primary Pile #663
Area "C"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)					
11/02/93	2	DHD130A	130		9.08		14.32		11/02/93	35		30.4	15.3%

Total Drill Time = 9.08 Hours
Average Penetration Rate = 14.32 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° North / South X 0° East / West
S-ARC North = 26.58"
S-ARC South = 25.27"

Quality Coring: None.

Comments:

Secondary Pile #664
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/21/93	2	DHD130A	130	9.34		13.92	10/21/93		36	30.4	18.6%

Total Drill Time = 9.34 Hours
Average Penetration Rate = 13.92 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.0° South X 1.0° West
S-ARC North = 25.27"
S-ARC South = 28.84"

Quality Coring: None.

Comments:

Primary Pile #665
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
11/04/93	1	XL-24	130	4.37		29.75	11/04/93		35	30.4	15.3%

Total Drill Time = 4.37 Hours
Average Penetration Rate = 29.75 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0.5° North X 1.5° West
S-ARC North = 28.84"
S-ARC South = 27.05"

Quality Coring: None.

Comments:

Secondary Pile #666
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/19/93	2	240	130	7.75		16.77		10/19/93			38	30.4	25.2%

Total Drill Time = 7.75 Hours
Average Penetration Rate = 16.77 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0.75" North X 0" East / West
S--ARC North = 27.05"
S--ARC South = 22.43"

Quality Coring: None.

Comments:

Primary Pile #667
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
12/04/93	1	DHD130A	130	8.67		14.99		12/04/93			34.5	30.4	13.6%

Total Drill Time = 8.67 Hours
Average Penetration Rate = 14.99 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.0" South X 2.25" West
S--ARC North = 22.43"
S--ARC South = 27.88"

Quality Coring: None.

Comments:

Secondary Pile #668
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
10/16/93	1	240	130		10.00		13.00			36	30.4	18.6%
11/15/93	1	DHD130A	130	130	7.50		17.33			35	30.4	15.3%

Total Drill Time = 10.00 Hours
 Average Penetration Rate = 13.00 Feet / Hour
 Total Redrill Time = 7.50 Hours
 Average Penetration Rate = 17.33 Feet / Hour
 Verticality Information
 At Full Depth = 0.75" South X 2.25" East
 S-ARC North = 27.88"
 S-ARC South = 33.14"

Quality Coring: None.

Comments: Caved in to 90' on 10/16/93; cavity 38--55'.

Primary Pile #669
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
11/20/93	1	XL-24	62		1.97		31.47			8	14.5	38.1%
11/29/93	1	DHD130A	130	62	4.25		16.00			35	30.4	15.3%

Total Drill Time = 6.22 Hours
 Average Penetration Rate = 20.90 Feet / Hour
 Total Redrill Time = 2.92 Hours
 Average Penetration Rate = 21.23 Feet / Hour
 Verticality Information
 At Full Depth = 4.75" North X 2.5" West
 S-ARC North = 33.14"
 S-ARC South = 24.42"

Quality Coring: None.

Comments:

Secondary Pile #670
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
10/13/93	1	DHD130A	130		15.66		10/13/93			36.5	30.4	20.2%

Total Drill Time = 15.66 Hours
Average Penetration Rate = 8.30 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.28" North X 0" East / West
S-ARC North = 24.42"
S-ARC South = 26.37"

Quality Coring: None.

Comments:

Primary Pile #671
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
10/29/93	2	240	130		6.67		10/29/93			35	30.4	15.3%

Total Drill Time = 6.67 Hours
Average Penetration Rate = 19.49 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.0" North X 0.5" West
S-ARC North = 26.37"
S-ARC South = 24.51"

Quality Coring: None.

Comments:

Secondary Pile #672
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)					
10/08/93	1	DHD130A	130		16.92		10/11/93		39.5	30.4	30.1%

Total Drill Time = 16.92 Hours
Average Penetration Rate = 7.68 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 1.5° North X 2.0° West
S-ARC North = 24.51"
S-ARC South = 25.27"

Quality Coring: None.

Comments:

Primary Pile #673
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)					
10/30/93	2	XL-24	130		5.97		11/01/93		35	30.4	15.3%

Total Drill Time = 5.97 Hours
Average Penetration Rate = 21.78 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 0.75° North X 1.75° East
S-ARC North = 25.27"
S-ARC South = 25.58"

Quality Coring: None.

Comments:

Secondary Pile #674
Area "C"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
10/07/93	1	DHD130A	130		11.17		11.64		10/07/93			34	30.4	12.0%

Total Drill Time = 11.17 Hours
Average Penetration Rate = 11.64 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 0' North / South X 0' East / West
S-ARC North = 25.58"
S-ARC South = 32.98"

Quality Coring: None.

Comments:

Primary Pile #675
Area "C"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
11/03/93	1	DHD130A	130		8.55		15.20		11/03/93			35	30.4	15.3%

Total Drill Time = 8.55 Hours
Average Penetration Rate = 15.20 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information
At Full Depth = 6.0' North X 6.75' West
S-ARC North = 32.98"
S-ARC South = 19.12"

Quality Coring: None.

Comments:

Secondary Pile #676
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
09/28/93	1	DHD130A	130		11.25		09/28/93			35	30.4	15.3%

Total Drill Time = 11.25 Hours
Average Penetration Rate = 11.56 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 2.0" North X 0" East / West
S-ARC North = 19.12"
S-ARC South = 26.35"

Quality Coring: None.

Comments:

Primary Pile #677
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
10/29/93	2	DHD130A	130		9.33		10/29/93			35	30.4	15.3%

Total Drill Time = 9.33 Hours
Average Penetration Rate = 13.93 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 1.75" North X 0" East / West
S-ARC North = 26.35"
S-ARC South = 24.15"

Quality Coring: None.

Comments:

Secondary Pile #678
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)						
09/24/93	1	DHD130A	130		9.75		09/24/93			35	30.4	15.3%

Total Drill Time = 9.75 Hours
Average Penetration Rate = 13.33 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° North / South X 1.0° West
S-ARC North = 24.15"
S-ARC South = 27.47"

Quality Coring: None.

Comments:

Primary Pile #679
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)						
10/27/93	2	DHD130A	130		10.00		10/27/93			35	30.4	15.3%

Total Drill Time = 10.00 Hours
Average Penetration Rate = 13.00 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0.5° North X 0.5° West
S-ARC North = 27.47"
S-ARC South = 24.42"

Quality Coring: None.

Comments:

Secondary Pile #680
Area "C"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
09/30/93	1	DHD130A	130		9.16		14.19		09/30/93			35	30.4	15.3%

Total Drill Time = 9.16 Hours
Average Penetration Rate = 14.19 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.0° South X 1.5° East
S-ARC North = 24.42"
S-ARC South = 29.28"

Quality Coring: None.

Comments:

Primary Pile #681
Area "C"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
10/28/93	2	XL-24	130		5.00		26.00		10/28/93			32	30.4	5.4%
11/13/93	1	DHD130A	124	124	9.59		12.93		11/13/93			35	29.0	20.9%

Total Drill Time = 5.00 Hours
Average Penetration Rate = 26.00 Feet / Hour

Total Redrill Time = 9.59 Hours
Average Penetration Rate = 12.93 Feet / Hour

Verticality Information
At Full Depth = 1.0° North X 1.25° West
S-ARC North = 29.28"
S-ARC South = 27.48"

Quality Coring: None.

Comments: Verticality cage in hole. Cavity developed on platform; backfilled with 35 cy concrete.

Secondary Pile #682
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
10/02/93	1	130		7.75		16.77		10/04/93			35	30.4	15.3%

Total Drill Time = 7.75 Hours
Average Penetration Rate = 16.77 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5" North X 0.5" East
S-ARC North = 27.48"
S-ARC South = 24.43"

Quality Coring: None.

Comments:

Primary Pile #683
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
10/23/93	2	130		7.08		18.36		10/23/93			35	30.4	15.3%

Total Drill Time = 7.08 Hours
Average Penetration Rate = 18.36 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0" North / South X 0" East / West
S-ARC North = 24.43"
S-ARC South = 26.67"

Quality Coring: None.

Comments:

Secondary Pile #684
Area "C"

CUT-OFF WALL EXCAVATION							CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/05/93	1	DHD130A	130		8.17		15.91		15.91	10/05/93			35	30.4	15.3%

Total Drill Time = 8.17 Hours
 Average Penetration Rate = 15.91 Feet / Hour
 Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 0° North / South X 1.75° West
 S-ARC North = 26.67"
 S-ARC South = 28.09"

Quality Coring: None.

Comments:

Primary Pile #685
Area "C"

CUT-OFF WALL EXCAVATION							CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/21/93	2	DHD130A	130		9.25		14.05		14.05	10/21/93			35	30.4	15.3%

Total Drill Time = 9.25 Hours
 Average Penetration Rate = 14.05 Feet / Hour
 Total Redrill Time = None
 Average Penetration Rate = None

Verticality Information
 At Full Depth = 1.0° North X 0.25° West
 S-ARC North = 28.09"
 S-ARC South = 25.09"

Quality Coring: None.

Comments:

Secondary Pile #686
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/07/93	DHD130A	130		12.50		10.40		10/07/93			34	30.4	12.0%

Total Drill Time = 12.50 Hours
Average Penetration Rate = 10.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° North / South X 2.5° East
S-ARC North = 25.08"
S-ARC South = 22.00"

Quality Coring: None.

Comments:

Primary Pile #687
Area "C"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
01/21/94	DHD130A	130		4.67		27.84		01/21/94			35.5	30.4	16.9%

Total Drill Time = 4.67 Hours
Average Penetration Rate = 27.84 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.0° South X 0° East / West
S-ARC North = 22.00"
S-ARC South = 30.59"

Quality Coring: None.

Comments:

Secondary Pile #688

Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
10/09/93	1	DHD130A	130	130	9.45	1.75	13.76	17.14	01/01/00	6	30.4	30.4	-80.2%						
12/17/93	1	DHD130A	30	30	30	2.66	17.14	30	12/17/93		7.0	7.0	328.2%						
01/12/94	1	DHD130A	130	130	130	2.66	48.87	48.87	01/13/94		36.5	30.4	20.2%						

Total Drill Time = 9.45 Hours
 Average Penetration Rate = 13.76 Feet / Hour
 Total Redrill Time = 4.41 Hours
 Average Penetration Rate = 36.28 Feet / Hour

Verticality Information
 At Full Depth = 0' North / South X 2.5' East
 S-ARC North = 30.59"
 S-ARC South = 20.71"

Quality Coring: None.

Comments: Hole caved in to 22' after drilling to 130' on 10/9/93. Placed 6cy of concrete
 Hole connected with hole 672

Primary Pile #689

Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak					
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)											
01/24/94	1	DHD130A	64	64	2.91	2.25	21.99	28.44	01/25/94	16	14.9	14.9	7.1%						
02/11/94	1	XL-24	130	64	2.80	2.25	23.57	28.44	02/14/94		34.5	30.4	13.6%						
02/23/94	2	DHD130A	130	130	7.00	2.66	48.87	48.87	02/24/94		34.5	30.4	13.6%						

Total Drill Time = 5.71 Hours
 Average Penetration Rate = 22.77 Feet / Hour
 Total Redrill Time = 2.25 Hours
 Average Penetration Rate = 28.44 Feet / Hour

Verticality Information
 At Full Depth = 3.5" South X 2.0" West
 S-ARC North = 20.71"
 S-ARC South = 31.29"

Quality Coring: None.

Comments: Hole redrilled accidentally by contractor on 2/23/94

Secondary Pile #690
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)					
10/15/93	1	DHD130A	94		5.88	15.99	10/15/93	25		22.0	13.9%
01/31/94	1	DHD130A	130	94	2.00	18.00	02/01/94		34.5	30.4	13.6%

Total Drill Time = 7.88 Hours
 Average Penetration Rate = 16.50 Feet / Hour
 Total Redrill Time = 3.35 Hours
 Average Penetration Rate = 28.06 Feet / Hour
 Verticality Information
 At Full Depth = 0° North / South X 0° East / West
 S--ARC North = 31.29°
 S--ARC South = 21.92°

Quality Coring: None.

Comments: 10/15/93 depth of concrete placement = 30'; sinkhole developed took 23 cy on upstream, 2nd sinkhole on downstream side of rig took 29 cy.

Primary Pile #691
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT / HR)	Redrill (FT / HR)					
01/26/94	1	DHD130A	60		3.17	18.93	01/27/94	16		14.0	14.2%
02/15/94	2	XL-24	130	60	1.92	36.46	02/16/94		36	30.4	18.6%

Total Drill Time = 5.09 Hours
 Average Penetration Rate = 25.54 Feet / Hour
 Total Redrill Time = 4.08 Hours
 Average Penetration Rate = 14.71 Feet / Hour
 Verticality Information
 At Full Depth = 3.0° South X 3.0° West
 S--ARC North = 21.92°
 S--ARC South = 29.16°

Quality Coring: None.

Comments:

Secondary Pile #692
Area "D"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
01/24/94	1	DHD130A	65		3.16		20.57		01/24/94	60			15.2	295.3%
02/03/94	1	XL-24	130	65	2.87	0.97	22.65	67.01	02/04/94			36.5	30.4	20.2%

Total Drill Time = 6.03 Hours
 Average Penetration Rate = 21.56 Feet / Hour
 Total Redrill Time = 0.97 Hours
 Average Penetration Rate = 67.01 Feet / Hour

Verticality Information
 At Full Depth = 1.0° South X 0.25° East
 S-ARC North = 29.16"
 S-ARC South = 28.70"

Quality Coring: None.

Comments: Connected with pile 717. Both holes 692 & 717 filled simultaneously with grout - 60 cy total.

Primary Pile #693
Area "D"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
01/28/94	1	DHD130A	63		2.62		24.05		01/29/93	18			14.7	22.4%
02/22/94	2	XL-24	130	63	2.90	1.60	23.10	39.38	02/22/94			34.5	30.4	13.6%

Total Drill Time = 5.52 Hours
 Average Penetration Rate = 23.53 Feet / Hour
 Total Redrill Time = 1.60 Hours
 Average Penetration Rate = 39.38 Feet / Hour

Verticality Information
 At Full Depth = 0.5° North X 2.5° East
 S-ARC North = 28.70"
 S-ARC South = 26.01"

Quality Coring: None.

Comments: 1/29/93 18 cu. yds. in pile, 48 cu. yds. for platform collapse, near pile 695 upstream of wall.

Secondary Pile #694
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
01/25/94	1	DHD130A	59		4.92		01/26/94	18			13.8	30.6%
02/15/94	1	XL-24	130	59	3.97	1.78	02/15/94			34	30.4	12.0%

Total Drill Time = 8.89 Hours
 Average Penetration Rate = 14.62 Feet / Hour
 Total Redrill Time = 1.78 Hours
 Average Penetration Rate = 33.15 Feet / Hour

Verticality Information
 At Full Depth = 0° North / South X 1.5° East
 S-ARC North = 26.01"
 S-ARC South = 23.70"

Quality Coring: None.

Comments:

Primary Pile #695
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)						
02/02/94	1	DHD130A	60		3.50		02/02/94	16			14.0	14.2%
02/26/94	2	XL-24	130	60	2.92	1.58	02/26/94			36.5	30.4	20.2%

Total Drill Time = 6.42 Hours
 Average Penetration Rate = 20.25 Feet / Hour
 Total Redrill Time = 1.58 Hours
 Average Penetration Rate = 37.97 Feet / Hour

Verticality Information
 At Full Depth = 1.75° South X 2.5° West
 S-ARC North = 23.70"
 S-ARC South = 26.49"

Quality Coring: None.

Comments:

Secondary Pile #696
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION												
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	Drilling Date	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
01/27/94	1	DHD130A	44		3.27		13.46		01/28/94	12			10.3	16.8%	01/28/94						10.3	16.8%
02/18/94	2	DHD130A	130	44	5.83	1.92	14.75	22.92	02/18/94			35	30.4	15.3%	02/18/94					35	30.4	15.3%

Total Drill Time = 9.10 Hours
 Average Penetration Rate = 14.29 Feet / Hour
 Total Redrill Time = 1.92 Hours
 Average Penetration Rate = 22.92 Feet / Hour

Verticality Information
 At Full Depth = 1.75" South X 0.5" East
 S-ARC North = 28.49"
 S-ARC South = 28.30"

Quality Coring: None.

Comments: Connected with pile 720

Primary Pile #697
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION												
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	Drilling Date	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak	
02/11/94	1	DHD130A	59		4.00		14.75		02/11/94	20			13.8	45.2%	02/11/94						13.8	45.2%
03/02/94	2	DHD130A	130	59	4.71	3.12	15.07	18.91	03/03/94			34.5	30.4	13.6%	03/03/94					34.5	30.4	13.6%

Total Drill Time = 8.71 Hours
 Average Penetration Rate = 14.93 Feet / Hour
 Total Redrill Time = 3.12 Hours
 Average Penetration Rate = 18.91 Feet / Hour

Verticality Information
 At Full Depth = 0.5" South X 2.0" West
 S-ARC North = 28.30"
 S-ARC South = 33.84"

Quality Coring: None.

Comments:

Secondary Pile #698
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/03/94	1	DHD130A	60		5.08		11.81		02/03/94	16			14.0	14.2%
02/23/94	2	XL-24	130	60	3.40	0.93	20.59	64.52	02/23/94			35.5	30.4	16.9%

Total Drill Time = 8.48 Hours
Average Penetration Rate = 15.33 Feet / Hour

Total Redrill Time = 0.93 Hours
Average Penetration Rate = 64.52 Feet / Hour

Verticality Information
At Full Depth = 5.0° North X 3.0° West
S-ARC North = 33.84"
S-ARC South = 20.38"

Quality Coring: None.

Comments:

Primary Pile #699
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/14/94	1	DHD130A	54		3.17		17.03		02/14/94	15			12.6	19.0%
02/28/94	2	DHD130A	130	54	4.60	2.07	16.52	26.09	03/01/94			32.5	30.4	7.1%

Total Drill Time = 7.77 Hours
Average Penetration Rate = 16.73 Feet / Hour

Total Redrill Time = 2.07 Hours
Average Penetration Rate = 26.09 Feet / Hour

Verticality Information
At Full Depth = 1.0° North X 1.0° West
S-ARC North = 20.38"
S-ARC South = 26.04"

Quality Coring: None.

Comments:

Secondary Pile #700
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
02/05/94	1	DHD130A	62	62	6.58	2.58	9.42	16		34	14.5	10.5%
02/22/94	2	DHD130A	131	62	4.58	2.58	15.07				30.6	11.1%

Total Drill Time = 11.16 Hours
 Average Penetration Rate = 11.74 Feet / Hour
 Total Redrill Time = 2.58 Hours
 Average Penetration Rate = 24.03 Feet / Hour

Verticality Information
 At Full Depth = 0.5" North X 1.5" West
 S-ARC North = 26.04"
 S-ARC South = 29.45"

Quality Coring: None.

Comments:

Primary Pile #701
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
02/16/94	2	XL-24	65	65	3.80	3.20	17.11	18		35	15.2	18.6%
02/26/94	2	DHD130A	130	65	5.30	3.20	12.26				30.4	15.3%

Total Drill Time = 9.10 Hours
 Average Penetration Rate = 14.29 Feet / Hour
 Total Redrill Time = 3.20 Hours
 Average Penetration Rate = 20.31 Feet / Hour

Verticality Information
 At Full Depth = 2.5" North X 0.5" West
 S-ARC North = 29.45"
 S-ARC South = 26.02"

Quality Coring: None.

Comments:

Secondary Pile #702
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/18/93	2	240	31	1.00			31.00			10/19/93		13		7.2	79.6%
02/03/94	1	DHD130A	33	0.17	31	1.50	11.76		20.67	02/04/94	30			7.7	289.3%
02/19/94	2	DHD130A	130	5.37	33	1.22	18.06		27.05	02/19/94			35	30.4	15.3%

Total Drill Time = 6.54 Hours
Average Penetration Rate = 19.88 Feet / Hour

Total Redrill Time = 2.72 Hours
Average Penetration Rate = 23.53 Feet / Hour

Verticality Information
At Full Depth = 2.0° North X 0.5° East
S-ARC North = 26.02°
S-ARC South = 22.98°

Quality Coring: None.

Comments: Connected with pile 709, both piles 702 & 709 filled simultaneously with grout

Primary Pile #703
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate (FT / HR)	Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/11/94	1	DHD130A	52	4.58			11.35			02/11/94	25			12.1	105.9%
03/03/94	2	DHD130A	130	6.00	52	3.00	13.00		17.33	03/04/94			32	30.4	5.4%

Total Drill Time = 10.58 Hours
Average Penetration Rate = 12.29 Feet / Hour

Total Redrill Time = 3.00 Hours
Average Penetration Rate = 17.33 Feet / Hour

Verticality Information
At Full Depth = 0.5° South X 0° East / West
S-ARC North = 22.98°
S-ARC South = 23.81°

Quality Coring: None.

Comments:

Secondary Pile #704
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/13/94	1	DHD130A	44		6.17		7.13		10/13/94	18			10.3	75.2%
02/02/94	1	DHD130A	27	27	1.42		19.01	19.01	02/02/94	24			6.3	280.7%
02/15/94	2	XL-24	65	44	1.17		17.95	53.01	02/15/94	25			15.2	64.7%
02/23/94	2	XL-24	130	65	2.84		22.89	65.00	02/23/94			36	30.4	18.6%

Total Drill Time = 10.18 Hours
 Average Penetration Rate = 12.77 Feet / Hour
 Total Redrill Time = 3.25 Hours
 Average Penetration Rate = 41.85 Feet / Hour

Verticality Information
 At Full Depth = 2.5" South X 0.25" East
 S-ARC North = 23.81"
 S-ARC South = 30.14"

Quality Coring: None.

Comments:

Primary Pile #705
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/08/94	1	DHD130A	61		4.25		14.35		02/08/94	20			14.2	40.4%
03/02/94	2	DHD130A	130	61	4.18	2.81	16.51	21.71	03/02/94			35	30.4	15.3%

Total Drill Time = 8.43 Hours
 Average Penetration Rate = 15.42 Feet / Hour
 Total Redrill Time = 2.81 Hours
 Average Penetration Rate = 21.71 Feet / Hour

Verticality Information
 At Full Depth = 0" North / South X 0" East / West
 S-ARC North = 30.14"
 S-ARC South = 25.27"

Quality Coring: None.

Comments:

Secondary Pile #706
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION			
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)
09/29/93	1	DHD130A	130	12.92		10.06	
					Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)
					09/30/93		35
							Spec. Concrete (CU.YD.)
							Theoretical Volume (CU.YD.)
							30.4
							Overbreak
							15.3%

Total Drill Time = 12.92 Hours
Average Penetration Rate = 10.06 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.0° South X 1.0° West
S-ARC North = 25.27°
S-ARC South = 25.29°

Quality Coring: None.

Comments:

Primary Pile #707
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION			
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)
01/26/94	1	DHD130A	57	5.41		10.54	
02/26/94	2	XL-24	130	2.90	57	25.17	44.88
					Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)
					01/27/94	11	
							Spec. Concrete (CU.YD.)
							Theoretical Volume (CU.YD.)
							13.3
							30.4
							Overbreak
							-17.4%
							8.7%

Total Drill Time = 8.31 Hours
Average Penetration Rate = 15.64 Feet / Hour

Total Redrill Time = 1.27 Hours
Average Penetration Rate = 44.88 Feet / Hour

Verticality Information
At Full Depth = 2.0° South X 0° East / West
S-ARC North = 25.29°
S-ARC South = 28.83°

Quality Coring: None.

Comments:

Secondary Pile #708
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION			
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)
09/23/93	1	DHD130A	130	11.75		11.06	

Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
09/23/93			39	30.4	28.5%

Total Drill Time = 11.75 Hours
Average Penetration Rate = 11.06 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0.5° South X 0° East / West
S-ARC North = 28.83"
S-ARC South = 30.14"

Quality Coring: None.
Comments:

Primary Pile #709
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION			
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT/HR)	Redrill (FT/HR)
01/25/94	1	DHD130A	25	1.57		15.92	
01/28/94	1	DHD130A	28	0.18	25	16.67	100.00
02/03/94	1	DHD130A	30	0.08	28	25.00	41.79
02/08/94	1	DHD30	62	3.20	30	10.00	16.67
02/18/94	2	XL-24	130	6.75	62	10.07	52.99

Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
01/26/94				5.8	105.6%
01/29/93				6.5	129.4%
02/04/94				7.0	14.2%
02/08/94				14.5	52.0%
02/18/94			34	30.4	12.0%

Total Drill Time = 11.78 Hours
Average Penetration Rate = 11.04 Feet / Hour

Total Redrill Time = 3.89 Hours
Average Penetration Rate = 37.28 Feet / Hour

Verticality Information
At Full Depth = 2.0° North X 0.5° East
S-ARC North = 30.14"
S-ARC South = 23.00"

Quality Coring: None.
Comments: Cavity at 25', Connected with pile 702 while grouting on 02/04/94

Secondary Pile #710
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/01/93	1	DHD130A	130		22.59		5.75	10/02/93			35	30.4	15.3%

Total Drill Time = 22.59 Hours
Average Penetration Rate = 5.75 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0.5° South X 0° East / West
S--ARC North = 23.00"
S--ARC South = 25.30"

Quality Coring: None.

Comments:

Primary Pile #711
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
01/24/94	1	DHD130A	61		4.08		14.95	01/25/94				14.2	40.4%
02/01/94	1	DHD130A	130		6.33	2.83	10.90	02/01/94	20		32.5	30.4	7.1%

Total Drill Time = 10.41 Hours
Average Penetration Rate = 12.49 Feet / Hour

Total Redrill Time = 2.83 Hours
Average Penetration Rate = 21.55 Feet / Hour

Verticality Information
At Full Depth = 1.5° South X 0° East / West
S--ARC North = 25.30"
S--ARC South = 24.49"

Quality Coring: None.

Comments:

Secondary Pile #712
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/05/93	1	DHD130A	130	17.33			7.50		10/05/93			36.5	30.4	20.2%

Total Drill Time = 17.33 Hours
Average Penetration Rate = 7.50 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 3.0° South X 1.5° West
S-ARC North = 24.49°
S-ARC South = 30.75°

Quality Coring: None.

Comments:

Primary Pile #713
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (FT)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/04/94	1	DHD130A	44	2.50			17.60		02/08/94	8.2			10.3	-20.2%
02/21/94	2	DHD130A	38		38	2.00		19.00	02/21/94	25			8.9	181.7%
02/24/94	2	DHD130A	66		44	1.03		42.72	02/24/94	25			15.4	62.2%
03/09/94	2	XL-24	130		66	1.33		49.62	03/10/94			34.5	30.4	13.6%

Total Drill Time = 5.88 Hours
Average Penetration Rate = 22.11 Feet / Hour

Total Redrill Time = 4.36 Hours
Average Penetration Rate = 33.94 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 0.25° West
S-ARC North = 30.75°
S-ARC South = 25.21°

Quality Coring: None.

Comments: Connected with pile 719

Secondary Pile #714
Area "D"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time (HRS)	Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Redrill (HRS)	Drill (FT / HR)						
10/06/93	1	DHD130A	50		3.75		13.33		24			11.7	105.6%
10/19/93	2	DHD130A	123	50	6.58	4.17	11.09		36			28.7	25.3%
01/22/94	1	DHD130A	27	27	1.50	1.50	18.00	60			6.3	6.3	851.6%
01/27/94	1	DHD130A	46	46	1.83	1.83	25.14	34			10.7	10.7	216.5%
02/12/94	1	XL-24	55	55	1.58	1.58	34.81	47			12.8	12.8	285.9%
02/28/94	1	XL-24	130	123	1.25	6.25	19.68			38	30.4	30.4	25.2%

Total Drill Time = 11.58 Hours
Average Penetration Rate = 11.23 Feet / Hour

Total Redrill Time = 15.33 Hours
Average Penetration Rate = 19.63 Feet / Hour

Verticality Information
At Full Depth = 1.0° South X 1.5° East
S-ARC North = 25.21"
S-ARC South = 31.77"

Quality Coring: None.

Comments: The side of hole upstream caved as hole was drilled past overburden trench causing a cave in side of hole.
Cavity 42-50', lost circulation at 49'. Caved in from 123' to 15 feet on 10/19/93.
Platform collapsed upstream requiring 99 cy of grout to fill.

Primary Pile #715
Area "D"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time (HRS)	Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Redrill (HRS)	Drill (FT / HR)						
01/29/94	1	DHD130A	43									10.0	79.3%
03/04/94	2	XL-24	130	43				18			33	30.4	8.7%

Total Drill Time = Hours
Average Penetration Rate = Feet / Hour

Total Redrill Time = Hours
Average Penetration Rate = Feet / Hour

Verticality Information
At Full Depth = 3.0° North X 4.5° East
S-ARC North = 31.77"
S-ARC South = 20.88"

Quality Coring: None.

Comments:

Secondary Pile #716
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/11/93	1	DHD130A	130	8.25		15.76		10/12/93			36	30.4	18.6%

Total Drill Time = 8.25 Hours
Average Penetration Rate = 15.76 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° North / South X 2.0° West
S-ARC North = 20.88°
S-ARC South = 30.66°

Quality Coring: None.

Comments:

Primary Pile #717
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
01/24/94	1	DHD130A	42	2.00		21.00		01/24/94				9.8	511.8%
03/03/94	2	DHD130A	131	5.75	42	15.48	1.17	03/04/94	60		33	30.6	7.9%

Total Drill Time = 7.75 Hours
Average Penetration Rate = 16.90 Feet / Hour

Total Redrill Time = 1.17 Hours
Average Penetration Rate = 35.90 Feet / Hour

Verticality Information
At Full Depth = 3.0° North X 0° East / West
S-ARC North = 30.66°
S-ARC South = 22.12°

Quality Coring: None.

Comments: Connected with pile 692, holes filled simultaneously - 60 cy total.

Secondary Pile #718
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/14/93	1	240	130	7.92		16.41		10/15/93			36	30.4	18.6%

Total Drill Time = 7.92 Hours
Average Penetration Rate = 16.41 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Vertically Information

At Full Depth = 0' North / South X 1.5" West
S-ARC North = 22.12"
S-ARC South = 18.78"

Quality Coring: None.

Comments:

Primary Pile #719
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/04/94	1	DHD130A	38	2.13		17.84		02/08/94	35			8.9	294.4%
02/16/94	2	XL-24	65	1.17	0.83	23.08	45.78	02/16/94	22			15.2	44.9%
03/06/94	2	XL-24	130	3.08	1.67	21.10	38.92	03/07/94		34		30.4	12.0%

Total Drill Time = 6.38 Hours
Average Penetration Rate = 20.38 Feet / Hour

Total Redrill Time = 2.50 Hours
Average Penetration Rate = 41.20 Feet / Hour

Vertically Information

At Full Depth = 4.75" South X 1.75" East
S-ARC North = 18.78"
S-ARC South = 35.32"

Quality Coring: None.

Comments: Connected with pile 713, both holes grouted simultaneously.

Secondary Pile #720
Area "D"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time (HRS)	Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (FT / HR)	Redrill (FT / HR)						
10/16/93	1	XL-24	44		1.17	37.61		10/16/93			9.0	10.3	-12.4%
01/27/94	1	DHD130A	30	30	1.67	17.96	30	01/28/94	2.3			7.0	361.1%
02/23/94	2	XL-24	131	44	3.58	24.30	44	02/23/94			34	30.6	11.1%

Total Drill Time = 4.75 Hours
Average Penetration Rate = 27.58 Feet / Hour

Total Redrill Time = 2.42 Hours
Average Penetration Rate = 30.58 Feet / Hour

Verticality Information
At Full Depth = 2.0° North X 2.5° East
S-ARC North = 35.32°
S-ARC South = 22.11°

Quality Coring: None.

Comments: Connected with pile 696.

Primary Pile #721
Area "D"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION							
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time (HRS)	Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (FT / HR)	Redrill (FT / HR)						
02/02/94	1	DHD130A	60		2.78	21.58		02/02/94				14.0	28.5%
03/02/94	2	DHD130A	130	60	5.08	13.78	60	03/02/94	18		34	30.4	12.0%

Total Drill Time = 7.86 Hours
Average Penetration Rate = 16.54 Feet / Hour

Total Redrill Time = 3.25 Hours
Average Penetration Rate = 18.46 Feet / Hour

Verticality Information
At Full Depth = 1.0° South X 1.0° East
S-ARC North = 22.11°
S-ARC South = 29.88°

Quality Coring: None.

Comments:

Secondary Pile #722
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
10/18/93	2	240	47	1.84		25.54		10/18/93		18		11.0	64.0%
02/19/94	2	DHD130A	130	6.18	2.57	13.43	18.29	02/19/94			34	30.4	12.0%

Total Drill Time = 8.02 Hours
 Average Penetration Rate = 16.21 Feet / Hour
 Total Redrill Time = 2.57 Hours
 Average Penetration Rate = 18.29 Feet / Hour

Verticality Information
 At Full Depth = 1.5" North X 2.0" West
 S-ARC North = 29.88"
 S-ARC South = 21.31"

Quality Coring: None.

Comments:

Primary Pile #723
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/02/94	1	DHD130A	60	3.75		16.00		02/03/94				14.0	28.5%
03/10/94	2	XL-24	130	3.08	1.50	22.73	40.00	03/11/94			36	30.4	18.6%

Total Drill Time = 6.83 Hours
 Average Penetration Rate = 19.03 Feet / Hour
 Total Redrill Time = 1.50 Hours
 Average Penetration Rate = 40.00 Feet / Hour

Verticality Information
 At Full Depth = 2.0" South X 3.0" West
 S-ARC North = 21.31"
 S-ARC South = 29.02"

Quality Coring: None.

Comments:

Secondary Pile #724
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
10/21/94	1	DHD130A	60		3.58		16.76		01/26/94	18		33.5	14.0	28.5%
02/25/94	2	DHD130A	130	60	5.33	2.50	13.13	24.00	02/25/94				30.4	10.4%

Total Drill Time = 8.91 Hours
 Average Penetration Rate = 14.59 Feet / Hour
 Total Redrill Time = 2.50 Hours
 Average Penetration Rate = 24.00 Feet / Hour

Vertically Information
 At Full Depth = 0' North / South X 1.0' East
 S-ARC North = 29.02'
 S-ARC South = 23.76"

Quality Coring: None.

Comments:

Primary Pile #725
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/03/94	1	DHD130A	60		2.25		26.67		02/04/94	20		34.5	14.0	42.7%
03/04/94	2	XL-24	130	60	2.67	1.67	26.22	35.93	03/05/94				30.4	13.6%

Total Drill Time = 4.92 Hours
 Average Penetration Rate = 26.42 Feet / Hour
 Total Redrill Time = 1.67 Hours
 Average Penetration Rate = 35.93 Feet / Hour

Vertically Information
 At Full Depth = 2.0' South X 0' East / West
 S-ARC North = 23.76"
 S-ARC South = 28.12"

Quality Coring: None.

Comments:

Secondary Pile #726
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/28/94	1	DHD130A	30		1.08		27.78		01/29/94	12	2.3		7.0	104.1%
02/21/94	2	DHD130A	60	30	1.80	0.73	16.67	41.10	02/22/94	40			14.0	185.8%
02/26/94	2	XL-24	131	60	3.00	0.80	23.67	75.00	02/28/94			38	30.6	24.2%

Total Drill Time = 5.88 Hours
Average Penetration Rate = 22.28 Feet / Hour
Total Redrill Time = 1.53 Hours
Average Penetration Rate = 58.82 Feet / Hour

Verticality Information
At Full Depth = 1.0° South X 1.0° East
S--ARC North = 28.12"
S--ARC South = 26.64"

Quality Coring: None.

Comments:

Primary Pile #727
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/14/94	1	DHD130A	63		3.20		19.69		02/14/94	39			14.7	165.1%
03/07/94	2	XL-24	130	63	2.50	1.33	26.80	47.37	03/10/94			35	30.4	15.3%

Total Drill Time = 5.70 Hours
Average Penetration Rate = 22.81 Feet / Hour
Total Redrill Time = 1.33 Hours
Average Penetration Rate = 47.37 Feet / Hour

Verticality Information
At Full Depth = 0.75° South X 3.0° West
S--ARC North = 26.64"
S--ARC South = 27.20"

Quality Coring: None.

Comments:

Secondary Pile #728
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/08/94	1	DHD130A	61	61	4.91	2.17	12.42	28.11	02/08/94	15		34.5	14.2	5.3%
03/02/94	2	DHD130A	130	61	4.92	2.17	14.02	28.11	03/03/94			34.5	30.4	13.6%

Total Drill Time = 9.83 Hours
Average Penetration Rate = 13.22 Feet / Hour

Total Redrill Time = 2.17 Hours
Average Penetration Rate = 28.11 Feet / Hour

Verticality Information
At Full Depth = 0° North / South X 1.5° East
S--ARC North = 27.20"
S--ARC South = 23.78"

Quality Coring: None.
Comments:

Primary Pile #729
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/17/94	2	DHD130A	67	67	4.66	1.58	14.38	42.41	02/17/94	64		34	15.6	309.1%
03/11/94	2	XL-24	131	67	2.42	1.58	26.45	42.41	03/12/94			34	30.6	11.1%

Total Drill Time = 7.08 Hours
Average Penetration Rate = 18.50 Feet / Hour

Total Redrill Time = 1.58 Hours
Average Penetration Rate = 42.41 Feet / Hour

Verticality Information
At Full Depth = 2.0° South X 2.25° East
S--ARC North = 23.78"
S--ARC South = 27.83"

Quality Coring: None.
Comments: 2/17/94 34 cu. yd. re-pour of grout due to lost bit.

Secondary Pile # 730
Area "D"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/27/94	1	DHD130A	27		27	1.17		23.08		01/27/94	21			6.3	233.1%
02/23/94	2	DHD130A	65		65	1.42	1.18	26.76	22.88	02/23/94	22			15.2	44.9%
03/02/94	1	DHD130A	130		130	5.83	2.58	11.15	25.19	03/02/94		35		30.4	15.3%

Total Drill Time = 8.42 Hours
 Average Penetration Rate = 15.44 Feet / Hour
 Total Redrill Time = 3.76 Hours
 Average Penetration Rate = 24.47 Feet / Hour

Verticality Information
 At Full Depth = 1" South X 1" West
 S-ARC North = 23.78
 S-ARC South = 28.15

Quality Coring: None.

Comments:

Primary Pile # 731
Area "D"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
02/11/94	2	DHD130A	56		56	3.47	1.25	16.14	16.14	02/11/94	54			13.1	312.9%
03/06/94	1	XL-24	131		131	2.67	1.25	28.09	44.80	03/07/94		34		30.6	11.1%

Total Drill Time = 6.14 Hours
 Average Penetration Rate = 21.34 Feet / Hour
 Total Redrill Time = 1.25 Hours
 Average Penetration Rate = 44.80 Feet / Hour

Verticality Information
 At Full Depth = 0" N/S X 1.5" West
 S-ARC North = 28.15
 S-ARC South = 28.43

Quality Coring: None.

Comments:

Secondary Pile # 732
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
01/24/94	1	DHD130A	25		1.17		21.37		01/25/94	18			5.8	208.3%
01/29/94	1	DHD130A	31	25	0.27	0.53	22.22	47.17	01/29/94	12	1		7.2	79.6%
02/19/94	1	DHD130A	65	31	1.75	1.08	19.43	28.70	02/19/94	20			15.2	31.8%
02/24/94	2	XL-24	131	31	2.92	1.25	34.25	24.80	02/26/94			34	30.6	11.1%

Total Drill Time = 6.11 Hours
 Average Penetration Rate = 27.00 Feet / Hour
 Total Redrill Time = 2.86 Hours
 Average Penetration Rate = 30.42 Feet / Hour

Verticality Information
 At Full Depth = 1.25" North X 0" E/W
 S-ARC North = 28.15
 S-ARC South = 28.42

Quality Coring: None.
 Comments:

Primary Pile # 733
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
02/04/94	1	DHD130A	60		2.85		21.05		02/05/94	92			14.0	556.6%
03/10/94	2	XL-24	130	60	3.25	1.67	21.54	35.93	03/11/94			34	30.4	12.0%

Total Drill Time = 6.10 Hours
 Average Penetration Rate = 21.31 Feet / Hour
 Total Redrill Time = 1.67 Hours
 Average Penetration Rate = 35.93 Feet / Hour

Verticality Information
 At Full Depth = 2.5" North X 1.5" East
 S-ARC North = 28.43
 S-ARC South = 20.34

Quality Coring: None.
 Comments:

Secondary Pile # 734
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Drill (FT/HR)						
01/26/94	1	DHD130A	29		1.42		20.42			01/26/94	12			6.8	77.2%
02/16/94	2	XL-24	65	29	1.08	0.58	33.33			02/16/94	37			15.2	143.8%
02/24/94	2	DHD130A	130	65	4.59	2.08	14.16			02/24/94		35.5		30.4	16.9%

Total Drill Time = 7.09 Hours
 Average Penetration Rate = 18.34 Feet / Hour
 Total Redrill Time = 2.66 Hours
 Average Penetration Rate = 35.34 Feet / Hour

Verticality Information
 At Full Depth = 1.5° South X .5° West
 S-ARC North = 28.42
 S-ARC South = 28.77

Quality Coring: None.

Comments:

Primary Pile # 735
Area "D"

CUT-OFF WALL EXCAVATION										CUT-OFF WALL CONSTRUCTION					
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Drill (FT/HR)						
02/02/94	1	DHD130A	56		3.25		17.23			02/03/94	16			13.1	22.4%
03/04/94	2	DHD130A	131	56	4.17	2.67	17.99			03/05/94		33.5		30.6	9.5%

Total Drill Time = 7.42 Hours
 Average Penetration Rate = 17.65 Feet / Hour
 Total Redrill Time = 2.67 Hours
 Average Penetration Rate = 20.97 Feet / Hour

Verticality Information
 At Full Depth = 0° N/S X 2° West
 S-ARC North = 20.34
 S-ARC South = 28.13

Quality Coring: None.

Comments:

Secondary Pile # 736
Area "D"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time			Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Drill (HRS)	Redrill (HRS)						
01/24/94	1	DHD130A	27		27	0.58		46.55				01/25/94	24			6.3	280.7%
01/27/94	1	DHD130A	30	27	30	0.50	0.25	6.00	108.00			01/28/94	12			7.0	71.5%
02/15/94	1	XL-24	65	30	65	1.03	0.67	33.98	44.78			02/15/94	44			15.2	189.9%
02/22/94	2	XL-24	130	65	130	2.75	1.17	23.64	55.56			02/22/94		35.5		30.4	16.9%

Total Drill Time = 4.86 Hours
Average Penetration Rate = 26.75 Feet / Hour

Total Redrill Time = 2.09 Hours
Average Penetration Rate = 58.37 Feet / Hour

Verticality Information
At Full Depth = 1" North X 3" West
S-ARC North = 28.77
S-ARC South = 25.04

Quality Coring: Non NQ from 0' to 127'
Comments:

Primary Pile # 737
Area "D"

CUT-OFF WALL EXCAVATION						CUT-OFF WALL CONSTRUCTION											
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Redrill (FT)	Pure Drill Time			Penetration Rate			Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)		Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Drill (HRS)	Redrill (HRS)						
02/08/94	1	DHD130A	60		60	2.42		24.79				02/08/94	74			14.0	428.2%
03/07/94	2	XL-24	130	60	130	3.16	1.67	22.15	35.93			03/10/94		35		30.4	15.3%

Total Drill Time = 5.58 Hours
Average Penetration Rate = 23.30 Feet / Hour

Total Redrill Time = 1.67 Hours
Average Penetration Rate = 35.93 Feet / Hour

Verticality Information
At Full Depth = 0" N/S X 0" E/W
S-ARC North = 28.13
S-ARC South = 26.76

Quality Coring: None.
Comments: Hole caved in to 30'

Secondary Pile # 738
Area "D"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION												
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time			Penetration Rate			Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)	Drill (FT/HR)	Redrill (FT/HR)						
09/22/94	1	DHD130A	53		2.67			19.85			09/22/94		17		12.4	37.4%
02/01/94	1	DHD130A	53	53		1.00		0.00			02/02/94	18			12.4	45.4%
02/28/94	1	DHD130A	130	53	5.50	1.25		14.00			03/01/94			36.5	30.4	20.2%

Total Drill Time = 8.17 Hours
Average Penetration Rate = 15.91 Feet / Hour

Total Redrill Time = 2.25 Hours
Average Penetration Rate = 47.11 Feet / Hour

Verticality Information
At Full Depth = 0° N/S X 0° E/W
S-ARC North = 28.13
S-ARC South = 26.76

Quality Coring: None.

Comments: Guide wall cracked; Hole fell in to 17' on 9/22/94. Cavity at 53' - Stopped hole

CONFORMING PILE DATA

Conforming Pile # 26--27
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment #	Excavation Method	Drill Footage	Pure Drill Time		Penetration Rate		Concrete Date	Grout	Non-Spec. Concrete	Spec. Concrete	Theoretical Volume	Overbreak
			Drill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)		(CU.YD.)	(CU.YD.)	(CU.YD.)	(CU.YD.)	
05/03/92	1	DHD130A	82	7.33		11.19		05/07/93			21	19.1	9.7%

Total Drill Time = 7.33 Hours
Average Penetration Rate = 11.19 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information At Full Depth = 2.5" South X 1" East

Quality Coring: None.

Comments:

Conforming Pile # 40-41
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION						
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)			
05/04/93	1	DHD130A	153	14.92		10.25				
					Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
					05/12/93			40	35.7	12.0%

Total Drill Time = 14.92 Hours
Average Penetration Rate = 10.25 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Vertically Information
At Full Depth = 1.5' South X 2.25' East
S--ARC North =
S--ARC South =

Quality Coring: None.

Comments:

Conforming Pile # 50-51
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/05/93	1	DHD130A	150	14.08		10.65		05/18/93			38	35.0	8.5%

Total Drill Time = 14.08 Hours
Average Penetration Rate = 10.65 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 2.21" N X 2.48" E
CORD North = 17.33"

Quality Coring: None.

Comments:

Conforming Pile # 55-56
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (FT)	Penetration Rate Drill (FT/HR)	Redrill (FT/HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
05/09/93	1	DHD130A	150	15.58		9.63		05/14/93			40	35.0	14.2%

Total Drill Time = 15.58 Hours
Average Penetration Rate = 9.63 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 6.29" S X 1.31" E
CORD North = 24.06"

Quality Coring: None.

Comments:

Conforming Pile # 58-59
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/06/93	2	XL-24	150		5.08		29.53		01/10/94			40	35.0	14.2%

Total Drill Time = 5.08 Hours
Average Penetration Rate = 29.53 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 2.01" N X 1.63" W
CORD North = 21.18"

Quality Coring: None.

Comments:

Conforming Pile # 63-64
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
06/09/93	2	DHD130A	150		11.00		13.64		06/12/93			39.5	35.0	12.8%

Total Drill Time = 11.00 Hours
Average Penetration Rate = 13.64 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 1.5° S X 4.25° E

S-ARC North =

S-ARC South =

Quality Coring: None.

Comments:

Conforming Pile # 68-69
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)						
01/02/94	2	XL-24	151		5.92		25.51		01/10/94			39	35.3	10.6%

Total Drill Time = 5.92 Hours
Average Penetration Rate = 25.51 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 2.5° N X 3° W

CORD North = 29.90°

Quality Coring: None.

Comments:

Conforming Pile # 76-77
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/07/94	2	XL-24	151		4.58		32.97		01/10/94			39	35.3	10.6%

Total Drill Time = 4.58 Hours
Average Penetration Rate = 32.97 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 0' N/S X 0' E/W
CORD North = 22.39"
S-ARC South =

Quality Coring: None.

Comments:

Conforming Pile # 83-84
Area "A"

CUT-OFF WALL EXCAVATION					CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
06/21/94	1	DHD130A	150		8.75		17.14		06/22/93			40	35.0	14.2%

Total Drill Time = 8.75 Hours
Average Penetration Rate = 17.14 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information
At Full Depth = 2.25" N X 2.5" W
CORD North = 29.86
S-ARC South =

Quality Coring: None.

Comments:

Conforming Pile # 93-94
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)		Penetration Rate (FT / HR)		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/19/93	2	DHD130A	150	11.67		12.85		06/21/93			40	35.0	14.2%

Total Drill Time = 11.67 Hours
Average Penetration Rate = 12.85 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 3.25° S X 3.75° E
CORD North = 23.91"
S-ARC South =

Quality Coring: None.

Comments:

Conforming Pile # 98-99
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)		Penetration Rate (FT / HR)		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/09/93	2	DHD130A	150	10.42		14.40		06/10/93			40	35.0	14.2%

Total Drill Time = 10.42 Hours
Average Penetration Rate = 14.40 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 2.75° N X 2° W
CORD North = 29.96"
S-ARC South =

Quality Coring: None.

Comments:

Conforming Pile # 105-106
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Pure Drill Time (HRS)	Redrill (HRS)						
06/15/93	2	XL-24	150		8.83		06/16/93			40	35.0	14.2%

Total Drill Time = 8.83 Hours
Average Penetration Rate = 16.99 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1" N X 1.75" W
CORD North = 28.99
S-ARC South =

Quality Coring: None.

Comments:

Conforming Pile # 135-136
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/10/93	2	DHD130A	150	9.34		16.06		06/11/93			40	35.0	14.2%

Total Drill Time = 9.34 Hours
Average Penetration Rate = 16.06 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° N/S X 5° W
CORD North = 28.44"
S-ARC South =

Quality Coring: None.

Comments:

Conforming Pile # 149-150
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
06/09/93	2	DHD130A	150		11.42		13.13		06/09/93			40	35.0	14.2%

Total Drill Time = 11.42 Hours
Average Penetration Rate = 13.13 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

02/08/00

Verticality Information

At Full Depth = 1.5" N X 2.25" W
S-ARC North = 28.82"
S-ARC South =

Quality Coring: None.

Comments:

Conforming Pile # 434-435
Area "A"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
01/10/93	2	XL-24	171		5.91		28.93		01/11/93			44	39.9	10.2%

Total Drill Time = 5.91 Hours
Average Penetration Rate = 28.93 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.5" South 1.5" East
S-ARC North =
S-ARC South =

Quality Coring: None.

Comments:

Conforming Pile # 489-490
Area 'A'

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Grout (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
		Excavation Method	Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)						
11/30/93	2	XL-24	170		6.00		28.33	12/01/93			47	39.7	18.4%

Total Drill Time = 6.00 Hours
Average Penetration Rate = 28.33 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 3.5" South 4.0' East

S--ARC North =

S--ARC South =

Quality Coring: None.

Comments:

Conforming Pile #J-502-503
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
08/04/94	1	DHD130A	185		12.83		08/05/94			47	43.2	8.8%

Total Drill Time = 12.83 Hours
Average Penetration Rate = 14.42 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 6.0° South X 9.0° West
Chord, North = 21.0"
Chord, South = 31.44"

Quality Coring: None.

Comments:

Conforming Pile #J 505-506
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (FT/HR)	Redrill (FT/HR)						
08/01/94	2	XL-24	185		11.00		08/03/94			47	43.2	8.8%

Total Drill Time = 11.00 Hours
Average Penetration Rate = 16.82 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 1.0° North X 4.25° East
Chord, North = 26.78"
Chord, South = 24.03"

Quality Coring: None.

Comments:

Conforming Pile #J 512-513
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION								
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (HRS)	Redrill (HRS)	Drill (FT/HR)	Redrill (FT/HR)					
08/25/94	1	DHD130A	185	8.33		22.21		08/26/94		47	43.2	8.8%

Total Drill Time = 8.33 Hours
Average Penetration Rate = 22.21 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 0° North / South X 0° East / West
Chord North = 29.67"
Chord South = 29.67"

Quality Coring: None.

Comments:

COMFORMING PILE # 526-527
Area 'B'

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)					
08/10/94	2	DHD130A	185		9.83		18.82		08/11/94		47	43.2	8.8%

Total Drill Time = 9.83 Hours
Average Penetration Rate = 18.82 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 10.5° South X 8.5° West
CORD North =
CORD South =

Quality Coring: None.

Comments:

CONFORMING PILE # 530-531
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage Drill (FT)	Redrill (FT)	Pure Drill Time Drill (HRS)	Redrill (HRS)	Penetration Rate Drill (FT / HR)	Redrill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/03/94	2	DHD130A	185		13.60		13.60	13.60	08/04/94			47	43.2	8.8%

Total Drill Time = 13.60 Hours
Average Penetration Rate = 13.60 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 6' South X 3.5" West
CORD North =
CORD South =

Quality Coring: None.

Comments:

Conforming Pile #J 544-545
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION									
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage	Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
				Drill (FT)	Redrill (HRS)	Drill (FT / HR)	Redrill (HRS)						
08/08/94	2	DHD130A	185	12.25		15.10		08/09/94			47	43.2	8.8%

Total Drill Time = 12.25 Hours
Average Penetration Rate = 15.10 Feet / Hour

Total Redrill Time = None
Average Penetration Rate = None

Verticality Information
At Full Depth = 10.25° South X 3.75° West
Chord North = 14.53°
Chord South = 32.52°

Quality Coring: None.

Comments:

Conforming Pile #J 573-574
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage		Pure Drill Time		Penetration Rate		Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
			Drill (FT)	Redrill (FT)	Drill (HRS)	Redrill (HRS)	Drill (FT / HR)	Redrill (FT / HR)						
08/15/94	1	DHD130A	185		10.42		17.75		08/18/94			47	43.2	8.8%

Total Drill Time = 10.42 Hours
Average Penetration Rate = 17.75 Feet / Hour

Total Redrill Time = None

Average Penetration Rate =

Verticality Information

At Full Depth = 0° North / South X 2.5° East
S-ARC North =
S-ARC South =

Quality Coring: None.

Comments:

Conforming Pile #J 610-611
Area "B"

CUT-OFF WALL EXCAVATION				CUT-OFF WALL CONSTRUCTION										
Drilling Date	Equipment Rig #	Excavation Method	Drill Footage (FT)	Pure Drill Time (HRS)	Redrill (HRS)	Redrill (FT)	Penetration Rate (FT / HR)	Drill (FT / HR)	Concrete Date	GROUT (CU.YD.)	Non-Spec. Concrete (CU.YD.)	Spec. Concrete (CU.YD.)	Theoretical Volume (CU.YD.)	Overbreak
08/24/94	1	DHD130A	185	13.30			13.91		08/25/94			45	43.2	4.2%

Total Drill Time = 13.30 Hours
Average Penetration Rate = 13.91 Feet / Hour

Total Redrill Time = None
Average Penetration Rate =

Verticality Information
At Full Depth = 0° North / South X 0° East / West
Chord North = 27.82"
S-ARC South = 28.81"

Quality Coring: None.

Comments:

PRODUCTION RATES

**SUPERDRILL PRODUCTION RATES AT DIKE 1 FOR DIFFERENT MATERIALS
(USING A DHD130A BIT)**

ROCK TYPE	STRENGTH (PSI)	AVG. DRILLING RATE (Ft./Hr)
SANDSTONE (Sylamore)	Range (7,142 – 26,938) Avg. 12,800	2 (with cluster bit rate increased to 6 ft/hr)
DOLOMITE AND CHERTY LIMESTONE	Range (1,632 – 27,378) Avg. 10,000	14
BROKEN & WEATHERED LIMESTONE	---	27 (Varies Greatly)
CONCRETE	Avg. 3,000	22