## UNCONFINED COMPRESSION TEST

### Figure

![Graph](image_url)

### Table

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>88.77</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>44.38</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.9</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>28.0</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>111.7</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>87.3</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>81.3</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.9315</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>2.27</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>4.67</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>2.06</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

**LL =** | **PL =** | **PI =** | **Assumed GS =** 2.7 | **Type:** Intact Rock

**Project No.:** PR&C W33SHG032408326, W.O. # 834e

**Date Sampled:**

**Remarks:**
Tests performed in accordance with ASTM D2938 & D2216.

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-28, K2/3204

**Sample Number:** #2  **Depth:** 54.1 - 54.6’

**UNCONFINED COMPRESSION TEST**

**U.S. Army Corp of Engineers**

Tested By: AB  Checked By: MW
## UNCONFINED COMPRESSION TEST

### Figure

![Figure Image]

### Table

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>97.56</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>48.78</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.7</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>24.9</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>113.8</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>91.1</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>79.1</td>
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<tr>
<td>Void ratio</td>
<td>0.8510</td>
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<tr>
<td>Specimen diameter, in.</td>
<td>2.35</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>4.65</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.98</td>
</tr>
</tbody>
</table>

### Description
- Intact Rock Core
- Assumed GS = 2.7
- Type: Intact Rock Core

### Details
- **Client:** Wilmington/Charleston District
- **Project:** Charleston Harbor Entrance Channel Rock Testing
- **Location:** EC-13-B-28, K2/3205
- **Sample Number:** #3
- **Depth:** 57.0 - 57.5'

### Remarks
Tests performed in accordance with ASTM D2938 & D2216.
**UNCONFINED COMPRESSION TEST**

<table>
<thead>
<tr>
<th>Sample No.</th>
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<tbody>
<tr>
<td>Unconfined strength, psi</td>
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<td>Undrained shear strength, psi</td>
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<tr>
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</tr>
<tr>
<td>Water content, %</td>
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</tr>
<tr>
<td>Specimen height, in.</td>
<td>4.43</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.88</td>
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</table>

**Description:** Intact Rock Core

**LL =** | **PL =** | **PI =** | **Assumed GS = 2.7** | **Type:** Rock Core

**Project No.:** PR&C W33SG32408326, W.O. # 834e

**Date Sampled:**

**Remarks:**
Tests performed in accordance with ASTM D2938 & D2216.

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-28, K2/3206

**Sample Number:** #4  **Depth:** 57.7 - 58.1'

---

**UNCONFINED COMPRESSION TEST**

**U.S. Army Corp of Engineers**

**Tested By:** AB  **Checked By:** MW
### UNCONFINED COMPRESSION TEST

**Sample No.**

<table>
<thead>
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</thead>
</table>

**Unconfined strength, psi**

<table>
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<tr>
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<th>56.71</th>
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**Undrained shear strength, psi**

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<tr>
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<th>28.35</th>
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**Failure strain, %**

<table>
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</table>

**Strain rate, %/min.**

<table>
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**Water content, %**

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**Wet density, pcf**

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**Dry density, pcf**

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<th>88.1</th>
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</table>

**Saturation, %**

<table>
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<tr>
<th></th>
<th>67.3</th>
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</table>

**Void ratio**

<table>
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<th>0.9137</th>
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**Specimen diameter, in.**

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**Specimen height, in.**

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**Height/diameter ratio**

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</table>

**Description:** Intact Rock Core

**LL =**

<table>
<thead>
<tr>
<th>Assumed GS= 2.7</th>
</tr>
</thead>
</table>

**Type:** Rock Core

---

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-28, K2/3207

**Sample Number:** #5

**Depth:** 58.8 - 59.3'

---

**Figure ________**

---

**UNCONFINED COMPRESSION TEST**

U.S. Army Corp of Engineers

---

**Tested By:** AB

**Checked By:** MW
**UNCONFINED COMPRESSION TEST**

![Graph](image-url)

**Description:** Intact Rock Core

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>189.42</td>
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<tr>
<td>Undrained shear strength, psi</td>
<td>94.71</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>2.6</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>20.2</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>113.5</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>94.4</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>69.6</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.7855</td>
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<tr>
<td>Specimen diameter, in.</td>
<td>2.33</td>
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<tr>
<td>Specimen height, in.</td>
<td>4.68</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>2.01</td>
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</table>

<table>
<thead>
<tr>
<th>LL</th>
<th>PL</th>
<th>PI</th>
<th>Assumed GS=</th>
<th>Type: Rock Core</th>
</tr>
</thead>
</table>

**Project No.:** PR&C W33SG32408326, W.O. # 834e

**Date Sampled:**

**Remarks:**
Tests performed in accordance with ASTM D2938 & D2216.

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-32, K2/3210

**Sample Number:** #2  **Depth:** 56.0 - 56.5'

**UNCONFINED COMPRESSION TEST**

U.S. Army Corp of Engineers
### UNCONFINED COMPRESSION TEST

**Sample No.** 1

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>249.74</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>124.87</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.6</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>24.0</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>119.3</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>96.3</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>86.2</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.7512</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>2.36</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>4.59</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.95</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

**LL =** 1, **PL =** 2, **PI =** 0.6

**Assumed GS =** 2.7, **Type:** Rock Core

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-32, K2/3211

**Sample Number:** #3, **Depth:** 58.1 - 58.6'

---

*Figure ________*

---

**UNCONFINED COMPRESSION TEST**

U.S. Army Corp of Engineers

---

**Tested By:** AB, **Checked By:** MW
UNCONFINED COMPRESSION TEST

Sample No. | 1
---|---
Unconfined strength, psi | 350.86
Undrained shear strength, psi | 175.43
Failure strain, % | 0.6
Strain rate, %/min. | 0.30
Water content, % | 25.1
Wet density, pcf | 122.4
Dry density, pcf | 97.8
Saturation, % | 93.8
Void ratio | 0.7231
Specimen diameter, in. | 2.35
Specimen height, in. | 4.63
Height/diameter ratio | 1.98

Description: Intact Rock Core

Project No.: PR&C W33S032408326, W.O. # 834e

Date Sampled:

Remarks: Tests performed in accordance with ASTM D2938 & D2216.

Client: Wilmington/Charleston District

Project: Charleston Harbor Entrance Channel Rock Testing

Location: EC-13-B-33, K2/3212

Sample Number: #1

Depth: 53.1 - 53.5'

UNCONFINED COMPRESSION TEST

U.S. Army Corp of Engineers
UNCONFINED COMPRESSION TEST

Sample No. 1

Unconfined strength, psi 237.77
Undrained shear strength, psi 118.88
Failure strain, % 0.7
Strain rate, %/min. 0.30
Water content, % 24.4
Wet density, pcf 118.5
Dry density, pcf 95.3
Saturation, % 85.5
Void ratio 0.7689
Specimen diameter, in. 2.36
Specimen height, in. 4.75
Height/diameter ratio 2.01

Description: Intact Rock Core

LL = PL = PI = Assumed GS= 2.7 Type: Rock Core

Client: Wilmington/Charleston District
Project: Charleston Harbor Entrance Channel Rock Testing
Location: EC-13-B-33, K2/3213
Sample Number: #2 Depth: 55.0 - 55.4’

Figure ________

UNCONFINED COMPRESSION TEST
U.S. Army Corp of Engineers

Tested By: AB  Checked By: MW
**UNCONFINED COMPRESSION TEST**

![Graph of Compressive Stress vs. Axial Strain]

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>322.07</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>161.03</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.8</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>15.7</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>125.7</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>108.6</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>76.9</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.5523</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>2.37</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>4.71</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.99</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

**Project No.:** PR&C W3S8G3248326, W.O. # 834e

**Date Sampled:**

**Remarks:**
Tests performed in accordance with ASTM D2938 & D2216.

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-33, K2/3215

**Sample Number:** #4  **Depth:** 58.5 - 58.9'

---

**Tested By:** AB  **Checked By:** MW

---

*U.S. Army Corp of Engineers*
UNCONFINED COMPRESSION TEST

Sample No. | 1
---|---
Unconfined strength, psi | 124.69
Undrained shear strength, psi | 62.34
Failure strain, % | 0.2
Strain rate, %/min. | 0.30
Water content, % | 19.2
Wet density, pcf | 116.3
Dry density, pcf | 97.5
Saturation, % | 71.3
Void ratio | 0.7286
Specimen diameter, in. | 2.35
Specimen height, in. | 4.61
Height/diameter ratio | 1.96

Description: Intact Rock Core

Type: Rock Core

Client: Wilmington/Charleston District

Project: Charleston Harbor Entrance Channel Rock Testing

Location: EC-13-B-34, K2/3217

Sample Number: #2

Depth: 57.7 - 58.2'

Tests performed in accordance with ASTM D2938 & D2216.

Figure ________
**UNCONFINED COMPRESSION TEST**

**Sample No.**: 1

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>194.55</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>97.27</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.3</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>23.7</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>119.6</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>96.7</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>86.1</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.7437</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>2.31</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>4.60</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.99</td>
</tr>
</tbody>
</table>

**Description**: Intact Rock Core

**LL =** | **PL =** | **PI =** | **Assumed GS=** | **Type:** Rock Core

**Project No.:** PR&C W33SG32408326, W.O. # 834e

**Date Sampled:**

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-34, K2/3218

**Sample Number:** #3  **Depth:** 59.7 - 60.2'

---

**Figure _______**

**UNCONFINED COMPRESSION TEST**

**U.S. Army Corp of Engineers**
UNCONFINED COMPRESSION TEST

Sample No. 1
Unconfined strength, psi 195.03
Undrained shear strength, psi 97.52
Failure strain, % 0.4
Strain rate, %/min. 0.30
Water content, % 20.2
Wet density, pcf 117.9
Dry density, pcf 98.1
Saturation, % 75.9
Void ratio 0.7180
Specimen diameter, in. 2.32
Specimen height, in. 4.71
Height/diameter ratio 2.03

Description: Intact Rock Core

Compressive Stress, psi
Axial Strain, %

Project No.: PR&C W33SCG3248326, W.O. # 834e
Date Sampled:
Remarks: Tests performed in accordance with ASTM D2938 & D2216.

Client: Wilmington/Charleston District
Project: Charleston Harbor Entrance Channel Rock Testing
Location: EC-13-B-35, K2/3220
Sample Number: #2 Depth: 55.0 - 55.5'

UNCONFINED COMPRESSION TEST

U.S. Army Corp of Engineers

Tested By: AB
Checked By: MW
**Sample No.** | 1  
---|---  
**Unconfined strength, psi** | 230.97  
**Undrained shear strength, psi** | 115.48  
**Failure strain, %** | 0.5  
**Strain rate, %/min.** | 0.30  
**Water content, %** | 19.9  
**Wet density, pcf** | 115.4  
**Dry density, pcf** | 96.3  
**Saturation, %** | 71.5  
**Void ratio** | 0.7501  
**Specimen diameter, in.** | 2.38  
**Specimen height, in.** | 4.73  
**Height/diameter ratio** | 1.99

**Description:** Intact Rock Core

**Diagram:**

![Compressive Stress vs Axial Strain](image)

**Remarks:**
Tests performed in accordance with ASTM D2938 & D2216.

---

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-35, K2/3221

**Sample Number:** #3  
**Depth:** 59.0 - 59.5'  

---

**UNCONFINED COMPRESSION TEST**

**U.S. Army Corp of Engineers**

---

**Tested By:** AB  
**Checked By:** MW
Sample No. | 1 |
---|---|
Unconfined strength, psi | 183.93 |
Undrained shear strength, psi | 91.96 |
Failure strain, % | 1.3 |
Strain rate, %/min. | 0.30 |
Water content, % | 21.8 |
Wet density, pcf | 120.2 |
Dry density, pcf | 98.7 |
Saturation, % | 83.2 |
Void ratio | 0.7082 |
Specimen diameter, in. | 2.29 |
Specimen height, in. | 4.43 |
Height/diameter ratio | 1.93 |

**Description:** Intact Rock Core

**LL** | **PL** | **PI** | **Assumed GS** | **Type**
---|---|---|---|---
2 | 2 | 2 | 2.7 | Rock Cores

**NOTE:**
Tests performed in accordance with ASTM D2938 & D2216.
## UNCONFINED COMPRESSION TEST

<table>
<thead>
<tr>
<th>Description:</th>
<th>Intact Rock Core</th>
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<tbody>
<tr>
<td>Sample No.</td>
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<td>Unconfined strength, psi</td>
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<tr>
<td>Undrained shear strength, psi</td>
<td>72.69</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>1.2</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>21.2</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>114.4</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>94.4</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>72.8</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.7860</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>2.35</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>4.57</td>
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<tr>
<td>Height/diameter ratio</td>
<td>1.94</td>
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<table>
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<th>Compressive Stress, psi</th>
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<tbody>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Axial Strain, %</th>
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<tr>
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**Client:** Wilmington/Charleston District  
**Project:** Charleston Harbor Entrance Channel Rock Testing  
**Location:** EC-13-B-36, K2/3223  
**Sample Number:** #2  
**Depth:** 56.7 - 57.2'  
**Assumed GS:** 2.7  
**Type:** Rock Core  

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

---

**Figure ______**
## UNCONFINED COMPRESSION TEST

### Sample No.
- 1

### Unconfined strength, psi
- 174.52

### Undrained shear strength, psi
- 87.26

### Failure strain, %
- 0.7

### Strain rate, %/min.
- 0.30

### Water content, %
- 26.7

### Wet density, pcf
- 117.3

### Dry density, pcf
- 92.6

### Saturation, %
- 87.9

### Void ratio
- 0.8212

### Specimen diameter, in.
- 2.34

### Specimen height, in.
- 4.64

### Height/diameter ratio
- 1.98

### Description:
- Intact Rock Core

### Assumed GS=
- 2.7

### Type:
- Rock Core

### Project No.: PR&C W33S032408326, W.O. # 834e

### Date Sampled:

### Remarks:
- Tests performed in accordance with ASTM D2938 & D2216.

### Figure

### Client:
- Wilmington/Charleston District

### Project:
- Charleston Harbor Entrance Channel Rock Testing

### Location:
- EC-13-B-37, K2/3226

### Sample Number:
- #3

### Depth:
- 59.2 - 59.7'

### UNCONFINED COMPRESSION TEST

### U.S. Army Corp of Engineers

---

**Tested By:** AB  
**Checked By:** MW
## UNCONFINED COMPRESSION TEST

### Client:
Wilmington/Charleston District

### Project:
Charleston Harbor Entrance Channel Rock Testing

### Location:
EC-13-B-38, K2/3227

### Sample Number:
#1

### Depth:
56.2 - 56.7'

### Description:
Intact Rock Core

### Type:
Rock Core

### Assumed GS:
2.7

### Sample No.
1

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Unconfined strength, psi</th>
<th>Undrained shear strength, psi</th>
<th>Failure strain, %</th>
<th>Strain rate, %/min.</th>
<th>Water content, %</th>
<th>Wet density, pcf</th>
<th>Dry density, pcf</th>
<th>Saturation, %</th>
<th>Void ratio</th>
<th>Specimen diameter, in.</th>
<th>Specimen height, in.</th>
<th>Height/diameter ratio</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>33.29</td>
<td>16.64</td>
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<td>0.30</td>
<td>25.8</td>
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<td>0.9444</td>
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<td>4.66</td>
<td>2.03</td>
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</table>

### Remarks:
Tests performed in accordance with ASTM D2938 & D2216.

---

### Tested By: AB

### Checked By: MW
## UNCONFINED COMPRESSION TEST

**Description:** Intact Rock Core

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
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</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>100.72</td>
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<tr>
<td>Undrained shear strength, psi</td>
<td>50.36</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>2.6</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>22.5</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>109.4</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>89.3</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>68.5</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.8869</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>2.32</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>4.63</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.99</td>
</tr>
</tbody>
</table>

**Remarks:**
Tests performed in accordance with ASTM D2938 
& D2216.

**Date Sampled:**

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-38, K2/3229

**Sample Number:** #3  
**Depth:** 59.0 - 59.5'

---

**UNCONFINED COMPRESSION TEST**

U.S. Army Corp of Engineers

---

Tested By: AB  
Checked By: MW
UNCONFINED COMPRESSION TEST

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample No.</td>
<td>1</td>
</tr>
<tr>
<td>Unconfined strength, psi</td>
<td>176.45</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>88.23</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.8</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>22.5</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>114.7</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>93.6</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>76.0</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.8013</td>
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<tr>
<td>Specimen diameter, in.</td>
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</tr>
<tr>
<td>Specimen height, in.</td>
<td>6.07</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.89</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

**Assumed GS:** 2.7  **Type:** Rock Core

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-39, K2/3230  **Sample Number:** #1  **Depth:** 54.2 - 54.7'

**Figure_______**

**UNCONFINED COMPRESSION TEST**

**U.S. Army Corp of Engineers**

**Tested By:** AB  **Checked By:** MW
**UNCONFINED COMPRESSION TEST**

![Graph with test results]

Sample No. | 1  
Unconfined strength, psi | 248.86  
Undrained shear strength, psi | 124.43  
Failure strain, % | 0.5  
Strain rate, %/min. | 0.30  
Water content, % | 22.9  
Wet density, pcf | 120.5  
Dry density, pcf | 98.1  
Saturation, % | 86.1  
Void ratio | 0.7188  
Specimen diameter, in. | 3.20  
Specimen height, in. | 6.00  
Height/diameter ratio | 1.87

**Description:** Intact Rock Core  
**LL =**  
**PL =**  
**PI =**  
**Assumed GS=** 2.7  
**Type:** Rock Core  

**Client:** Wilmington/Charleston District  
**Project:** Charleston Harbor Entrance Channel Rock Testing  
**Location:** EC-13-B-39, K2/3232  
**Sample Number:** #3  
**Depth:** 57.2 - 57.7'

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.
**Unconfined Compression Test**

**Sample No.** | 1  
---|---  
**Unconfined strength, psi** | 253.30  
**Undrained shear strength, psi** | 126.65  
**Failure strain, %** | 0.5  
**Strain rate, %/min.** | 0.30  
**Water content, %** | 22.3  
**Wet density, pcf** | 119.6  
**Dry density, pcf** | 97.7  
**Saturation, %** | 83.1  
**Void ratio** | 0.7244  
**Specimen diameter, in.** | 3.18  
**Specimen height, in.** | 6.05  
**Height/diameter ratio** | 1.90  

**Description:** Intact Rock Core

<table>
<thead>
<tr>
<th>LL =</th>
<th>PL =</th>
<th>PI =</th>
<th>Assumed GS= 2.7</th>
<th>Type: Rock Core</th>
</tr>
</thead>
</table>

**Project No.:** PR&C W35SH32408326, W.O. # 834e

**Date Sampled:**

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-39, K2/3233

**Sample Number:** #4  
**Depth:** 58.7 - 59.3'

---

**Figure ________**  

---

**Tested By:** AB  
**Checked By:** MW
UNCONFINED COMPRESSION TEST

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>295.52</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>147.76</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.7</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>24.9</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>118.5</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>94.9</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>86.5</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.7761</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.23</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>5.98</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.85</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

**Assumed GS=** 2.7  
**Type:** Rock Core

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-40, K2/3235  
Sample Number: #1  
**Depth:** 53.7 - 54.3'

**Remarks:**  
Tests performed in accordance with ASTM D2938 & D2216.

**Figure ________**

---

Tested By: AB  
Checked By: MW
UNCONFINED COMPRESSION TEST

Sample No. 1
Unconfined strength, psi 292.92
Undrained shear strength, psi 146.46
Failure strain, % 0.7
Strain rate, %/min. 0.30
Water content, % 24.1
Wet density, pcg 120.6
Dry density, pcg 97.2
Saturation, % 88.6
Void ratio 0.7347
Specimen diameter, in. 3.21
Specimen height, in. 6.20
Height/diameter ratio 1.94

Description: Intact Rock Core

Compressive Stress, psi
Axial Strain, %

Client: Wilmington/Charleston District
Project: Charleston Harbor Entrance Channel Rock Testing
Location: EC-13-B-40, K2/3236
Sample Number: #2  Depth: 55.8 - 56.3'

UNCONFINED COMPRESSION TEST
U.S. Army Corp of Engineers

Tested By: AB  Checked By: MW
UNCONFINED COMPRESSION TEST

Sample No. | 1
---|---
Unconfined strength, psi | 232.13
Undrained shear strength, psi | 116.06
Failure strain, % | 0.4
Strain rate, %/min. | 0.30
Water content, % | 24.9
Wet density, pcf | 117.4
Dry density, pcf | 94.0
Saturation, % | 84.8
Void ratio | 0.7935
Specimen diameter, in. | 3.22
Specimen height, in. | 6.21
Height/diameter ratio | 1.93

Description: Intact Rock Core

LL = PL = PI = Assumed GS = 2.7

Client: Wilmington/Charleston District
Project: Charleston Harbor Entrance Channel Rock Testing
Location: EC-13-B-40, K2/3238
Sample Number: #4
Depth: 58.7 - 59.3'

Tests performed in accordance with ASTM D2938 & D2216.
UNCONFINED COMPRESSION TEST

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>185.98</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>92.99</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.5</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>24.8</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>116.7</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>93.5</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>83.3</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.8027</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.15</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>5.97</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.89</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

**LL =** | **PL =** | **PI =** | **Assumed GS=** 2.7 | **Type:** Rock Core

**Date Sampled:**

**Remarks:**
Tests performed in accordance with ASTM D2938 & D2216.

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-41, K2/3239

**Sample Number:** #1  **Depth:** 53.6 - 54.1'

**UNCONFINED COMPRESSION TEST**

**U.S. Army Corp of Engineers**

Tested By: AB  Checked By: MW
### UNCONFINED COMPRESSION TEST

**Sample No.:** 1  
**Unconfined strength, psi:** 226.31  
**Undrained shear strength, psi:** 113.16  
**Failure strain, %:** 0.7  
**Strain rate, %/min.:** 0.30  
**Water content, %:** 23.6  
**Wet density, pcf:** 118.3  
**Dry density, pcf:** 95.8  
**Saturation, %:** 83.7  
**Void ratio:** 0.7599  
**Specimen diameter, in.:** 3.11  
**Specimen height, in.:** 5.91  
**Height/diameter ratio:** 1.90

**Description:** Intact Rock Core  
**LL =**  
**PL =**  
**PI =**  
**Assumed GS = 2.7**  
**Type:** Rock Core  

**Client:** Wilmington/Charleston District  
**Project:** Charleston Harbor Entrance Channel Rock Testing  
**Location:** EC-13-B-41, K2/3240  
**Sample Number:** #2  
**Depth:** 55.9 - 59.1

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

**Figure _____**

**Tested By:** AB  
**Checked By:** MW
UNCONFINED COMPRESSION TEST

Sample No. 1
Unconfined strength, psi 273.67
Undrained shear strength, psi 136.83
Failure strain, % 1.4
Strain rate, %/min. 0.30
Water content, % 24.6
Wet density, pcf 116.5
Dry density, pcf 93.5
Saturation, % 82.7
Void ratio 0.8020
Specimen diameter, in. 3.19
Specimen height, in. 6.24
Height/diameter ratio 1.96

Description: Intact Rock Core

Assumed GS= 2.7
Type: Rock Core

Client: Wilmington/Charleston District
Project: Charleston Harbor Entrance Channel Rock Testing
Location: EC-13-B-41, K2/3243
Sample Number: #5
Depth: 59.5 - 60.0'

Tests performed in accordance with ASTM D2938 & D2216.

Figure _______

UNCONFINED COMPRESSION TEST

U.S. Army Corp of Engineers

Tested By: AB
Checked By: MW
UNCONFINED COMPRESSION TEST

Sample No. | 1 |
---|---|
Unconfined strength, psi | 223.31 |
Undrained shear strength, psi | 111.65 |
Failure strain, % | 0.4 |
Strain rate, %/min. | 0.30 |
Water content, % | 18.3 |
Wet density,pcf | 114.8 |
Dry density,pcf | 97.0 |
Saturation, % | 67.1 |
Void ratio | 0.7381 |
Specimen diameter, in. | 3.16 |
Specimen height, in. | 5.24 |
Height/diameter ratio | 1.66 |

Description: Intact Rock Core

Client: Wilmington/Charleston District

Project: Charleston Harbor Entrance Channel Rock Testing

Location: EC-13-B-42, K2/3244

Sample Number: #1

Depth: 53.0 - 53.5'

UNCONFINED COMPRESSION TEST

U.S. Army Corp of Engineers
Tested By: AB
Checked By: MW

UNCONFINED COMPRESSION TEST

client: Wilmington/Charleston District
project: Charleston Harbor Entrance Channel Rock Testing
location: EC-13-B-42, K2/3245
sample number: #2
depth: 54.6 - 55.1'

UNCONFINED COMPRESSION TEST

| Sample No. | 1 |
| Unconfined strength, psi | 195.15 |
| Undrained shear strength, psi | 97.57 |
| Failure strain, % | 0.4 |
| Strain rate, %/min. | 0.30 |
| Water content, % | 22.9 |
| Wet density, pcf | 119.9 |
| Dry density, pcf | 97.6 |
| Saturation, % | 84.9 |
| Void ratio | 0.7274 |
| Specimen diameter, in. | 3.15 |
| Specimen height, in. | 5.96 |
| Height/diameter ratio | 1.89 |

Description: Intact Rock Core
Type: Rock Core
Assumed GS= 2.7

Figure _______

Tests performed in accordance with ASTM D2938 & D2216.
**UNCONFINED COMPRESSION TEST**

![Graph showing compressive stress vs. axial strain]

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
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</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>200.11</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>100.05</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.3</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>24.8</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>119.1</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>95.4</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>87.5</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.7665</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.21</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>5.95</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.85</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-42, K2/3247

**Sample Number:** #4  **Depth:** 57.9 - 58.4’

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

---

**UNCONFINED COMPRESSION TEST**

**U.S. Army Corp of Engineers**
UNCONFINED COMPRESSION TEST

Sample No. | 1
---|---
Unconfined strength, psi | 369.17
Undrained shear strength, psi | 184.58
Failure strain, % | 0.9
Strain rate, %/min. | 0.30
Water content, % | 22.0
Wet density, pcf | 120.1
Dry density, pcf | 98.4
Saturation, % | 83.4
Void ratio | 0.7128
Specimen diameter, in. | 3.21
Specimen height, in. | 6.05
Height/diameter ratio | 1.88

Description: Intact Rock Core

Project No.: PR&C W33SHG32408326, W.O. # 834e
Date Sampled: 
Remarks: Tests performed in accordance with ASTM D2938 & D2216.

Client: Wilmington/Charleston District
Project: Charleston Harbor Entrance Channel Rock Testing
Location: EC-13-B-43, K2/3249
Sample Number: #1  Depth: 54.0 - 54.5'

UNCONFINED COMPRESSION TEST
U.S. Army Corp of Engineers

Tested By: AB  Checked By: MW
### UNCONSTRAINED COMPRESSION TEST

**Client:** Wilmington/Charleston District  
**Project:** Charleston Harbor Entrance Channel Rock Testing  
**Location:** EC-13-B-43, K2/3251  
**Sample Number:** #3  
**Depth:** 56.6 - 57.1'  
**Date Sampled:**  
**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Unconfined strength, psi</th>
<th>Undrained shear strength, psi</th>
<th>Failure strain, %</th>
<th>Strain rate, %/min.</th>
<th>Water content, %</th>
<th>Wet density, pcf</th>
<th>Dry density, pcf</th>
<th>Saturation, %</th>
<th>Void ratio</th>
<th>Specimen diameter, in.</th>
<th>Specimen height, in.</th>
<th>Height/diameter ratio</th>
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<tbody>
<tr>
<td>1</td>
<td>415.83</td>
<td>207.91</td>
<td>0.5</td>
<td>0.30</td>
<td>22.7</td>
<td>121.6</td>
<td>99.1</td>
<td>87.4</td>
<td>0.7003</td>
<td>3.21</td>
<td>6.81</td>
<td>2.12</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core  
**Type:** Rock Core  
**Assumed GS:** 2.7

---

**Figure:** [Graph of Compressive Stress vs. Axial Strain]  
---

**UNCONSTRAINED COMPRESSION TEST**  
U.S. Army Corp of Engineers
**UNCONFINED COMPRESSION TEST**

Sample No. | 1 |
---|---|
Unconfined strength, psi | 219.33 |
Undrained shear strength, psi | 109.66 |
Failure strain, % | 0.3 |
Strain rate, %/min. | 0.30 |
Water content, % | 22.3 |
Wet density, pcf | 123.4 |
Dry density, pcf | 100.9 |
Saturation, % | 89.7 |
Void ratio | 0.6700 |
Specimen diameter, in. | 3.21 |
Specimen height, in. | 6.27 |
Height/diameter ratio | 1.96 |

**Description:** Intact Rock Core

**LL =** | **PL =** | **PI =** | **Assumed GS=** | **Type:** Rock Core
---|---|---|---|---

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-43, K2/3252

**Sample Number:** #4  **Depth:** 58.3 - 58.8'

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

---

**UNCONFINED COMPRESSION TEST**

U.S. Army Corp of Engineers

---

**Tested By:** AB  **Checked By:** MW
**UNCONFINED COMPRESSION TEST**

![Graph](image)

**Sample No.**: 1

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
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<td>Unconfined strength, psi</td>
<td>114.56</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>57.28</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.3</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>21.7</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>122.0</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>100.3</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>85.9</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.6806</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.17</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>5.90</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.86</td>
</tr>
</tbody>
</table>

**Description**: Intact Rock Core

**LL** = **PL** = **PI** = **Assumed GS** = 2.7 **Type**: Rock Core

**Date Sampled**: PR&C W33SHG32408326, W.O. #834e

**Remarks**: Tests performed in accordance with ASTM D2938 & D2216.

**Client**: Wilmington/Charleston District

**Project**: Charleston Harbor Entrance Channel Rock Testing

**Location**: EC-13-B-44, K2/3254

**Sample Number**: #1 **Depth**: 56.8 - 57.3'

---

**UNCONFINED COMPRESSION TEST**

U.S. Army Corp of Engineers

---

**Tested By**: AB  
**Checked By**: MW
**UNCONFINED COMPRESSION TEST**

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>158.72</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>79.36</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.5</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>24.4</td>
</tr>
<tr>
<td>Wet density,pcf</td>
<td>118.6</td>
</tr>
<tr>
<td>Dry density,pcf</td>
<td>95.3</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>85.8</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.7685</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.18</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>6.25</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.96</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

**Assumed GS=** 2.7

**Type:** Rock Core

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-44, K2/3256

**Sample Number:** #3  **Depth:** 59.4 - 59.9'

**Remarks:**
Tests performed in accordance with ASTM D2938 & D2216.

**Figure _____**
**UNCONFINED COMPRESSION TEST**

![Graph](image)

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>227.36</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>113.68</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.4</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>24.8</td>
</tr>
<tr>
<td>Wet density,pcf</td>
<td>114.1</td>
</tr>
<tr>
<td>Dry density,pcf</td>
<td>91.4</td>
</tr>
<tr>
<td>Saturation,%</td>
<td>79.3</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.8442</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.21</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>5.63</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.75</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

<table>
<thead>
<tr>
<th>LL</th>
<th>PL</th>
<th>PI</th>
<th>Assumed GS= 2.7</th>
<th>Type: Rock Core</th>
</tr>
</thead>
</table>

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-45, K2/3257

**Sample Number:** #1  **Depth:** 53.7 - 54.2'

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

**Figure ________**

Tested By: AB  Checked By: MW
**UNCONFINED COMPRESSION TEST**

![Graph](image1)

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>200.46</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>100.23</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.4</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>23.1</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>119.1</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>96.8</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>84.0</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.7410</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.19</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>6.20</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.94</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

**Project No.:** PR&C W33SG32408326, W.O. # 834e

**Client:** Wilmington/Charleston District

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

**Date Sampled:**

**Remarks:**

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-45, K2/3259

**Sample Number:** #3  **Depth:** 55.8 - 56.3'

**UNCONFINED COMPRESSION TEST**

**U.S. Army Corp of Engineers**

**Figure ________**

**Tested By:** AB  **Checked By:** MW
**UNCONFINED COMPRESSION TEST**

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>191.35</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>95.67</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.5</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>20.3</td>
</tr>
<tr>
<td>Wet density,pcf</td>
<td>117.9</td>
</tr>
<tr>
<td>Dry density,pcf</td>
<td>98.0</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>76.2</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.7198</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.19</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>6.01</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.89</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

**Type:** Rock Core

**LL =** | **PL =** | **PI =** | **Assumed GS= 2.7**
---|---|---|---

**Project No.:** PR&C W33SG32408326, W.O. # 834e

**Date Sampled:**

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

---

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-45, K2/3260

**Sample Number:** #4  **Depth:** 57.8 - 58.3'

---

**UNCONFINED COMPRESSION TEST**

U.S. Army Corp of Engineers

**Tested By:** AB  **Checked By:** MW
Sample No. | 1  
---|---  
Unconfined strength, psi | 138.37  
Undrained shear strength, psi | 69.19  
Failure strain, % | 0.5  
Strain rate, %/min. | 0.30  
Water content, % | 27.6  
Wet density, pcf | 119.1  
Dry density, pcf | 93.3  
Saturation, % | 92.6  
Void ratio | 0.8063  
Specimen diameter, in. | 3.10  
Specimen height, in. | 5.79  
Height/diameter ratio | 1.87

**Description:** Intact Rock Core

**LL =**  
**PL =**  
**PI =**  
**Assumed GS=** 2.7  
**Type:** Rock Core

**Project No.:** PR&C W33SJG3248326, W.O. # 834e

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-46, K2/3262

**Sample Number:** #1  
**Depth:** 57.5 - 58.0'

---

**Figure _______**

---

**UNCONFINED COMPRESSION TEST**

---

**U.S. Army Corp of Engineers**
## UNCONFINED COMPRESSION TEST

![Graph](image)

### Sample No.

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample No.</td>
<td>1</td>
</tr>
<tr>
<td>Unconfined strength, psi</td>
<td>170.46</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>85.23</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.4</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>28.3</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>119.1</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>92.9</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>93.6</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.8151</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.09</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>5.83</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.89</td>
</tr>
</tbody>
</table>

### Description:
- Intact Rock Core

### Table

<table>
<thead>
<tr>
<th>Compressive Stress, psi</th>
<th>0</th>
<th>50</th>
<th>100</th>
<th>150</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axial Strain, %</td>
<td>0</td>
<td>1.5</td>
<td>3</td>
<td>4.5</td>
<td>6</td>
</tr>
</tbody>
</table>

### Client:
- Wilmington/Charleston District

### Project:
- Charleston Harbor Entrance Channel Rock Testing

### Location:
- EC-13-B-46, K2/3264

### Sample Number:
- #3

### Depth:
- 59.9 - 60.4’

---

**UNCONFINED COMPRESSION TEST**

U.S. Army Corp of Engineers

**Figure_______**

---

**Tested By:** AB  |  **Checked By:** MW
### Unconfined Compression Test

**Description:** Intact Rock Core

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>130.48</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>65.24</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.8</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>26.4</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>116.8</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>92.3</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>86.5</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.8253</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.16</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>5.68</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.80</td>
</tr>
</tbody>
</table>

**Remarks:**
Tests performed in accordance with ASTM D2938 & D2216.

**Figure:** [Image of test results]
UNCONFINED COMPRESSION TEST

Sample No. 1
Unconfined strength, psi 152.33
Undrained shear strength, psi 76.17
Failure strain, % 0.8
Strain rate, %/min. 0.30
Water content, % 23.9
Wet density, pcf 117.5
Dry density, pcf 94.8
Saturation, % 83.1
Void ratio 0.7772
Specimen diameter, in. 3.20
Specimen height, in. 6.16
Height/diameter ratio 1.93

Description: Intact Rock Core

LL = PL = PI = Assumed GS= 2.7 Type: Rock Core

Project No.: PR&C W33SHG3248326, W.O. # 834e

Date Sampled:

Remarks:
Tests performed in accordance with ASTM D2938 & D2216.

Client: Wilmington/Charleston District

Project: Charleston Harbor Entrance Channel Rock Testing

Location: EC-13-B-47, K2/3267
Sample Number: #3  Depth: 58.5 - 59.0'

UNCONFINED COMPRESSION TEST
U.S. Army Corp of Engineers

Tested By: AB  Checked By: MW
### UNCONFINED COMPRESSION TEST

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>98.44</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>49.22</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.4</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>27.1</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>113.1</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>89.0</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>81.8</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.8944</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.14</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>5.73</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.83</td>
</tr>
</tbody>
</table>

### Description: Intact Rock Core

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-48, K2/3268

**Sample Number:** #1  **Depth:** 52.7 - 53.2'

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.
**UNCONFINED COMPRESSION TEST**

![Graph of Compressive Stress vs. Axial Strain]

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unconfined strength, psi</strong></td>
<td>204.94</td>
</tr>
<tr>
<td><strong>Undrained shear strength, psi</strong></td>
<td>102.47</td>
</tr>
<tr>
<td><strong>Failure strain, %</strong></td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Strain rate, %/min.</strong></td>
<td>0.30</td>
</tr>
<tr>
<td><strong>Water content, %</strong></td>
<td>28.8</td>
</tr>
<tr>
<td><strong>Wet density,pcf</strong></td>
<td>120.4</td>
</tr>
<tr>
<td><strong>Dry density,pcf</strong></td>
<td>93.5</td>
</tr>
<tr>
<td><strong>Saturation, %</strong></td>
<td>96.7</td>
</tr>
<tr>
<td><strong>Void ratio</strong></td>
<td>0.8036</td>
</tr>
<tr>
<td><strong>Specimen diameter, in.</strong></td>
<td>3.16</td>
</tr>
<tr>
<td><strong>Specimen height, in.</strong></td>
<td>6.17</td>
</tr>
<tr>
<td><strong>Height/diameter ratio</strong></td>
<td>1.95</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

**LL =** | **PL =** | **PI =** | **Assumed GS = 2.7** | **Type: Rock Core**

**Project No.:** PR&C W33SG3248326, W.O. # 834e

**Date Sampled:**

**Remarks:**
Tests performed in accordance with ASTM D2938 & D2216.

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-48, K2/3269

**Sample Number:** #2  **Depth:** 52.9 - 53.4’

---

**U.S. Army Corp of Engineers**

---

Tested By: AB  Checked By: MW
UNCONFINED COMPRESSION TEST

Sample No. | 1
---|---
Unconfined strength, psi | 89.08
Undrained shear strength, psi | 44.54
Failure strain, % | 0.7
Strain rate, %/min. | 0.30
Water content, % | 25.5
Wet density, pcf | 122.7
Dry density, pcf | 97.8
Saturation, % | 95.1
Void ratio | 0.7239
Specimen diameter, in. | 3.12
Specimen height, in. | 6.01
Height/diameter ratio | 1.92

Description: Intact Rock Core

LL = PL = PI = Assumed GS= 2.7 Type: Rock Core

Project No.: PR&C W33SG032408326, W.O. # 834e

Date Sampled:

Remarks:
Tests performed in accordance with ASTM D2938 & D2216.

Client: Wilmington/Charleston District

Project: Charleston Harbor Entrance Channel Rock Testing

Location: EC-13-B-48, K2/3271
Sample Number: #4 Depth: 57.7 - 58.2'

UNCONFINED COMPRESSION TEST

U.S. Army Corp of Engineers

Tested By: AB Checked By: MW
### UNCONFINED COMPRESSION TEST

![Image of rock sample](image.png)

**Sample No.** 1  
**Unconfined strength, psi** 142.44  
**Undrained shear strength, psi** 71.22  
**Failure strain, %** 0.2  
**Strain rate, %/min.** 0.30  
**Water content, %** 24.7  
**Wet density, pcf** 121.8  
**Dry density, pcf** 97.6  
**Saturation, %** 92.0  
**Void ratio** 0.7264  
**Specimen diameter, in.** 3.14  
**Specimen height, in.** 6.08  
**Height/diameter ratio** 1.93  

**Description:** Intact Rock Core  
**Type:** Rock Core

**LL =**  
**PL =**  
**PI =**  
**Assumed GS=** 2.7  

**Client:** Wilmington/Charleston District  
**Project:** Charleston Harbor Entrance Channel Rock Testing  
**Location:** EC-13-B-48, K2/3272  
**Sample Number:** #5  
**Depth:** 59.7 - 60.2'

---

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

---

![Graph showing compressive stress vs. axial strain](graph.png)

**Figure______**

---

**Tested By:** AB  
**Checked By:** MW
Sample No. 1
Unconfined strength, psi 84.76
Undrained shear strength, psi 42.38
Failure strain, % 0.4
Strain rate, %/min. 0.30
Water content, % 23.2
Wet density, pcf 113.1
Dry density, pcf 91.8
Saturation, % 74.8
Void ratio 0.8365
Specimen diameter, in. 3.14
Specimen height, in. 5.91
Height/diameter ratio 1.88

Description: Intact Rock Core

LL = PL = PI = Assumed GS= 2.7 Type: Rock Core

Date Sampled:

Remarks:
Tests performed in accordance with ASTM D2938 & D2216.

Tested By: AB
Checked By: MW
**UNCONFINED COMPRESSION TEST**

**Sample No.** | 1  
**Unconfined strength, psi** | 88.09  
**Undrained shear strength, psi** | 44.04  
**Failure strain, %** | 0.6  
**Strain rate, %/min.** | 0.30  
**Water content, %** | 28.4  
**Wet density, pcf** | 117.7  
**Dry density, pcf** | 91.7  
**Saturation, %** | 91.5  
**Void ratio** | 0.8381  
**Specimen diameter, in.** | 3.14  
**Specimen height, in.** | 6.18  
**Height/diameter ratio** | 1.97

**Description:** Intact Rock Core

**LL =** | **PL =** | **PI =** | **Assumed GS= 2.7** | **Type:** Rock Core

| Project No.: PR&C W33SH32408326, W.O. # 834e |

**Date Sampled:**

**Remarks:**
Tests performed in accordance with ASTM D2938 & D2216.

---

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-49, K2/3275

**Sample Number:** #2  
**Depth:** 55.7 - 56.2'

---

**UNCONFINED COMPRESSION TEST**

**U.S. Army Corp of Engineers**

Tested By: AB  
Checked By: MW
Sample No. | Unconfined strength, psi | Undrained shear strength, psi | Failure strain, % | Strain rate, %/min. | Water content, % | Wet density, pcf | Dry density, pcf | Saturation, % | Void ratio | Specimen diameter, in. | Specimen height, in. | Height/diameter ratio

Description: Intact Rock Core

LL = | PL = | PI = | Assumed GS= | Type: Rock Core

Project No.: PR&C W33SG03248326, W.O. # 834e

Date Sampled:

Remarks:
Tests performed in accordance with ASTM D2938 & D2216. Sample Crumbled and fell apart and was not testable for Unconfined Compressive Strength.

Figure _______

Client: Wilmington/Charleston District

Project: Charleston Harbor Entrance Channel Rock Testing

Location: EC-13-B-49, K2/3277

Sample Number: #4 | Depth: 58.4 - 58.9'

UNCONFINED COMPRESSION TEST

U.S. Army Corp of Engineers

Tested By: AB            Checked By: MW
**UNCONSTFIGED COMPRESSION TEST**

![Graph showing stress-strain relationship](image)

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>115.31</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>57.65</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.5</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>19.3</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>109.7</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>92.0</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>62.4</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.8331</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.08</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>4.26</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.38</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core  
**Type:** Rock Core

<table>
<thead>
<tr>
<th>LL</th>
<th>PL</th>
<th>PI</th>
<th>Assumed GS=</th>
<th>2.7</th>
</tr>
</thead>
</table>

**Client:** Wilmington/Charleston District  
**Project:** Charleston Harbor Entrance Channel Rock Testing  
**Location:** EC-13-B-50, K2/3278  
**Sample Number:** #1  
**Depth:** 51.6 - 53.6’

---

**Date Sampled:**

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

---

**Figure ________**
**UNCONFINED COMPRESSION TEST**

**Client:** Wilmington/Charleston District  
**Project:** Charleston Harbor Entrance Channel Rock Testing  
**Location:** EC-13-B-50, K2/3279  
**Sample Number:** #2  
**Depth:** 53.2 - 53.6'  

**Description:** Intact Rock Core  
**Type:** Rock Core  

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>73.66</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>36.83</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.5</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>25.9</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>105.1</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>83.5</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>68.6</td>
</tr>
<tr>
<td>Void ratio</td>
<td>1.0180</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.15</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>3.94</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.25</td>
</tr>
</tbody>
</table>

**Tests performed in accordance with ASTM D2938 & D2216.**

**Figure _______**

**UNCONFINED COMPRESSION TEST**

**U.S. Army Corp of Engineers**

**Tested By:** AB  
**Checked By:** MW
**UNCONFINED COMPRESSION TEST**

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>76.36</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>38.18</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.8</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>17.9</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>100.8</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>85.5</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>49.8</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.9710</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.18</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>6.47</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>2.03</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

<table>
<thead>
<tr>
<th>LL</th>
<th>PL</th>
<th>PI</th>
<th>Assumed GS= 2.7</th>
<th>Type: Rock Core</th>
</tr>
</thead>
</table>

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-51, K2/3281

**Sample Number:** #1  **Depth:** 51.5 - 51.9'

---

Tested By: AB  
Checked By: MW
**UNCONFINED COMPRESSION TEST**

![Graph of compressive stress vs. axial strain]

### Test Details
- **Client:** Wilmington/Charleston District
- **Project:** Charleston Harbor Entrance Channel Rock Testing
- **Location:** EC-13-B-51, K2/3282
- **Sample Number:** #2
- **Depth:** 52.9 - 53.4'

### Table of Test Results

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample No.</td>
<td>1</td>
</tr>
<tr>
<td>Unconfined strength, psi</td>
<td>76.99</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>38.50</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>1.3</td>
</tr>
<tr>
<td>Strain rate,%/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>26.0</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>111.1</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>88.2</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>77.0</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.9116</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.18</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>5.84</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.83</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

**Type:** Rock Core

---

**Figure _______**

**UNCONFINED COMPRESSION TEST**

**U.S. Army Corp of Engineers**
UNCONFINED COMPRESSION TEST

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>95.29</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>47.64</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.9</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>24.8</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>112.1</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>89.8</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>76.4</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.8769</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>3.15</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>5.15</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>1.64</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-51, K2/3284

**Sample Number:** #4  **Depth:** 56.0 - 56.6'

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

**Figure ________**

---

**UNCONFINED COMPRESSION TEST**

U.S. Army Corp of Engineers

**Tested By:** AB  **Checked By:** MW
Sample No. | 1 |
--- | --- |
Unconfined strength, psi | 107.24 |
Undrained shear strength, psi | 53.62 |
Failure strain, % | 1.5 |
Strain rate, %/min. | 0.30 |
Water content, % | 24.3 |
Wet density, pcf | 110.8 |
Dry density, pcf | 89.1 |
Saturation, % | 73.7 |
Void ratio | 0.8922 |
Specimen diameter, in. | 3.19 |
Specimen height, in. | 4.28 |
Height/diameter ratio | 1.34 |

**Description:** Intact Rock Core

**Project No.:** PR&C W33SIS2408326, W.O. # 834e

**Date Sampled:**

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-52, K2/3286

**Sample Number:** #1

**Depth:** 57.9 - 58.4'

**UNCONFINED COMPRESSION TEST**

U.S. Army Corps of Engineers
**UNCONFINED COMPRESSION TEST**

**Sample No.** | 1  
**Unconfined strength, psi** | 101.01  
**Undrained shear strength, psi** | 50.50  
**Failure strain, %** | 0.6  
**Strain rate, %/min.** | 0.30  
**Water content, %** | 22.3  
**Wet density, pcf** | 113.8  
**Dry density, pcf** | 93.0  
**Saturation, %** | 74.2  
**Void ratio** | 0.8123  
**Specimen diameter, in.** | 3.18  
**Specimen height, in.** | 4.45  
**Height/diameter ratio** | 1.40

*Description:* Intact Rock Core  
*Type:* Rock Core

**Client:** Wilmington/Charleston District  
**Project:** Charleston Harbor Entrance Channel Rock Testing  
**Location:** EC-13-B-52, K2/3287  
**Sample Number:** #2  
**Depth:** 59.8 - 60.3'

**Tested By:** AB  
**Checked By:** MW
UNCONFINED COMPRESSION TEST

Sample No. | 1 |
--- | --- |
Unconfined strength, psi | 139.84 |
Undrained shear strength, psi | 69.92 |
Failure strain, % | 1.0 |
Strain rate, %/min. | 0.30 |
Water content, % | 24.1 |
Wet density, pcf | 124.8 |
Dry density, pcf | 100.6 |
Saturation, % | 96.2 |
Void ratio | 0.6752 |
Specimen diameter, in. | 2.23 |
Specimen height, in. | 4.80 |
Height/diameter ratio | 2.15 |

Description: Intact Rock Core

LL = PL = PI = Assumed GS= 2.7 Type: Rock Core

Client: Wilmington/Charleston District
Project: Charleston Harbor Entrance Channel Rock Testing
Location: EC-13-B-18, K2/3502
Sample Number: #1 Depth: 53.9 - 54.4’

Tests performed in accordance with ASTM D2938 & D2216.

Figure ________
**UNCONFINED COMPRESSION TEST**

**Sample No.** 1

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconfined strength, psi</td>
<td>139.12</td>
</tr>
<tr>
<td>Undrained shear strength, psi</td>
<td>69.56</td>
</tr>
<tr>
<td>Failure strain, %</td>
<td>0.6</td>
</tr>
<tr>
<td>Strain rate, %/min.</td>
<td>0.30</td>
</tr>
<tr>
<td>Water content, %</td>
<td>23.1</td>
</tr>
<tr>
<td>Wet density, pcf</td>
<td>120.0</td>
</tr>
<tr>
<td>Dry density, pcf</td>
<td>97.5</td>
</tr>
<tr>
<td>Saturation, %</td>
<td>85.5</td>
</tr>
<tr>
<td>Void ratio</td>
<td>0.7283</td>
</tr>
<tr>
<td>Specimen diameter, in.</td>
<td>2.34</td>
</tr>
<tr>
<td>Specimen height, in.</td>
<td>5.04</td>
</tr>
<tr>
<td>Height/diameter ratio</td>
<td>2.15</td>
</tr>
</tbody>
</table>

**Description:** Intact Rock Core

**LL =** | **PL =** | **PI =** | **Assumed GS= 2.7** | **Type:** Rock Core

**Client:** Wilmington/Charleston District

**Project:** Charleston Harbor Entrance Channel Rock Testing

**Location:** EC-13-B-18, K2/3504

**Sample Number:** #3  **Depth:** 57.3 - 57.8'

**Remarks:** Tests performed in accordance with ASTM D2938 & D2216.

**Figure ________**

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**Tested By:** AB  
**Checked By:** MW