



**MACTEC ENGINEERING AND CONSULTING, INC.**  
 3301 ATLANTIC AVENUE  
 RALEIGH, NORTH CAROLINA 27604

**N.C.D.O.T./AASHTO CLASSIFICATIONS**

**REPORT ON SAMPLES OF: SOILS FOR QUALITY**

MACTEC PROJECT NAME AND NUMBER: Currituck and Knotts Island Ferry Basins (6468-03-0470)

PROJECT: 36722.1.1 (F-4700)

COUNTY: Currituck

OWNER: N.C.D.O.T.

DATE SAMPLED: Nov. -Dec. 2003

RECEIVED: 12/08/03

REPORTED BY: MACTEC

SAMPLED FROM: B-1

SUBMITTED BY: MACTEC ENGINEERING AND CONSULTING, INC.

1992 STANDARD SPECIFICATIONS

**TEST RESULTS**

| Lab Sample No.             | SS-1 | SS-2 | SS-3 | SS-4 | SS-5 | SS-6 |
|----------------------------|------|------|------|------|------|------|
| Retained 4.75 mm Sieve (%) | 0.1  | 0.0  | 1.2  | 0.7  | 0.1  | 1.1  |
| Passing 2.00 mm Sieve (%)  | 99.7 | 99.8 | 98.2 | 98.3 | 99.6 | 95.9 |
| Passing 425 µm Sieve (%)   | 91.3 | 83.6 | 93.6 | 91.7 | 96.3 | 75.6 |
| Passing 75 µm Sieve (%)    | 3.6  | 2.3  | 11.3 | 6.9  | 7.0  | 10.8 |

**MINUS 2.00mm FRACTION**

| SOIL MORTAR - 100%           |       |       |       |       |       |       |
|------------------------------|-------|-------|-------|-------|-------|-------|
| Coarse Sand Ret - 250 µm (%) | 27.4  | 43.3  | 12.0  | 18.2  | 23.8  | 40.0  |
| Fine Sand Ret - 53 µm (%)    | 69.7  | 54.8  | 77.9  | 76.6  | 70.5  | 50.4  |
| Silt 0.05 - 0.005 mm (%)     | 0.5   | 0.5   | 2.6   | 2.3   | 2.3   | 2.7   |
| Clay < 0.005 mm (%)          | 2.4   | 1.4   | 7.4   | 2.8   | 3.4   | 6.9   |
|                              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

|                        |     |     |          |     |     |          |
|------------------------|-----|-----|----------|-----|-----|----------|
| Moisture Content (%)   | ND  | ND  | ND       | ND  | ND  | ND       |
| Liquid Limit, L.L.     | 21  | 21  | 21       | 21  | 21  | 19       |
| Plasticity Index, P.I. | NP  | NP  | NP       | NP  | NP  | NP       |
| AASHTO Classification  | A-3 | A-3 | A-2-4(0) | A-3 | A-3 | A-2-4(0) |
| Organic Content (%)    | ND  | ND  | ND       | ND  | ND  | ND       |

|                 |     |     |     |      |      |      |
|-----------------|-----|-----|-----|------|------|------|
| Boring No.      | B-1 | B-1 | B-1 | B-1  | B-1  | B-1  |
| Station         | N/A | N/A | N/A | N/A  | N/A  | N/A  |
| Offset          | N/A | N/A | N/A | N/A  | N/A  | N/A  |
| Alignment       | N/A | N/A | N/A | N/A  | N/A  | N/A  |
| Depth (ft) From | 0.0 | 3.3 | 6.8 | 11.8 | 21.8 | 26.8 |
| to              | 1.5 | 4.8 | 8.3 | 13.3 | 23.3 | 28.3 |

REMARKS: N/A=Not Applicable; ND=Not Determined

Reviewed by: *M. h*



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**REPORT ON SAMPLES OF: SOILS FOR QUALITY**

MACTEC PROJECT NAME AND NUMBER: Currituck and Knotts Island Ferry Basins (6468-03-0470)

PROJECT: 3.6722.1.1 (F-4700)

COUNTY: Currituck

OWNER: N.C.D.O.T.

DATE SAMPLED: Nov. -Dec. 2003

RECEIVED: 12/08/03

REPORTED BY: MACTEC

SAMPLED FROM: B-1

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1992 STANDARD SPECIFICATIONS

**TEST RESULTS**

| Lab Sample No.             | SS-7  | SS-8  | SS-9  | SS-10 | SS-11 | SS-12 |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Retained 4.75 mm Sieve (%) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Passing 2.00 mm Sieve (%)  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Passing 425 µm Sieve (%)   | 99.5  | 99.8  | 99.9  | 99.8  | 99.7  | 99.8  |
| Passing 75 µm Sieve (%)    | 95.4  | 94.2  | 88.9  | 96.0  | 50.5  | 27.7  |

**MINUS 2.00mm FRACTION**

| SOIL MORTAR - 100%           |       |       |       |       |       |       |
|------------------------------|-------|-------|-------|-------|-------|-------|
| Coarse Sand Ret - 250 µm (%) | 0.9   | 0.5   | 0.4   | 0.8   | 1.7   | 0.8   |
| Fine Sand Ret - 53 µm (%)    | 11.9  | 19.6  | 24.3  | 5.3   | 54.6  | 80.0  |
| Silt 0.05 - 0.005 mm (%)     | 56.5  | 63.2  | 59.8  | 61.3  | 21.2  | 11.2  |
| Clay < 0.005 mm (%)          | 30.7  | 16.7  | 15.5  | 32.6  | 22.5  | 8.0   |
|                              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

|                        |           |        |        |           |        |          |
|------------------------|-----------|--------|--------|-----------|--------|----------|
| Moisture Content (%)   | 77.6      | 72.5   | ND     | 57.9      | ND     | ND       |
| Liquid Limit, L.L.     | 48        | 39     | 35     | 59        | 25     | 21       |
| Plasticity Index, P.I. | 21        | 6      | 5      | 29        | 11     | NP       |
| AASHTO Classification  | A-7-6(23) | A-4(8) | A-4(6) | A-7-5(33) | A-6(2) | A-2-4(0) |
| Organic Content (%)    | ND        | ND     | ND     | ND        | ND     | ND       |

|                 |      |      |      |      |      |      |
|-----------------|------|------|------|------|------|------|
| Boring No.      | B-1  | B-1  | B-1  | B-1  | B-1  | B-1  |
| Station         | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |
| Offset          | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |
| Alignment       | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  |
| Depth (ft) From | 31.8 | 41.8 | 46.8 | 66.8 | 71.8 | 76.8 |
| to              | 33.3 | 43.3 | 48.3 | 68.3 | 73.3 | 78.3 |

REMARKS: N/A=Not Applicable; ND=Not Determined

Reviewed by: *M. h*