

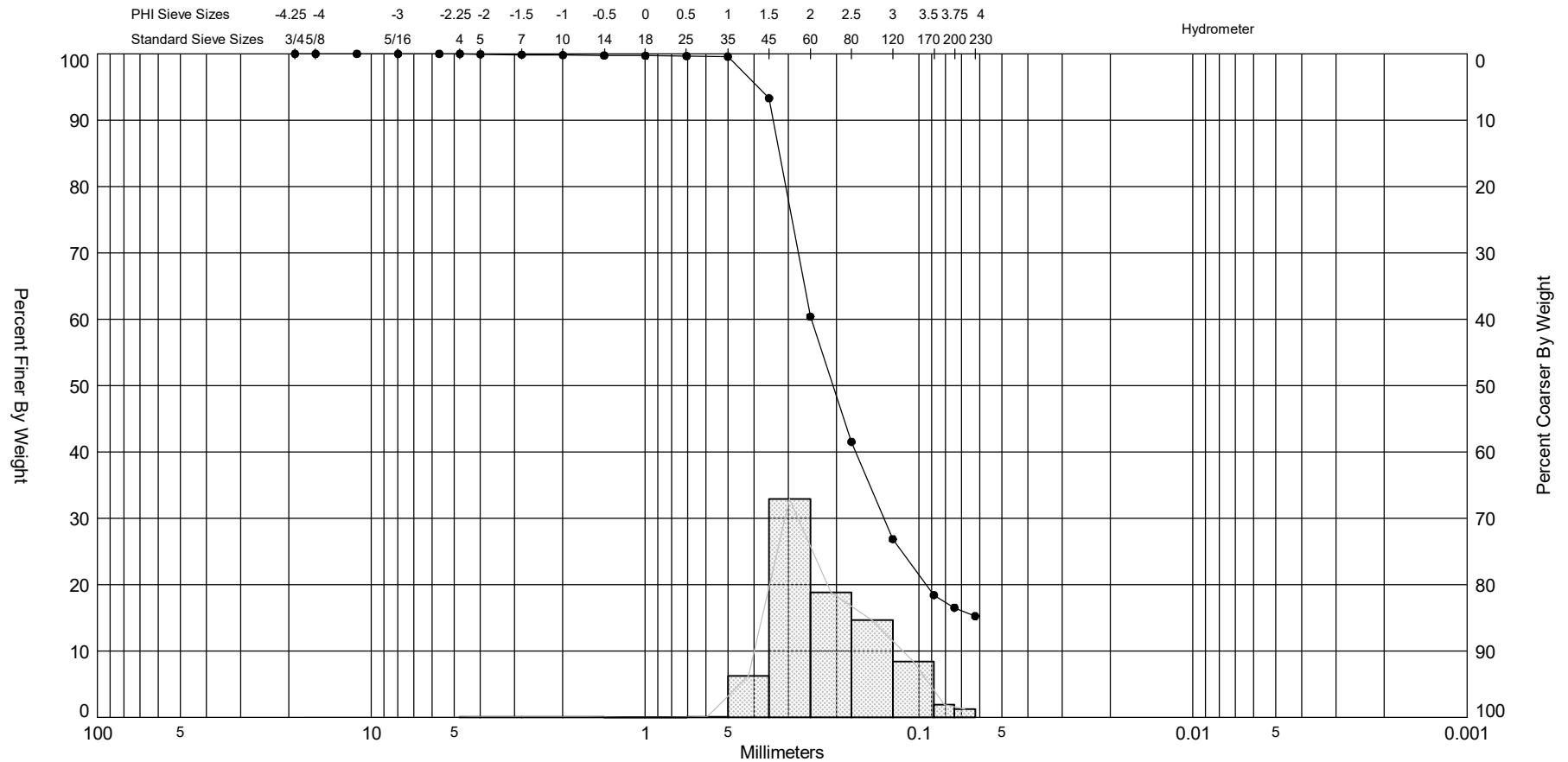
|                                                                                                                    |  |                                                                  |                                                                                                                                                          |                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DRILLING LOG</b>                                                                                                |  | <b>DIVISION</b>                                                  | <b>INSTALLATION</b>                                                                                                                                      | <b>SHEET 1</b><br><b>OF 1 SHEETS</b>                                                                                                                      |
| <b>1. PROJECT</b><br>McFaddin NWR Beach Ridge Restoration<br>Jefferson County, Texas                               |  |                                                                  | <b>9. SIZE AND TYPE OF BIT</b> 3.0 In.<br><b>10. COORDINATE SYSTEM/DATUM</b> Texas South Central<br><b>HORIZONTAL</b> NAD 1983<br><b>VERTICAL</b> NAVD88 |                                                                                                                                                           |
| <b>2. BORING DESIGNATION</b><br>JCVC-18-37                                                                         |  | <b>LOCATION COORDINATES (ft)</b><br>X = 3,478,837 Y = 13,789,147 |                                                                                                                                                          | <b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER<br>APTIM SEAS VC-700 Vibracore <input type="checkbox"/> MANUAL HAMMER |
| <b>3. DRILLING AGENCY</b><br>APTIM                                                                                 |  | <b>CONTRACTOR FILE NO.</b>                                       |                                                                                                                                                          | <b>12. TOTAL SAMPLES</b><br><b>DISTURBED</b><br><b>UNDISTURBED (UD)</b>                                                                                   |
| <b>4. NAME OF DRILLER</b><br>Francis Stankiewicz                                                                   |  |                                                                  | <b>13. TOTAL NUMBER CORE BOXES</b>                                                                                                                       |                                                                                                                                                           |
| <b>5. DIRECTION OF BORING</b><br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED |  |                                                                  | <b>14. ELEVATION GROUND WATER</b>                                                                                                                        |                                                                                                                                                           |
| <b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.                                                                          |  |                                                                  | <b>15. DATE BORING</b> 07-02-18 11:39<br><b>STARTED</b><br><b>COMPLETED</b> 07-02-18 11:47                                                               |                                                                                                                                                           |
| <b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.                                                                          |  |                                                                  | <b>16. ELEVATION TOP OF BORING</b> -24.7 Ft.                                                                                                             |                                                                                                                                                           |
| <b>8. TOTAL DEPTH OF BORING</b> 17.6 Ft.                                                                           |  |                                                                  | <b>17. TOTAL RECOVERY FOR BORING</b> 16.3 Ft.                                                                                                            |                                                                                                                                                           |
|                                                                                                                    |  |                                                                  | <b>18. SIGNATURE AND TITLE OF INSPECTOR</b><br>KM                                                                                                        |                                                                                                                                                           |

| ELEV.<br>(ft) | DEPTH<br>(ft) | LEGEND | CLASSIFICATION OF MATERIALS<br>Depths and elevations based on measured values                                                                                                  | %<br>REC. | BOX OR<br>SAMPLE | REMARKS                                                                                    |
|---------------|---------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------|--------------------------------------------------------------------------------------------|
| -24.7         | 0.0           |        |                                                                                                                                                                                |           |                  |                                                                                            |
| -26.3         | 1.6           |        | SAND, fine grained, quartz, little clay, trace shell hash, 2.0" silty pocket @ 0.1', 3 rocks at 1.6' - 1.0", 0.5" and 0.25", olive brown (2.5Y-4/3), (SC).                     |           | 1                | Sample #1, Depth = 0.8'<br>Mean (mm): 0.16, Phi Sorting: 0.71<br>Fines (230): 12.83% (SC)  |
| -27.2         | 2.5           |        | SAND, fine grained, quartz, some clay, trace organics, trace rock, trace shell hash, rocks up to 0.25", dark grayish brown (2.5Y-4/2), (SC).                                   |           | 2                | Sample #2, Depth = 2.0'<br>Mean (mm): 0.17, Phi Sorting: 1.10<br>Fines (230): 33.50% (SC)  |
| -28.8         | 4.1           |        | SAND, fine grained, quartz, little clay, clay distributed in layer and within clayey pockets up to (3.0" x 1.0"), light olive brown (2.5Y-5/3), (SC).                          |           | 3                | Sample #3, Depth = 3.3'<br>Mean (mm): 0.22, Phi Sorting: 0.65<br>Fines (230): 12.13% (SC)  |
| -32.4         | 7.7           |        | SAND, fine grained, quartz, trace clay, (3.0" x 1.0") clayey pockets @ 4.8' and 6.6', dark grayish brown (2.5Y-4/2), (SP).                                                     |           | 4                | Sample #4, Depth = 5.9'<br>Mean (mm): 0.22, Phi Sorting: 0.67<br>Fines (230): 3.60% (SP)   |
| -33.1         | 8.4           |        | SAND, fine grained, quartz, trace clay, trace organics, (3.0" x 0.75") clay pocket @ 8.3', olive brown (2.5Y-4/3), (SP).                                                       |           | 5                | Sample #5, Depth = 8.0'<br>Mean (mm): 0.27, Phi Sorting: 0.68<br>Fines (230): 3.78% (SP)   |
| -33.5         | 8.8           |        | CLAY, trace organics, (1.5" x 1.0") sandy pocket @ 8.5', dark greenish gray (10Y-4/1), (CL).                                                                                   |           | T1               | Sample #T1, Depth = 8.6'<br>Ave. Field Vane (tsf): 0.27                                    |
| -34.8         | 10.1          |        | SAND, fine grained, quartz, trace clay, (3.0" x 0.5") clayey pocket @ 9.4', dark gray (2.5Y-4/1), (SP).                                                                        |           | 7                |                                                                                            |
| -36.6         | 11.9          |        | Clayey SAND, fine grained, quartz, trace organics, (3.0" x 1.5") some organics pocket @ 11.0' with trace wood fragments up to 0.75", very dark grayish brown (2.5Y-3/2), (SC). |           | 6                | Sample #6, Depth = 11.2'<br>Mean (mm): 0.17, Phi Sorting: 0.69<br>Fines (230): 42.23% (SC) |
| -37.8         | 13.1          |        | SAND, fine grained, quartz, trace clay, dark gray (2.5Y-4/1), (SP).                                                                                                            |           | 7                | Sample #7, Depth = 12.5'<br>Mean (mm): 0.26, Phi Sorting: 0.34<br>Fines (230): 4.19% (SP)  |
| -38.8         | 14.1          |        | SAND, fine grained, quartz, little clay, trace organics, (3.0" x 2.0") clayey pocket @ 13.3', (3.0" x 1.0") clayey pocket 14.1', dark gray (2.5Y-4/1), (SC).                   |           | 8                | Sample #8, Depth = 13.6'<br>Mean (mm): 0.20, Phi Sorting: 0.51<br>Fines (230): 16.20% (SC) |
| -40.6         | 15.9          |        | SAND, fine grained, quartz, trace clay, dark gray (2.5Y-4/1), (SP).                                                                                                            |           | 7                |                                                                                            |
| -41.0         | 16.3          |        | CLAY, very soft, Bit Sample, dark greenish gray (5GY-4/1), (CL).                                                                                                               |           |                  |                                                                                            |
| -42.3         | 17.6          |        | No Recovery.                                                                                                                                                                   |           |                  |                                                                                            |
|               |               |        | End of Boring                                                                                                                                                                  |           |                  |                                                                                            |

MCFADDIN 2018 VC.GPJ 8/3/18

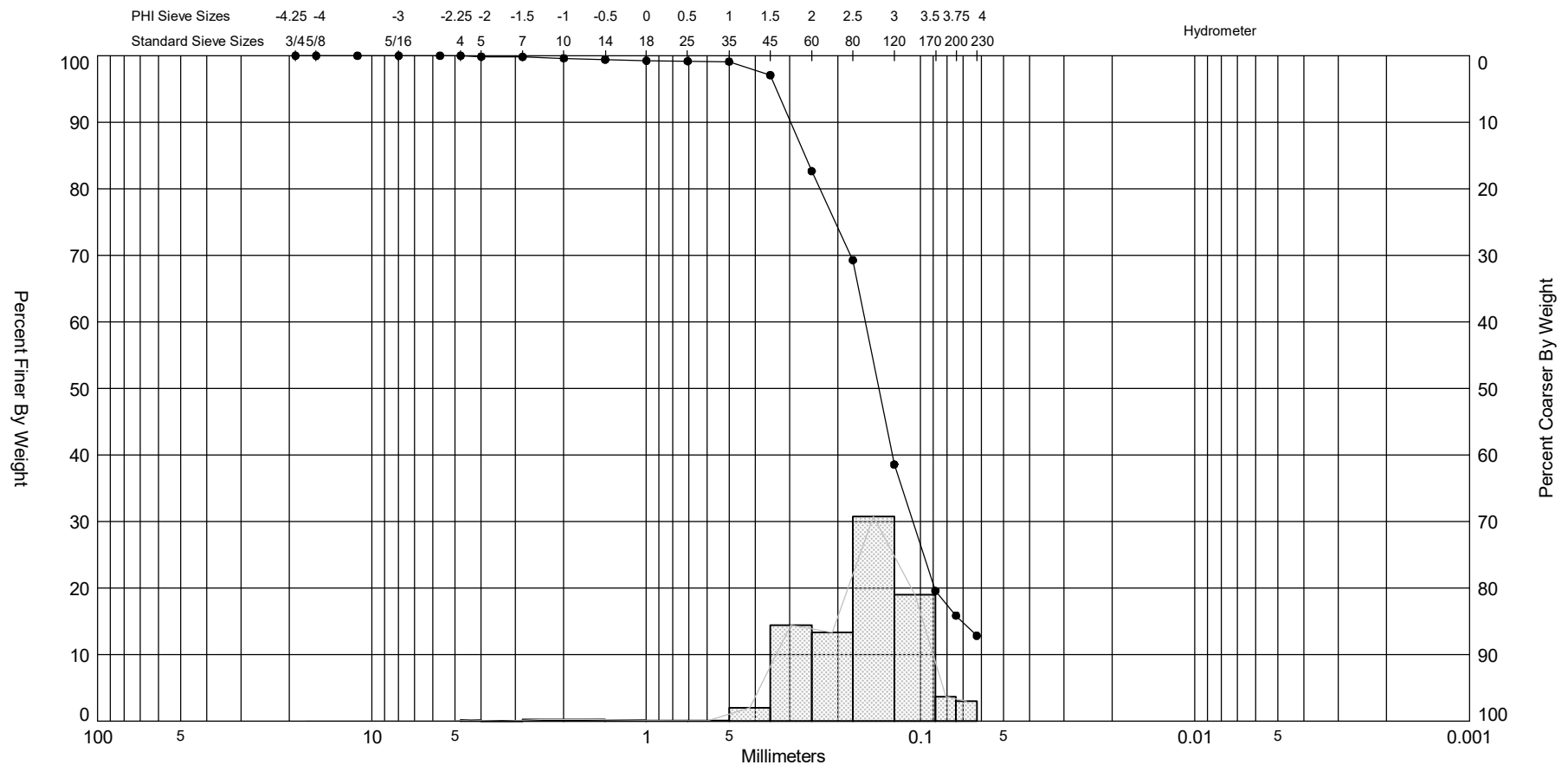
|                                                                                |                                   |                                     |                                |                                                                                                                                                                              |                     |                      |                 |
|--------------------------------------------------------------------------------|-----------------------------------|-------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|-----------------|
| <b>Granularmetric Report</b><br>Depths and elevations based on measured values |                                   |                                     |                                | <br><b>APTIM</b><br>2481 NW Boca Raton Blvd.<br>Boca Raton, FL 33431<br>ph (561) 391-8102 |                     |                      |                 |
| Project Name: McFaddin NWR Beach Ridge Restoration                             |                                   |                                     |                                |                                                                                                                                                                              |                     |                      |                 |
| Sample Name: JCVC-18-37 COMP                                                   |                                   |                                     |                                |                                                                                                                                                                              |                     |                      |                 |
| Analysis Date: 10-05-18                                                        |                                   |                                     |                                |                                                                                                                                                                              |                     |                      |                 |
| Analyzed By: BF                                                                |                                   |                                     |                                |                                                                                                                                                                              |                     |                      |                 |
| Easting (ft):<br><b>3,478,837</b>                                              |                                   | Northing (ft):<br><b>13,789,147</b> |                                | Coordinate System:<br><b>Texas South Central</b>                                                                                                                             |                     | Elevation (ft):      |                 |
| USCS:<br><b>SC</b>                                                             |                                   | Munsell:                            |                                | Comments:<br><b>COMPOSITE</b>                                                                                                                                                |                     |                      |                 |
| Dry Weight (g):<br><b>100.00</b>                                               | Wash Weight (g):<br><b>100.00</b> | Pan Retained (g):<br><b>15.19</b>   | Sieve Loss (%):<br><b>0.07</b> | Fines (%):<br><b>#200 - 16.53</b><br><b>#230 - 15.26</b>                                                                                                                     | Organics (%):       | Carbonates (%):      | Shell Hash (%): |
| Sieve Number                                                                   | Sieve Size (Phi)                  | Sieve Size (Millimeters)            | Grams Retained                 | % Weight Retained                                                                                                                                                            | Cum. Grams Retained | C. % Weight Retained |                 |
| 3/4"                                                                           | -4.25                             | 19.03                               | 0.00                           | 0.00                                                                                                                                                                         | 0.00                | 0.00                 |                 |
| 5/8"                                                                           | -4.00                             | 16.00                               | 0.00                           | 0.00                                                                                                                                                                         | 0.00                | 0.00                 |                 |
| 7/16"                                                                          | -3.50                             | 11.31                               | 0.00                           | 0.00                                                                                                                                                                         | 0.00                | 0.00                 |                 |
| 5/16"                                                                          | -3.00                             | 8.00                                | 0.00                           | 0.00                                                                                                                                                                         | 0.00                | 0.00                 |                 |
| 3.5                                                                            | -2.50                             | 5.66                                | 0.00                           | 0.00                                                                                                                                                                         | 0.00                | 0.00                 |                 |
| 4                                                                              | -2.25                             | 4.76                                | 0.00                           | 0.00                                                                                                                                                                         | 0.00                | 0.00                 |                 |
| 5                                                                              | -2.00                             | 4.00                                | 0.06                           | 0.06                                                                                                                                                                         | 0.06                | 0.06                 |                 |
| 7                                                                              | -1.50                             | 2.83                                | 0.07                           | 0.07                                                                                                                                                                         | 0.13                | 0.13                 |                 |
| 10                                                                             | -1.00                             | 2.00                                | 0.06                           | 0.06                                                                                                                                                                         | 0.19                | 0.19                 |                 |
| 14                                                                             | -0.50                             | 1.41                                | 0.06                           | 0.06                                                                                                                                                                         | 0.25                | 0.25                 |                 |
| 18                                                                             | 0.00                              | 1.00                                | 0.04                           | 0.04                                                                                                                                                                         | 0.29                | 0.29                 |                 |
| 25                                                                             | 0.50                              | 0.71                                | 0.04                           | 0.04                                                                                                                                                                         | 0.33                | 0.33                 |                 |
| 35                                                                             | 1.00                              | 0.50                                | 0.08                           | 0.08                                                                                                                                                                         | 0.41                | 0.41                 |                 |
| 45                                                                             | 1.50                              | 0.35                                | 6.29                           | 6.29                                                                                                                                                                         | 6.70                | 6.70                 |                 |
| 60                                                                             | 2.00                              | 0.25                                | 32.92                          | 32.92                                                                                                                                                                        | 39.62               | 39.62                |                 |
| 80                                                                             | 2.50                              | 0.18                                | 18.85                          | 18.85                                                                                                                                                                        | 58.47               | 58.47                |                 |
| 120                                                                            | 3.00                              | 0.13                                | 14.66                          | 14.66                                                                                                                                                                        | 73.13               | 73.13                |                 |
| 170                                                                            | 3.50                              | 0.09                                | 8.43                           | 8.43                                                                                                                                                                         | 81.56               | 81.56                |                 |
| 200                                                                            | 3.75                              | 0.07                                | 1.91                           | 1.91                                                                                                                                                                         | 83.47               | 83.47                |                 |
| 230                                                                            | 4.00                              | 0.06                                | 1.27                           | 1.27                                                                                                                                                                         | 84.74               | 84.74                |                 |
|                                                                                |                                   |                                     |                                |                                                                                                                                                                              |                     |                      |                 |
| Phi 5                                                                          | Phi 16                            | Phi 25                              | Phi 50                         | Phi 75                                                                                                                                                                       | Phi 84              | Phi 95               |                 |
|                                                                                | 3.85                              | 3.11                                | 2.28                           | 1.78                                                                                                                                                                         | 1.64                | 1.36                 |                 |
| Moment                                                                         | Mean Phi                          | Mean mm                             | Sorting                        | Skewness                                                                                                                                                                     | Kurtosis            |                      |                 |
| Statistics                                                                     | 2.21                              | 0.22                                | 0.67                           | 0                                                                                                                                                                            | 5.37                |                      |                 |

MCFADDIN\_COMPOSITE\_20181008.GPJ 11/19/18



| Gravel |      | Sand   |        |      | Silt and Clay |
|--------|------|--------|--------|------|---------------|
| Coarse | Fine | Coarse | Medium | Fine |               |

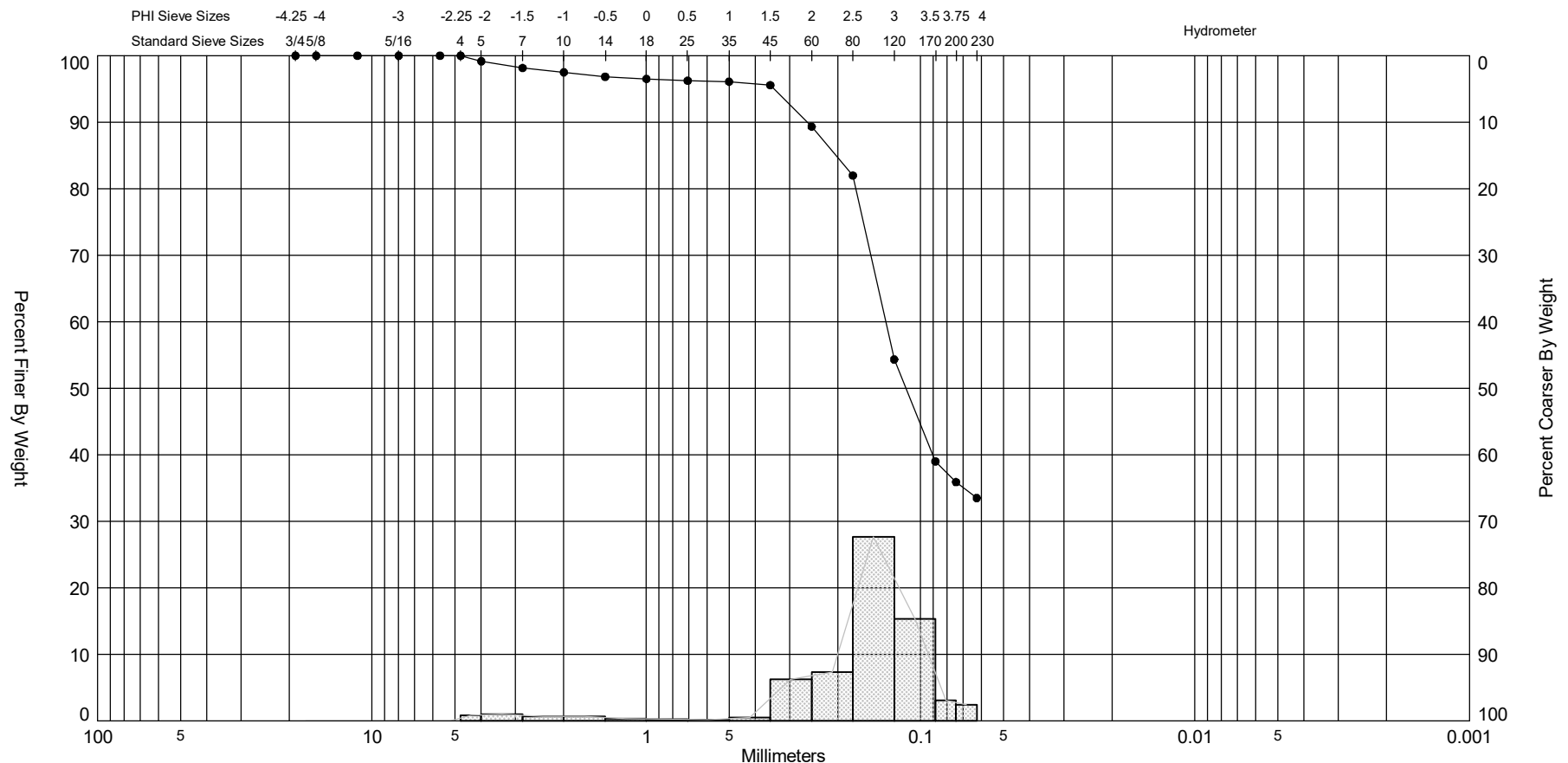
| Sample                                                                              | Symbol                                                                              | Elev. (ft) | USCS | % Fines                      | % Organics | % Carbonates                                                                   | Median | Mean | Skew | Kurt | Sort | Sample Information |                                      |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------|------|------------------------------|------------|--------------------------------------------------------------------------------|--------|------|------|------|------|--------------------|--------------------------------------|
| JCVC-18-37 COMP                                                                     |  |            | SC   | #200 - 16.53<br>#230 - 15.26 |            |                                                                                | 2.28   | 2.21 | 0    | 5.37 | 0.67 | Project Name:      | McFaddin NWR Beach Ridge Restoration |
| Comments: COMPOSITE                                                                 |                                                                                     |            |      |                              |            |                                                                                |        |      |      |      |      | Analysis Date:     | 10-05-18                             |
| Depths and elevations based on measured values                                      |                                                                                     |            |      |                              |            |                                                                                |        |      |      |      |      | Analyzed By:       | BF                                   |
|  |                                                                                     |            |      |                              |            | APTIM<br>2481 NW Boca Raton Blvd.<br>Boca Raton, FL 33431<br>ph (561) 391-8102 |        |      |      |      |      | Easting (X, ft):   | 3,478,837                            |
|                                                                                     |                                                                                     |            |      |                              |            |                                                                                |        |      |      |      |      | Northing (Y, ft):  | 13,789,147                           |
|                                                                                     |                                                                                     |            |      |                              |            |                                                                                |        |      |      |      |      | Horizontal Datum:  | NAD 1983                             |
|                                                                                     |                                                                                     |            |      |                              |            |                                                                                |        |      |      |      |      | Vertical Datum:    | NAVD 88                              |



| Gravel |      | Sand   |        |      | Silt and Clay |
|--------|------|--------|--------|------|---------------|
| Coarse | Fine | Coarse | Medium | Fine |               |

| Sample                                                                              | Symbol | Elev. (ft) | USCS | % Fines                      | % Organics | % Carbonates                                                                   | Median | Mean | Skew  | Kurt | Sort | Sample Information |                                      |
|-------------------------------------------------------------------------------------|--------|------------|------|------------------------------|------------|--------------------------------------------------------------------------------|--------|------|-------|------|------|--------------------|--------------------------------------|
| JCVC-18-37 #1                                                                       | —●—    | -25.5      | SC   | #200 - 15.87<br>#230 - 12.83 |            |                                                                                | 2.81   | 2.62 | -1.38 | 8.83 | 0.71 | Project Name:      | McFaddin NWR Beach Ridge Restoration |
| Comments:                                                                           |        |            |      |                              |            |                                                                                |        |      |       |      |      | Analysis Date:     | 07-19-18                             |
| Depths and elevations based on measured values                                      |        |            |      |                              |            |                                                                                |        |      |       |      |      | Analyzed By:       | HMV                                  |
|  |        |            |      |                              |            | APTIM<br>2481 NW Boca Raton Blvd.<br>Boca Raton, FL 33431<br>ph (561) 391-8102 |        |      |       |      |      | Easting (X, ft):   | 3,478,837                            |
|                                                                                     |        |            |      |                              |            |                                                                                |        |      |       |      |      | Northing (Y, ft):  | 13,789,147                           |
|                                                                                     |        |            |      |                              |            |                                                                                |        |      |       |      |      | Horizontal Datum:  | NAD 1983                             |
|                                                                                     |        |            |      |                              |            |                                                                                |        |      |       |      |      | Vertical Datum:    | NAVD88                               |

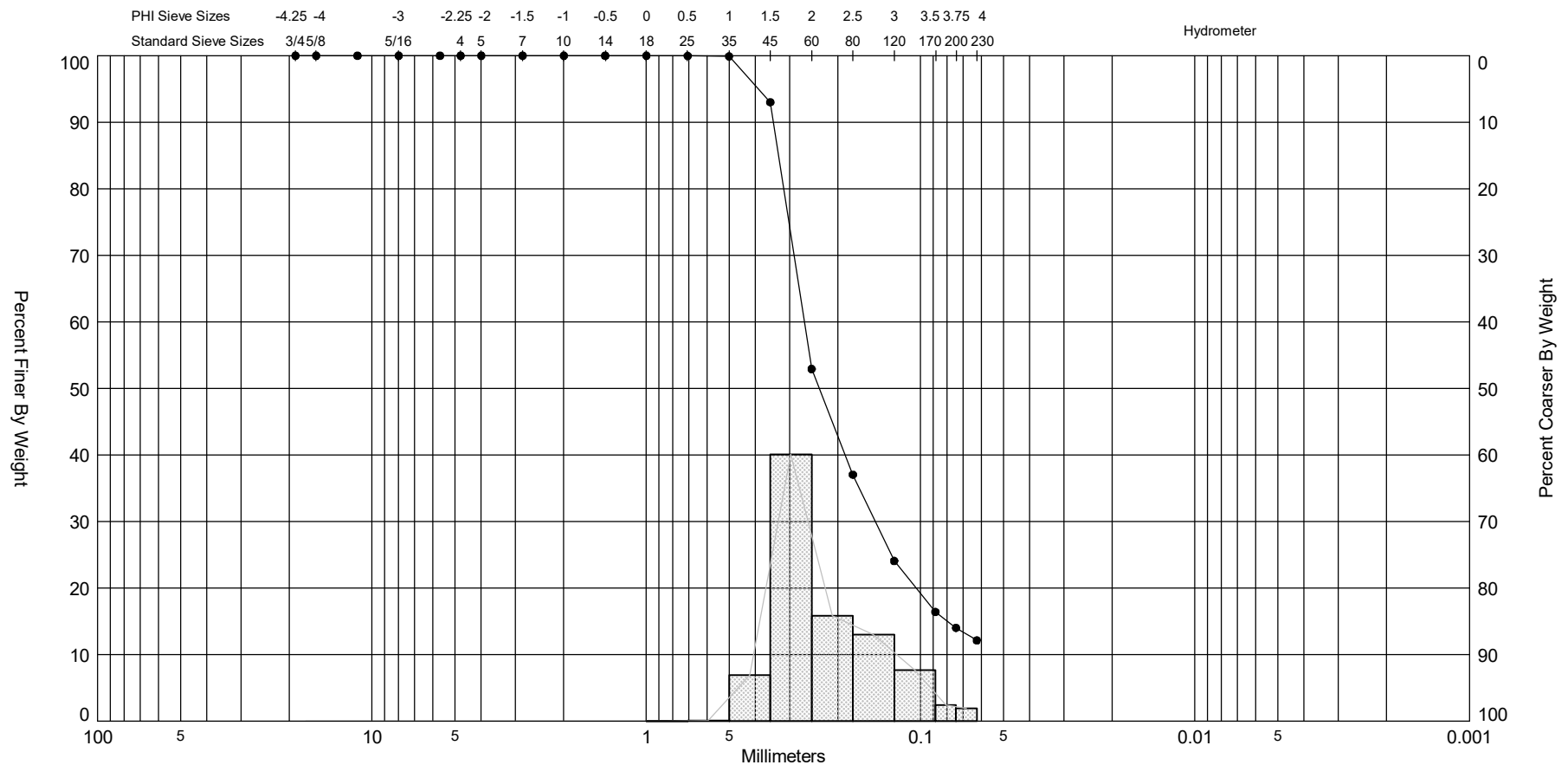
MCFADDIN\_2018\_VC.GPJ 8/14/18



| Gravel |      | Sand   |        |      | Silt and Clay |
|--------|------|--------|--------|------|---------------|
| Coarse | Fine | Coarse | Medium | Fine |               |

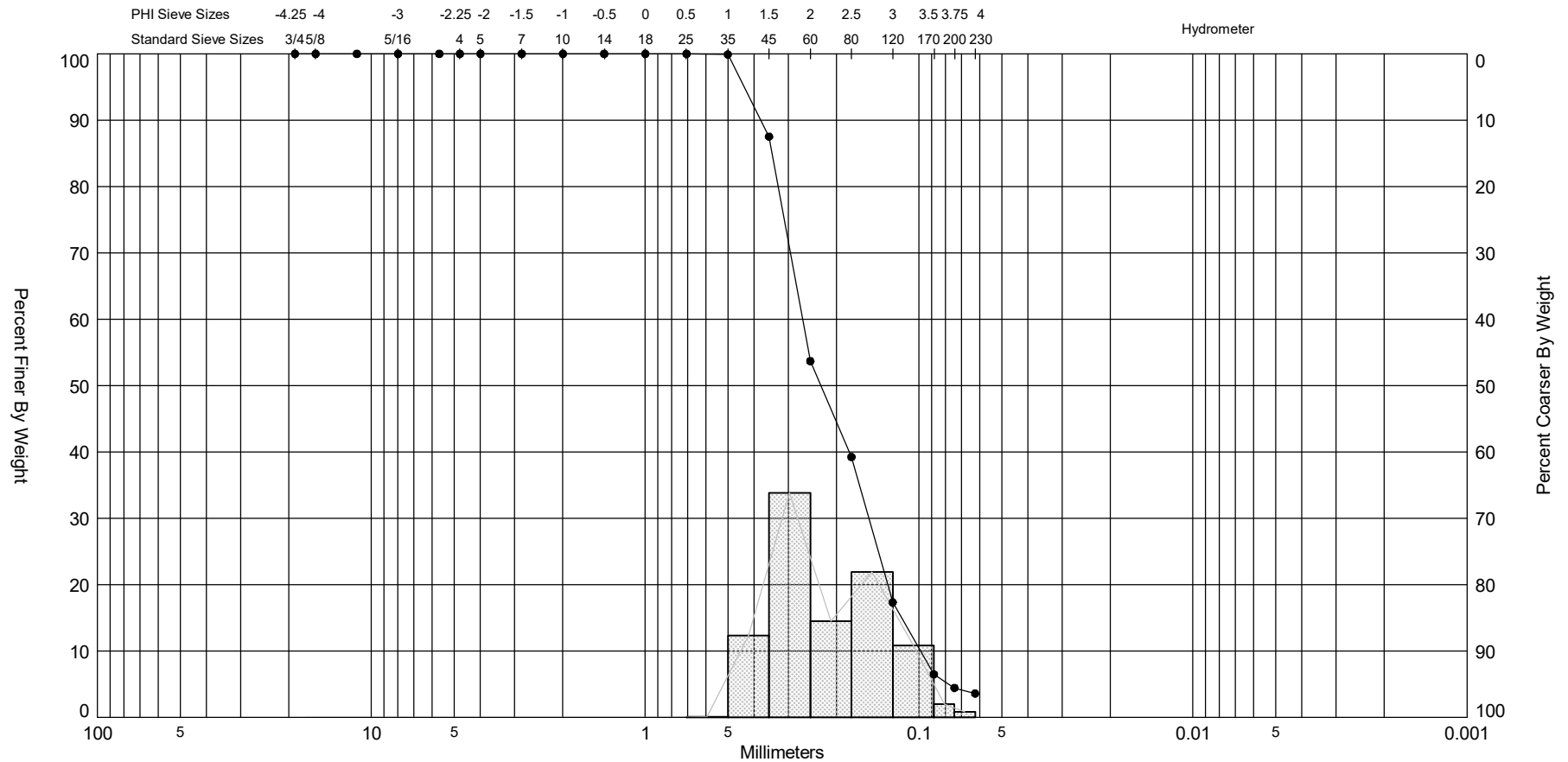
| Sample                                                                              | Symbol | Elev. (ft) | USCS | % Fines                      | % Organics | % Carbonates | Median | Mean | Skew  | Kurt | Sort | Sample Information |                                      |
|-------------------------------------------------------------------------------------|--------|------------|------|------------------------------|------------|--------------|--------|------|-------|------|------|--------------------|--------------------------------------|
| JCVC-18-37 #2                                                                       | —●—    | -26.7      | SC   | #200 - 35.89<br>#230 - 33.50 |            |              | 3.14   | 2.55 | -2.59 | 10.5 | 1.1  | Project Name:      | McFaddin NWR Beach Ridge Restoration |
| Comments:                                                                           |        |            |      |                              |            |              |        |      |       |      |      | Analysis Date:     | 07-19-18                             |
| Depths and elevations based on measured values                                      |        |            |      |                              |            |              |        |      |       |      |      | Analyzed By:       | SMT                                  |
|  |        |            |      |                              |            |              |        |      |       |      |      | Easting (X, ft):   | 3,478,837                            |
|                                                                                     |        |            |      |                              |            |              |        |      |       |      |      | Northing (Y, ft):  | 13,789,147                           |
|                                                                                     |        |            |      |                              |            |              |        |      |       |      |      | Horizontal Datum:  | NAD 1983                             |
|                                                                                     |        |            |      |                              |            |              |        |      |       |      |      | Vertical Datum:    | NAVD88                               |

APTIM  
2481 NW Boca Raton Blvd.  
Boca Raton, FL 33431  
ph (561) 391-8102



| Gravel |      | Sand   |        |      | Silt and Clay |
|--------|------|--------|--------|------|---------------|
| Coarse | Fine | Coarse | Medium | Fine |               |

| Sample                                                                              | Symbol | Elev. (ft) | USCS | % Fines                      | % Organics | % Carbonates | Median | Mean | Skew | Kurt | Sort | Sample Information |                                      |
|-------------------------------------------------------------------------------------|--------|------------|------|------------------------------|------------|--------------|--------|------|------|------|------|--------------------|--------------------------------------|
| JCVC-18-37 #3                                                                       | —●—    | -28.0      | SC   | #200 - 14.02<br>#230 - 12.13 |            |              | 2.09   | 2.17 | 0.81 | 2.88 | 0.65 | Project Name:      | McFaddin NWR Beach Ridge Restoration |
| Comments:                                                                           |        |            |      |                              |            |              |        |      |      |      |      | Analysis Date:     | 07-19-18                             |
| Depths and elevations based on measured values                                      |        |            |      |                              |            |              |        |      |      |      |      | Analyzed By:       | SMT                                  |
|  |        |            |      |                              |            |              |        |      |      |      |      | Easting (X, ft):   | 3,478,837                            |
|                                                                                     |        |            |      |                              |            |              |        |      |      |      |      | Northing (Y, ft):  | 13,789,147                           |
|                                                                                     |        |            |      |                              |            |              |        |      |      |      |      | Horizontal Datum:  | NAD 1983                             |
|                                                                                     |        |            |      |                              |            |              |        |      |      |      |      | Vertical Datum:    | NAVD88                               |



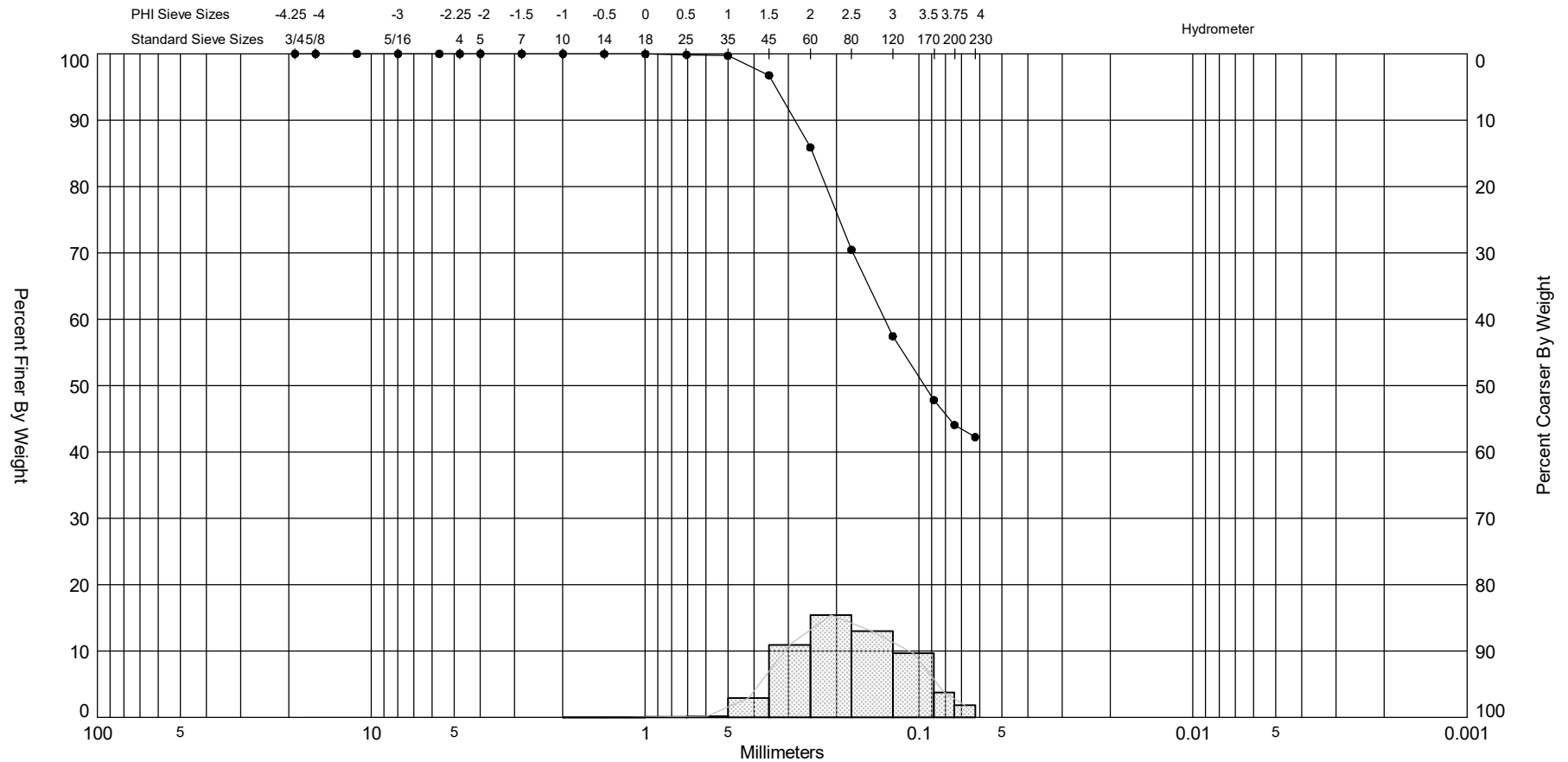
| Gravel |      | Sand   |        |      | Silt and Clay |
|--------|------|--------|--------|------|---------------|
| Coarse | Fine | Coarse | Medium | Fine |               |

| Sample                                                                              | Symbol | Elev. (ft) | USCS | % Fines                    | % Organics | % Carbonates                                                                   | Median | Mean | Skew | Kurt | Sort | Sample Information |                                      |
|-------------------------------------------------------------------------------------|--------|------------|------|----------------------------|------------|--------------------------------------------------------------------------------|--------|------|------|------|------|--------------------|--------------------------------------|
| JCVC-18-37 #4                                                                       | —●—    | -30.6      | SP   | #200 - 4.44<br>#230 - 3.60 |            |                                                                                | 2.13   | 2.21 | 0.35 | 2.13 | 0.67 | Project Name:      | McFaddin NWR Beach Ridge Restoration |
| Comments:                                                                           |        |            |      |                            |            |                                                                                |        |      |      |      |      | Analysis Date:     | 07-19-18                             |
| Depths and elevations based on measured values                                      |        |            |      |                            |            |                                                                                |        |      |      |      |      | Analyzed By:       | SMT                                  |
|  |        |            |      |                            |            | APTIM<br>2481 NW Boca Raton Blvd.<br>Boca Raton, FL 33431<br>ph (561) 391-8102 |        |      |      |      |      | Easting (X, ft):   | 3,478,837                            |
|                                                                                     |        |            |      |                            |            |                                                                                |        |      |      |      |      | Northing (Y, ft):  | 13,789,147                           |
|                                                                                     |        |            |      |                            |            |                                                                                |        |      |      |      |      | Horizontal Datum:  | NAD 1983                             |
|                                                                                     |        |            |      |                            |            |                                                                                |        |      |      |      |      | Vertical Datum:    | NAVD88                               |





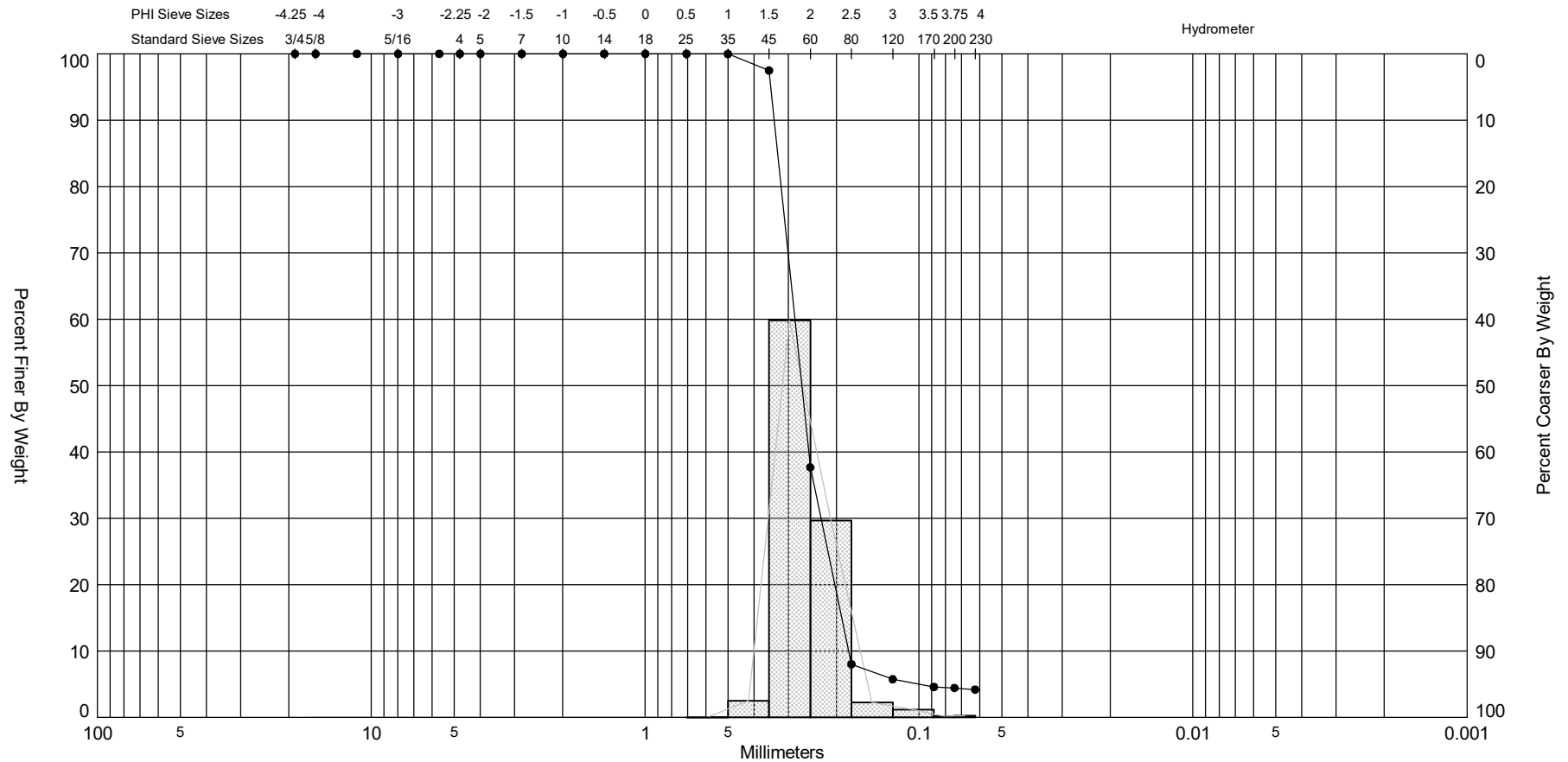
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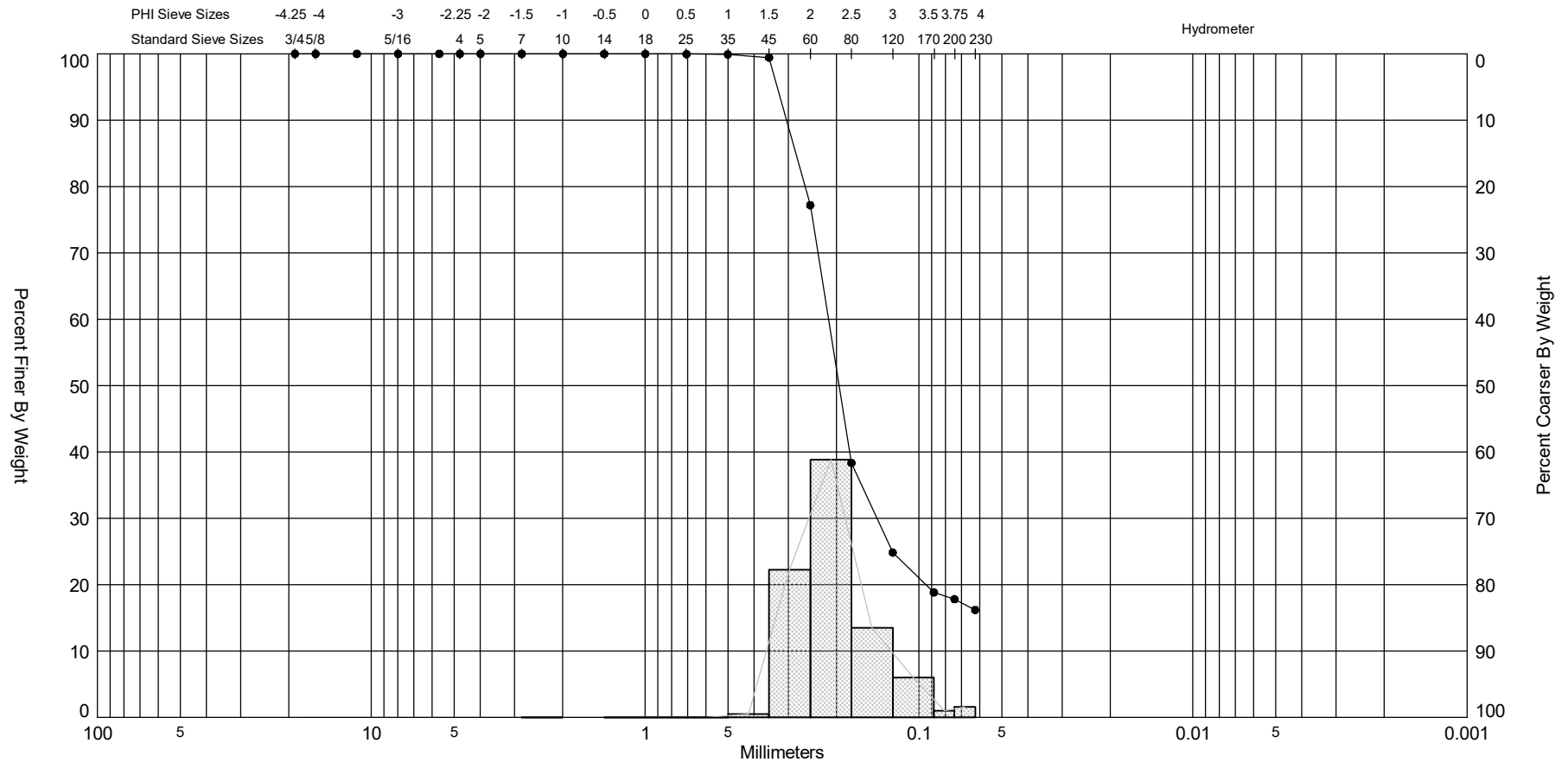
| Gravel |      | Sand   |        |      | Silt and Clay |
|--------|------|--------|--------|------|---------------|
| Coarse | Fine | Coarse | Medium | Fine |               |

| Sample                                                                              | Symbol | Elev. (ft) | USCS | % Fines                      | % Organics | % Carbonates | Median                                                                         | Mean | Skew  | Kurt | Sort | Sample Information |                                      |
|-------------------------------------------------------------------------------------|--------|------------|------|------------------------------|------------|--------------|--------------------------------------------------------------------------------|------|-------|------|------|--------------------|--------------------------------------|
| JCVC-18-37 #6                                                                       | —●—    | -35.9      | SC   | #200 - 44.06<br>#230 - 42.23 |            |              | 3.39                                                                           | 2.52 | -0.04 | 2.61 | 0.69 | Project Name:      | McFaddin NWR Beach Ridge Restoration |
| Comments:                                                                           |        |            |      |                              |            |              |                                                                                |      |       |      |      | Analysis Date:     | 07-19-18                             |
| Depths and elevations based on measured values                                      |        |            |      |                              |            |              |                                                                                |      |       |      |      | Analyzed By:       | HMV                                  |
|  |        |            |      |                              |            |              | APTIM<br>2481 NW Boca Raton Blvd.<br>Boca Raton, FL 33431<br>ph (561) 391-8102 |      |       |      |      | Easting (X, ft):   | 3,478,837                            |
|                                                                                     |        |            |      |                              |            |              |                                                                                |      |       |      |      | Northing (Y, ft):  | 13,789,147                           |
|                                                                                     |        |            |      |                              |            |              |                                                                                |      |       |      |      | Horizontal Datum:  | NAD 1983                             |
|                                                                                     |        |            |      |                              |            |              |                                                                                |      |       |      |      | Vertical Datum:    | NAVD88                               |

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| Gravel |      | Sand   |        |      | Silt and Clay |
|--------|------|--------|--------|------|---------------|
| Coarse | Fine | Coarse | Medium | Fine |               |

| Sample                                                                              | Symbol | Elev. (ft) | USCS | % Fines                      | % Organics | % Carbonates | Median                                                                         | Mean | Skew | Kurt | Sort | Sample Information |                                      |
|-------------------------------------------------------------------------------------|--------|------------|------|------------------------------|------------|--------------|--------------------------------------------------------------------------------|------|------|------|------|--------------------|--------------------------------------|
| JCVC-18-37 #8                                                                       | —●—    | -38.3      | SC   | #200 - 17.80<br>#230 - 16.20 |            |              | 2.35                                                                           | 2.31 | 0.82 | 4.22 | 0.51 | Project Name:      | McFaddin NWR Beach Ridge Restoration |
| Comments:                                                                           |        |            |      |                              |            |              |                                                                                |      |      |      |      | Analysis Date:     | 07-19-18                             |
| Depths and elevations based on measured values                                      |        |            |      |                              |            |              |                                                                                |      |      |      |      | Analyzed By:       | HMV                                  |
|  |        |            |      |                              |            |              | APTIM<br>2481 NW Boca Raton Blvd.<br>Boca Raton, FL 33431<br>ph (561) 391-8102 |      |      |      |      | Easting (X, ft):   | 3,478,837                            |
|                                                                                     |        |            |      |                              |            |              |                                                                                |      |      |      |      | Northing (Y, ft):  | 13,789,147                           |
|                                                                                     |        |            |      |                              |            |              |                                                                                |      |      |      |      | Horizontal Datum:  | NAD 1983                             |
|                                                                                     |        |            |      |                              |            |              |                                                                                |      |      |      |      | Vertical Datum:    | NAVD88                               |

|                                                                                            |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
|--------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------------------|-----------------|
| <div>Granularmetric Report</div> <div>Depths and elevations based on measured values</div> |                               |                                                                  |                             | <div><br/>APTIM<br/>2481 NW Boca Raton Blvd.<br/>Boca Raton, FL 33431<br/>ph (561) 391-8102</div> |                     |                                     |                 |
| Project Name: McFaddin NWR Beach Ridge Restoration                                         |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Sample Name: JCVC-18-37 #1                                                                 |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Analysis Date: 07-19-18                                                                    |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Analyzed By: HMV                                                                           |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Easting (ft):<br><br>3,478,837                                                             |                               | Northing (ft):<br><br>13,789,147                                 |                             | Coordinate System:<br><br>Texas South Central                                                                                                                                        |                     | Elevation (ft):<br><br>-25.5 NAVD88 |                 |
| USCS:<br><br>SC                                                                            |                               | Munsell:   Wet - 2.5Y-4/3<br>Dry - 2.5Y-6/3<br>Washed - 2.5Y-7/3 |                             | Comments:                                                                                                                                                                            |                     |                                     |                 |
| Dry Weight (g):<br><br>95.38                                                               | Wash Weight (g):<br><br>85.96 | Pan Retained (g):<br><br>2.77                                    | Sieve Loss (%):<br><br>0.05 | Fines (%):<br>#200 - 15.87<br>#230 - 12.83                                                                                                                                           | Organics (%):       | Carbonates (%):                     | Shell Hash (%): |
| Sieve Number                                                                               | Sieve Size (Phi)              | Sieve Size (Millimeters)                                         | Grams Retained              | % Weight Retained                                                                                                                                                                    | Cum. Grams Retained | C. % Weight Retained                |                 |
| 3/4"                                                                                       | -4.25                         | 19.03                                                            | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5/8"                                                                                       | -4.00                         | 16.00                                                            | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 7/16"                                                                                      | -3.50                         | 11.31                                                            | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5/16"                                                                                      | -3.00                         | 8.00                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 3.5                                                                                        | -2.50                         | 5.66                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 4                                                                                          | -2.25                         | 4.76                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5                                                                                          | -2.00                         | 4.00                                                             | 0.13                        | 0.14                                                                                                                                                                                 | 0.13                | 0.14                                |                 |
| 7                                                                                          | -1.50                         | 2.83                                                             | 0.03                        | 0.03                                                                                                                                                                                 | 0.16                | 0.17                                |                 |
| 10                                                                                         | -1.00                         | 2.00                                                             | 0.20                        | 0.21                                                                                                                                                                                 | 0.36                | 0.38                                |                 |
| 14                                                                                         | -0.50                         | 1.41                                                             | 0.20                        | 0.21                                                                                                                                                                                 | 0.56                | 0.59                                |                 |
| 18                                                                                         | 0.00                          | 1.00                                                             | 0.14                        | 0.15                                                                                                                                                                                 | 0.70                | 0.74                                |                 |
| 25                                                                                         | 0.50                          | 0.71                                                             | 0.08                        | 0.08                                                                                                                                                                                 | 0.78                | 0.82                                |                 |
| 35                                                                                         | 1.00                          | 0.50                                                             | 0.06                        | 0.06                                                                                                                                                                                 | 0.84                | 0.88                                |                 |
| 45                                                                                         | 1.50                          | 0.35                                                             | 1.95                        | 2.04                                                                                                                                                                                 | 2.79                | 2.92                                |                 |
| 60                                                                                         | 2.00                          | 0.25                                                             | 13.76                       | 14.43                                                                                                                                                                                | 16.55               | 17.35                               |                 |
| 80                                                                                         | 2.50                          | 0.18                                                             | 12.75                       | 13.37                                                                                                                                                                                | 29.30               | 30.72                               |                 |
| 120                                                                                        | 3.00                          | 0.13                                                             | 29.30                       | 30.72                                                                                                                                                                                | 58.60               | 61.44                               |                 |
| 170                                                                                        | 3.50                          | 0.09                                                             | 18.11                       | 18.99                                                                                                                                                                                | 76.71               | 80.43                               |                 |
| 200                                                                                        | 3.75                          | 0.07                                                             | 3.53                        | 3.70                                                                                                                                                                                 | 80.24               | 84.13                               |                 |
| 230                                                                                        | 4.00                          | 0.06                                                             | 2.90                        | 3.04                                                                                                                                                                                 | 83.14               | 87.17                               |                 |
|                                                                                            |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Phi 5                                                                                      | Phi 16                        | Phi 25                                                           | Phi 50                      | Phi 75                                                                                                                                                                               | Phi 84              | Phi 95                              |                 |
|                                                                                            | 3.74                          | 3.36                                                             | 2.81                        | 2.29                                                                                                                                                                                 | 1.95                | 1.57                                |                 |
| Moment                                                                                     | Mean Phi                      | Mean mm                                                          | Sorting                     | Skewness                                                                                                                                                                             | Kurtosis            |                                     |                 |
| Statistics                                                                                 | 2.62                          | 0.16                                                             | 0.71                        | -1.38                                                                                                                                                                                | 8.83                |                                     |                 |

|                                                                                            |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
|--------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------------------|-----------------|
| <div>Granularmetric Report</div> <div>Depths and elevations based on measured values</div> |                               |                                                                  |                             | <div><br/>APTIM<br/>2481 NW Boca Raton Blvd.<br/>Boca Raton, FL 33431<br/>ph (561) 391-8102</div> |                     |                                     |                 |
| Project Name: McFaddin NWR Beach Ridge Restoration                                         |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Sample Name: JCVC-18-37 #2                                                                 |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Analysis Date: 07-19-18                                                                    |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Analyzed By: SMT                                                                           |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Easting (ft):<br><br>3,478,837                                                             |                               | Northing (ft):<br><br>13,789,147                                 |                             | Coordinate System:<br><br>Texas South Central                                                                                                                                        |                     | Elevation (ft):<br><br>-26.7 NAVD88 |                 |
| USCS:<br><br>SC                                                                            |                               | Munsell:   Wet - 2.5Y-4/2<br>Dry - 2.5Y-6/2<br>Washed - 2.5Y-7/3 |                             | Comments:                                                                                                                                                                            |                     |                                     |                 |
| Dry Weight (g):<br><br>84.53                                                               | Wash Weight (g):<br><br>57.34 | Pan Retained (g):<br><br>1.11                                    | Sieve Loss (%):<br><br>0.01 | Fines (%):<br>#200 - 35.89<br>#230 - 33.50                                                                                                                                           | Organics (%):       | Carbonates (%):                     | Shell Hash (%): |
| Sieve Number                                                                               | Sieve Size (Phi)              | Sieve Size (Millimeters)                                         | Grams Retained              | % Weight Retained                                                                                                                                                                    | Cum. Grams Retained | C. % Weight Retained                |                 |
| 3/4"                                                                                       | -4.25                         | 19.03                                                            | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5/8"                                                                                       | -4.00                         | 16.00                                                            | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 7/16"                                                                                      | -3.50                         | 11.31                                                            | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5/16"                                                                                      | -3.00                         | 8.00                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 3.5                                                                                        | -2.50                         | 5.66                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 4                                                                                          | -2.25                         | 4.76                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5                                                                                          | -2.00                         | 4.00                                                             | 0.71                        | 0.84                                                                                                                                                                                 | 0.71                | 0.84                                |                 |
| 7                                                                                          | -1.50                         | 2.83                                                             | 0.85                        | 1.01                                                                                                                                                                                 | 1.56                | 1.85                                |                 |
| 10                                                                                         | -1.00                         | 2.00                                                             | 0.54                        | 0.64                                                                                                                                                                                 | 2.10                | 2.49                                |                 |
| 14                                                                                         | -0.50                         | 1.41                                                             | 0.57                        | 0.67                                                                                                                                                                                 | 2.67                | 3.16                                |                 |
| 18                                                                                         | 0.00                          | 1.00                                                             | 0.27                        | 0.32                                                                                                                                                                                 | 2.94                | 3.48                                |                 |
| 25                                                                                         | 0.50                          | 0.71                                                             | 0.24                        | 0.28                                                                                                                                                                                 | 3.18                | 3.76                                |                 |
| 35                                                                                         | 1.00                          | 0.50                                                             | 0.12                        | 0.14                                                                                                                                                                                 | 3.30                | 3.90                                |                 |
| 45                                                                                         | 1.50                          | 0.35                                                             | 0.46                        | 0.54                                                                                                                                                                                 | 3.76                | 4.44                                |                 |
| 60                                                                                         | 2.00                          | 0.25                                                             | 5.25                        | 6.21                                                                                                                                                                                 | 9.01                | 10.65                               |                 |
| 80                                                                                         | 2.50                          | 0.18                                                             | 6.23                        | 7.37                                                                                                                                                                                 | 15.24               | 18.02                               |                 |
| 120                                                                                        | 3.00                          | 0.13                                                             | 23.36                       | 27.64                                                                                                                                                                                | 38.60               | 45.66                               |                 |
| 170                                                                                        | 3.50                          | 0.09                                                             | 12.96                       | 15.33                                                                                                                                                                                | 51.56               | 60.99                               |                 |
| 200                                                                                        | 3.75                          | 0.07                                                             | 2.64                        | 3.12                                                                                                                                                                                 | 54.20               | 64.11                               |                 |
| 230                                                                                        | 4.00                          | 0.06                                                             | 2.02                        | 2.39                                                                                                                                                                                 | 56.22               | 66.50                               |                 |
|                                                                                            |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Phi 5                                                                                      | Phi 16                        | Phi 25                                                           | Phi 50                      | Phi 75                                                                                                                                                                               | Phi 84              | Phi 95                              |                 |
|                                                                                            |                               |                                                                  | 3.14                        | 2.63                                                                                                                                                                                 | 2.36                | 1.55                                |                 |
| Moment                                                                                     | Mean Phi                      | Mean mm                                                          | Sorting                     | Skewness                                                                                                                                                                             | Kurtosis            |                                     |                 |
| Statistics                                                                                 | 2.55                          | 0.17                                                             | 1.1                         | -2.59                                                                                                                                                                                | 10.5                |                                     |                 |

|                                                                                            |                                      |                                                                   |                                    |                                                                                                                                                                                                  |                     |                                            |                 |
|--------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------|-----------------|
| <div>Granularmetric Report</div> <div>Depths and elevations based on measured values</div> |                                      |                                                                   |                                    | <div><div>APTIM</div><div>2481 NW Boca Raton Blvd.<br/>Boca Raton, FL 33431<br/>ph (561) 391-8102</div></div> |                     |                                            |                 |
| Project Name: McFaddin NWR Beach Ridge Restoration                                         |                                      |                                                                   |                                    |                                                                                                                                                                                                  |                     |                                            |                 |
| Sample Name: JCVC-18-37 #3                                                                 |                                      |                                                                   |                                    |                                                                                                                                                                                                  |                     |                                            |                 |
| Analysis Date: 07-19-18                                                                    |                                      |                                                                   |                                    |                                                                                                                                                                                                  |                     |                                            |                 |
| Analyzed By: SMT                                                                           |                                      |                                                                   |                                    |                                                                                                                                                                                                  |                     |                                            |                 |
| Easting (ft):<br><div>3,478,837</div>                                                      |                                      | Northing (ft):<br><div>13,789,147</div>                           |                                    | Coordinate System:<br><div>Texas South Central</div>                                                                                                                                             |                     | Elevation (ft):<br><div>-28.0 NAVD88</div> |                 |
| USCS:<br><div>SC</div>                                                                     |                                      | Munsell:<br>Wet - 2.5Y-5/3<br>Dry - 2.5Y-6/3<br>Washed - 2.5Y-7/3 |                                    | Comments:                                                                                                                                                                                        |                     |                                            |                 |
| Dry Weight (g):<br><div>94.68</div>                                                        | Wash Weight (g):<br><div>84.02</div> | Pan Retained (g):<br><div>0.82</div>                              | Sieve Loss (%):<br><div>0.00</div> | Fines (%):<br>#200 - 14.02<br>#230 - 12.13                                                                                                                                                       | Organics (%):       | Carbonates (%):                            | Shell Hash (%): |
| Sieve Number                                                                               | Sieve Size (Phi)                     | Sieve Size (Millimeters)                                          | Grams Retained                     | % Weight Retained                                                                                                                                                                                | Cum. Grams Retained | C. % Weight Retained                       |                 |
| 3/4"                                                                                       | -4.25                                | 19.03                                                             | 0.00                               | 0.00                                                                                                                                                                                             | 0.00                | 0.00                                       |                 |
| 5/8"                                                                                       | -4.00                                | 16.00                                                             | 0.00                               | 0.00                                                                                                                                                                                             | 0.00                | 0.00                                       |                 |
| 7/16"                                                                                      | -3.50                                | 11.31                                                             | 0.00                               | 0.00                                                                                                                                                                                             | 0.00                | 0.00                                       |                 |
| 5/16"                                                                                      | -3.00                                | 8.00                                                              | 0.00                               | 0.00                                                                                                                                                                                             | 0.00                | 0.00                                       |                 |
| 3.5                                                                                        | -2.50                                | 5.66                                                              | 0.00                               | 0.00                                                                                                                                                                                             | 0.00                | 0.00                                       |                 |
| 4                                                                                          | -2.25                                | 4.76                                                              | 0.00                               | 0.00                                                                                                                                                                                             | 0.00                | 0.00                                       |                 |
| 5                                                                                          | -2.00                                | 4.00                                                              | 0.00                               | 0.00                                                                                                                                                                                             | 0.00                | 0.00                                       |                 |
| 7                                                                                          | -1.50                                | 2.83                                                              | 0.00                               | 0.00                                                                                                                                                                                             | 0.00                | 0.00                                       |                 |
| 10                                                                                         | -1.00                                | 2.00                                                              | 0.00                               | 0.00                                                                                                                                                                                             | 0.00                | 0.00                                       |                 |
| 14                                                                                         | -0.50                                | 1.41                                                              | 0.00                               | 0.00                                                                                                                                                                                             | 0.00                | 0.00                                       |                 |
| 18                                                                                         | 0.00                                 | 1.00                                                              | 0.00                               | 0.00                                                                                                                                                                                             | 0.00                | 0.00                                       |                 |
| 25                                                                                         | 0.50                                 | 0.71                                                              | 0.03                               | 0.03                                                                                                                                                                                             | 0.03                | 0.03                                       |                 |
| 35                                                                                         | 1.00                                 | 0.50                                                              | 0.07                               | 0.07                                                                                                                                                                                             | 0.10                | 0.10                                       |                 |
| 45                                                                                         | 1.50                                 | 0.35                                                              | 6.51                               | 6.88                                                                                                                                                                                             | 6.61                | 6.98                                       |                 |
| 60                                                                                         | 2.00                                 | 0.25                                                              | 37.98                              | 40.11                                                                                                                                                                                            | 44.59               | 47.09                                      |                 |
| 80                                                                                         | 2.50                                 | 0.18                                                              | 15.03                              | 15.87                                                                                                                                                                                            | 59.62               | 62.96                                      |                 |
| 120                                                                                        | 3.00                                 | 0.13                                                              | 12.29                              | 12.98                                                                                                                                                                                            | 71.91               | 75.94                                      |                 |
| 170                                                                                        | 3.50                                 | 0.09                                                              | 7.25                               | 7.66                                                                                                                                                                                             | 79.16               | 83.60                                      |                 |
| 200                                                                                        | 3.75                                 | 0.07                                                              | 2.25                               | 2.38                                                                                                                                                                                             | 81.41               | 85.98                                      |                 |
| 230                                                                                        | 4.00                                 | 0.06                                                              | 1.79                               | 1.89                                                                                                                                                                                             | 83.20               | 87.87                                      |                 |
|                                                                                            |                                      |                                                                   |                                    |                                                                                                                                                                                                  |                     |                                            |                 |
| Phi 5                                                                                      | Phi 16                               | Phi 25                                                            | Phi 50                             | Phi 75                                                                                                                                                                                           | Phi 84              | Phi 95                                     |                 |
|                                                                                            | 3.54                                 | 2.96                                                              | 2.09                               | 1.72                                                                                                                                                                                             | 1.61                | 1.36                                       |                 |
| Moment                                                                                     | Mean Phi                             | Mean mm                                                           | Sorting                            | Skewness                                                                                                                                                                                         | Kurtosis            |                                            |                 |
| Statistics                                                                                 | 2.17                                 | 0.22                                                              | 0.65                               | 0.81                                                                                                                                                                                             | 2.88                |                                            |                 |

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| <div>Granularmetric Report</div> <div>Depths and elevations based on measured values</div> |                               |                                                                  |                             | <div><br/>APTIM<br/>2481 NW Boca Raton Blvd.<br/>Boca Raton, FL 33431<br/>ph (561) 391-8102</div> |                     |                                     |                 |
| Project Name: McFaddin NWR Beach Ridge Restoration                                         |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Sample Name: JCVC-18-37 #4                                                                 |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Analysis Date: 07-19-18                                                                    |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Analyzed By: SMT                                                                           |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Easting (ft):<br><br>3,478,837                                                             |                               | Northing (ft):<br><br>13,789,147                                 |                             | Coordinate System:<br><br>Texas South Central                                                                                                                                        |                     | Elevation (ft):<br><br>-30.6 NAVD88 |                 |
| USCS:<br><br>SP                                                                            |                               | Munsell:   Wet - 2.5Y-4/2<br>Dry - 2.5Y-6/2<br>Washed - 2.5Y-7/2 |                             | Comments:                                                                                                                                                                            |                     |                                     |                 |
| Dry Weight (g):<br><br>88.38                                                               | Wash Weight (g):<br><br>85.77 | Pan Retained (g):<br><br>0.43                                    | Sieve Loss (%):<br><br>0.17 | Fines (%):<br>#200 - 4.44<br>#230 - 3.60                                                                                                                                             | Organics (%):       | Carbonates (%):                     | Shell Hash (%): |
| Sieve Number                                                                               | Sieve Size (Phi)              | Sieve Size (Millimeters)                                         | Grams Retained              | % Weight Retained                                                                                                                                                                    | Cum. Grams Retained | C. % Weight Retained                |                 |
| 3/4"                                                                                       | -4.25                         | 19.03                                                            | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5/8"                                                                                       | -4.00                         | 16.00                                                            | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 7/16"                                                                                      | -3.50                         | 11.31                                                            | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5/16"                                                                                      | -3.00                         | 8.00                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 3.5                                                                                        | -2.50                         | 5.66                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 4                                                                                          | -2.25                         | 4.76                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5                                                                                          | -2.00                         | 4.00                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 7                                                                                          | -1.50                         | 2.83                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 10                                                                                         | -1.00                         | 2.00                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 14                                                                                         | -0.50                         | 1.41                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 18                                                                                         | 0.00                          | 1.00                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 25                                                                                         | 0.50                          | 0.71                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 35                                                                                         | 1.00                          | 0.50                                                             | 0.09                        | 0.10                                                                                                                                                                                 | 0.09                | 0.10                                |                 |
| 45                                                                                         | 1.50                          | 0.35                                                             | 10.93                       | 12.37                                                                                                                                                                                | 11.02               | 12.47                               |                 |
| 60                                                                                         | 2.00                          | 0.25                                                             | 29.90                       | 33.83                                                                                                                                                                                | 40.92               | 46.30                               |                 |
| 80                                                                                         | 2.50                          | 0.18                                                             | 12.78                       | 14.46                                                                                                                                                                                | 53.70               | 60.76                               |                 |
| 120                                                                                        | 3.00                          | 0.13                                                             | 19.36                       | 21.91                                                                                                                                                                                | 73.06               | 82.67                               |                 |
| 170                                                                                        | 3.50                          | 0.09                                                             | 9.59                        | 10.85                                                                                                                                                                                | 82.65               | 93.52                               |                 |
| 200                                                                                        | 3.75                          | 0.07                                                             | 1.80                        | 2.04                                                                                                                                                                                 | 84.45               | 95.56                               |                 |
| 230                                                                                        | 4.00                          | 0.06                                                             | 0.74                        | 0.84                                                                                                                                                                                 | 85.19               | 96.40                               |                 |
|                                                                                            |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Phi 5                                                                                      | Phi 16                        | Phi 25                                                           | Phi 50                      | Phi 75                                                                                                                                                                               | Phi 84              | Phi 95                              |                 |
| 3.68                                                                                       | 3.06                          | 2.82                                                             | 2.13                        | 1.69                                                                                                                                                                                 | 1.55                | 1.20                                |                 |
| Moment                                                                                     | Mean Phi                      | Mean mm                                                          | Sorting                     | Skewness                                                                                                                                                                             | Kurtosis            |                                     |                 |
| Statistics                                                                                 | 2.21                          | 0.22                                                             | 0.67                        | 0.35                                                                                                                                                                                 | 2.13                |                                     |                 |

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| <div>Granularmetric Report</div> <div>Depths and elevations based on measured values</div> |                               |                                                                |                             | <div><br/>APTIM<br/>2481 NW Boca Raton Blvd.<br/>Boca Raton, FL 33431<br/>ph (561) 391-8102</div> |                     |                                     |                 |
| Project Name: McFaddin NWR Beach Ridge Restoration                                         |                               |                                                                |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Sample Name: JCVC-18-37 #5                                                                 |                               |                                                                |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Analysis Date: 07-19-18                                                                    |                               |                                                                |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Analyzed By: KB                                                                            |                               |                                                                |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Easting (ft):<br><br>3,478,837                                                             |                               | Northing (ft):<br><br>13,789,147                               |                             | Coordinate System:<br><br>Texas South Central                                                                                                                                        |                     | Elevation (ft):<br><br>-32.7 NAVD88 |                 |
| USCS:<br><br>SP                                                                            |                               | Munsell: Wet - 2.5Y-4/3<br>Dry - 2.5Y-6/3<br>Washed - 2.5Y-7/3 |                             | Comments:                                                                                                                                                                            |                     |                                     |                 |
| Dry Weight (g):<br><br>90.02                                                               | Wash Weight (g):<br><br>87.17 | Pan Retained (g):<br><br>0.52                                  | Sieve Loss (%):<br><br>0.02 | Fines (%):<br>#200 - 4.81<br>#230 - 3.78                                                                                                                                             | Organics (%):       | Carbonates (%):                     | Shell Hash (%): |
| Sieve Number                                                                               | Sieve Size (Phi)              | Sieve Size (Millimeters)                                       | Grams Retained              | % Weight Retained                                                                                                                                                                    | Cum. Grams Retained | C. % Weight Retained                |                 |
| 3/4"                                                                                       | -4.25                         | 19.03                                                          | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5/8"                                                                                       | -4.00                         | 16.00                                                          | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 7/16"                                                                                      | -3.50                         | 11.31                                                          | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5/16"                                                                                      | -3.00                         | 8.00                                                           | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 3.5                                                                                        | -2.50                         | 5.66                                                           | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 4                                                                                          | -2.25                         | 4.76                                                           | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5                                                                                          | -2.00                         | 4.00                                                           | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 7                                                                                          | -1.50                         | 2.83                                                           | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 10                                                                                         | -1.00                         | 2.00                                                           | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 14                                                                                         | -0.50                         | 1.41                                                           | 0.01                        | 0.01                                                                                                                                                                                 | 0.01                | 0.01                                |                 |
| 18                                                                                         | 0.00                          | 1.00                                                           | 0.00                        | 0.00                                                                                                                                                                                 | 0.01                | 0.01                                |                 |
| 25                                                                                         | 0.50                          | 0.71                                                           | 0.01                        | 0.01                                                                                                                                                                                 | 0.02                | 0.02                                |                 |
| 35                                                                                         | 1.00                          | 0.50                                                           | 0.21                        | 0.23                                                                                                                                                                                 | 0.23                | 0.25                                |                 |
| 45                                                                                         | 1.50                          | 0.35                                                           | 28.23                       | 31.36                                                                                                                                                                                | 28.46               | 31.61                               |                 |
| 60                                                                                         | 2.00                          | 0.25                                                           | 33.39                       | 37.09                                                                                                                                                                                | 61.85               | 68.70                               |                 |
| 80                                                                                         | 2.50                          | 0.18                                                           | 8.25                        | 9.16                                                                                                                                                                                 | 70.10               | 77.86                               |                 |
| 120                                                                                        | 3.00                          | 0.13                                                           | 6.93                        | 7.70                                                                                                                                                                                 | 77.03               | 85.56                               |                 |
| 170                                                                                        | 3.50                          | 0.09                                                           | 7.47                        | 8.30                                                                                                                                                                                 | 84.50               | 93.86                               |                 |
| 200                                                                                        | 3.75                          | 0.07                                                           | 1.20                        | 1.33                                                                                                                                                                                 | 85.70               | 95.19                               |                 |
| 230                                                                                        | 4.00                          | 0.06                                                           | 0.93                        | 1.03                                                                                                                                                                                 | 86.63               | 96.22                               |                 |
|                                                                                            |                               |                                                                |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Phi 5                                                                                      | Phi 16                        | Phi 25                                                         | Phi 50                      | Phi 75                                                                                                                                                                               | Phi 84              | Phi 95                              |                 |
| 3.71                                                                                       | 2.90                          | 2.34                                                           | 1.75                        | 1.39                                                                                                                                                                                 | 1.25                | 1.08                                |                 |
| Moment                                                                                     | Mean Phi                      | Mean mm                                                        | Sorting                     | Skewness                                                                                                                                                                             | Kurtosis            |                                     |                 |
| Statistics                                                                                 | 1.89                          | 0.27                                                           | 0.68                        | 1.08                                                                                                                                                                                 | 3.29                |                                     |                 |



|                                                                                            |                               |                                                                |                             |                                                                                                                                                                                      |                     |                                     |                 |
|--------------------------------------------------------------------------------------------|-------------------------------|----------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------------------|-----------------|
| <div>Granularmetric Report</div> <div>Depths and elevations based on measured values</div> |                               |                                                                |                             | <div><br/>APTIM<br/>2481 NW Boca Raton Blvd.<br/>Boca Raton, FL 33431<br/>ph (561) 391-8102</div> |                     |                                     |                 |
| Project Name: McFaddin NWR Beach Ridge Restoration                                         |                               |                                                                |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Sample Name: JCVC-18-37 #6                                                                 |                               |                                                                |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Analysis Date: 07-19-18                                                                    |                               |                                                                |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Analyzed By: HMV                                                                           |                               |                                                                |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Easting (ft):<br><br>3,478,837                                                             |                               | Northing (ft):<br><br>13,789,147                               |                             | Coordinate System:<br><br>Texas South Central                                                                                                                                        |                     | Elevation (ft):<br><br>-35.9 NAVD88 |                 |
| USCS:<br><br>SC                                                                            |                               | Munsell: Wet - 2.5Y-3/2<br>Dry - 2.5Y-6/1<br>Washed - 2.5Y-6/1 |                             | Comments:                                                                                                                                                                            |                     |                                     |                 |
| Dry Weight (g):<br><br>81.60                                                               | Wash Weight (g):<br><br>48.15 | Pan Retained (g):<br><br>0.90                                  | Sieve Loss (%):<br><br>0.12 | Fines (%):<br>#200 - 44.06<br>#230 - 42.23                                                                                                                                           | Organics (%):       | Carbonates (%):                     | Shell Hash (%): |
| Sieve Number                                                                               | Sieve Size (Phi)              | Sieve Size (Millimeters)                                       | Grams Retained              | % Weight Retained                                                                                                                                                                    | Cum. Grams Retained | C. % Weight Retained                |                 |
| 3/4"                                                                                       | -4.25                         | 19.03                                                          | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5/8"                                                                                       | -4.00                         | 16.00                                                          | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 7/16"                                                                                      | -3.50                         | 11.31                                                          | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5/16"                                                                                      | -3.00                         | 8.00                                                           | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 3.5                                                                                        | -2.50                         | 5.66                                                           | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 4                                                                                          | -2.25                         | 4.76                                                           | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5                                                                                          | -2.00                         | 4.00                                                           | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 7                                                                                          | -1.50                         | 2.83                                                           | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 10                                                                                         | -1.00                         | 2.00                                                           | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 14                                                                                         | -0.50                         | 1.41                                                           | 0.02                        | 0.02                                                                                                                                                                                 | 0.02                | 0.02                                |                 |
| 18                                                                                         | 0.00                          | 1.00                                                           | 0.02                        | 0.02                                                                                                                                                                                 | 0.04                | 0.04                                |                 |
| 25                                                                                         | 0.50                          | 0.71                                                           | 0.07                        | 0.09                                                                                                                                                                                 | 0.11                | 0.13                                |                 |
| 35                                                                                         | 1.00                          | 0.50                                                           | 0.13                        | 0.16                                                                                                                                                                                 | 0.24                | 0.29                                |                 |
| 45                                                                                         | 1.50                          | 0.35                                                           | 2.40                        | 2.94                                                                                                                                                                                 | 2.64                | 3.23                                |                 |
| 60                                                                                         | 2.00                          | 0.25                                                           | 8.89                        | 10.89                                                                                                                                                                                | 11.53               | 14.12                               |                 |
| 80                                                                                         | 2.50                          | 0.18                                                           | 12.58                       | 15.42                                                                                                                                                                                | 24.11               | 29.54                               |                 |
| 120                                                                                        | 3.00                          | 0.13                                                           | 10.62                       | 13.01                                                                                                                                                                                | 34.73               | 42.55                               |                 |
| 170                                                                                        | 3.50                          | 0.09                                                           | 7.86                        | 9.63                                                                                                                                                                                 | 42.59               | 52.18                               |                 |
| 200                                                                                        | 3.75                          | 0.07                                                           | 3.07                        | 3.76                                                                                                                                                                                 | 45.66               | 55.94                               |                 |
| 230                                                                                        | 4.00                          | 0.06                                                           | 1.49                        | 1.83                                                                                                                                                                                 | 47.15               | 57.77                               |                 |
|                                                                                            |                               |                                                                |                             |                                                                                                                                                                                      |                     |                                     |                 |
|                                                                                            |                               |                                                                |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Phi 5                                                                                      | Phi 16                        | Phi 25                                                         | Phi 50                      | Phi 75                                                                                                                                                                               | Phi 84              | Phi 95                              |                 |
|                                                                                            |                               |                                                                | 3.39                        | 2.35                                                                                                                                                                                 | 2.06                | 1.58                                |                 |
| Moment                                                                                     | Mean Phi                      | Mean mm                                                        | Sorting                     | Skewness                                                                                                                                                                             | Kurtosis            |                                     |                 |
| Statistics                                                                                 | 2.52                          | 0.17                                                           | 0.69                        | -0.04                                                                                                                                                                                | 2.61                |                                     |                 |

|                                                                                            |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
|--------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------------------|-----------------|
| <div>Granularmetric Report</div> <div>Depths and elevations based on measured values</div> |                               |                                                                  |                             | <div><br/>APTIM<br/>2481 NW Boca Raton Blvd.<br/>Boca Raton, FL 33431<br/>ph (561) 391-8102</div> |                     |                                     |                 |
| Project Name: McFaddin NWR Beach Ridge Restoration                                         |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Sample Name: JCVC-18-37 #7                                                                 |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Analysis Date: 07-19-18                                                                    |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Analyzed By: KB                                                                            |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Easting (ft):<br><br>3,478,837                                                             |                               | Northing (ft):<br><br>13,789,147                                 |                             | Coordinate System:<br><br>Texas South Central                                                                                                                                        |                     | Elevation (ft):<br><br>-37.2 NAVD88 |                 |
| USCS:<br><br>SP                                                                            |                               | Munsell:   Wet - 2.5Y-4/1<br>Dry - 2.5Y-5/1<br>Washed - 2.5Y-6/1 |                             | Comments:                                                                                                                                                                            |                     |                                     |                 |
| Dry Weight (g):<br><br>94.47                                                               | Wash Weight (g):<br><br>90.64 | Pan Retained (g):<br><br>0.09                                    | Sieve Loss (%):<br><br>0.04 | Fines (%):<br>#200 - 4.43<br>#230 - 4.19                                                                                                                                             | Organics (%):       | Carbonates (%):                     | Shell Hash (%): |
| Sieve Number                                                                               | Sieve Size (Phi)              | Sieve Size (Millimeters)                                         | Grams Retained              | % Weight Retained                                                                                                                                                                    | Cum. Grams Retained | C. % Weight Retained                |                 |
| 3/4"                                                                                       | -4.25                         | 19.03                                                            | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5/8"                                                                                       | -4.00                         | 16.00                                                            | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 7/16"                                                                                      | -3.50                         | 11.31                                                            | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5/16"                                                                                      | -3.00                         | 8.00                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 3.5                                                                                        | -2.50                         | 5.66                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 4                                                                                          | -2.25                         | 4.76                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 5                                                                                          | -2.00                         | 4.00                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 7                                                                                          | -1.50                         | 2.83                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 10                                                                                         | -1.00                         | 2.00                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 14                                                                                         | -0.50                         | 1.41                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 18                                                                                         | 0.00                          | 1.00                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 25                                                                                         | 0.50                          | 0.71                                                             | 0.00                        | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                |                 |
| 35                                                                                         | 1.00                          | 0.50                                                             | 0.03                        | 0.03                                                                                                                                                                                 | 0.03                | 0.03                                |                 |
| 45                                                                                         | 1.50                          | 0.35                                                             | 2.34                        | 2.48                                                                                                                                                                                 | 2.37                | 2.51                                |                 |
| 60                                                                                         | 2.00                          | 0.25                                                             | 56.50                       | 59.81                                                                                                                                                                                | 58.87               | 62.32                               |                 |
| 80                                                                                         | 2.50                          | 0.18                                                             | 28.03                       | 29.67                                                                                                                                                                                | 86.90               | 91.99                               |                 |
| 120                                                                                        | 3.00                          | 0.13                                                             | 2.14                        | 2.27                                                                                                                                                                                 | 89.04               | 94.26                               |                 |
| 170                                                                                        | 3.50                          | 0.09                                                             | 1.10                        | 1.16                                                                                                                                                                                 | 90.14               | 95.42                               |                 |
| 200                                                                                        | 3.75                          | 0.07                                                             | 0.14                        | 0.15                                                                                                                                                                                 | 90.28               | 95.57                               |                 |
| 230                                                                                        | 4.00                          | 0.06                                                             | 0.23                        | 0.24                                                                                                                                                                                 | 90.51               | 95.81                               |                 |
|                                                                                            |                               |                                                                  |                             |                                                                                                                                                                                      |                     |                                     |                 |
| Phi 5                                                                                      | Phi 16                        | Phi 25                                                           | Phi 50                      | Phi 75                                                                                                                                                                               | Phi 84              | Phi 95                              |                 |
| 3.32                                                                                       | 2.37                          | 2.21                                                             | 1.90                        | 1.69                                                                                                                                                                                 | 1.61                | 1.52                                |                 |
| Moment                                                                                     | Mean Phi                      | Mean mm                                                          | Sorting                     | Skewness                                                                                                                                                                             | Kurtosis            |                                     |                 |
| Statistics                                                                                 | 1.94                          | 0.26                                                             | 0.34                        | 1.56                                                                                                                                                                                 | 7.8                 |                                     |                 |

|                                                                                            |                                      |                                                                   |                                    |                                                                                                                                                                                      |                     |                                            |                 |
|--------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------|-----------------|
| <div>Granularmetric Report</div> <div>Depths and elevations based on measured values</div> |                                      |                                                                   |                                    | <div><br/>APTIM<br/>2481 NW Boca Raton Blvd.<br/>Boca Raton, FL 33431<br/>ph (561) 391-8102</div> |                     |                                            |                 |
| Project Name: McFaddin NWR Beach Ridge Restoration                                         |                                      |                                                                   |                                    |                                                                                                                                                                                      |                     |                                            |                 |
| Sample Name: JCVC-18-37 #8                                                                 |                                      |                                                                   |                                    |                                                                                                                                                                                      |                     |                                            |                 |
| Analysis Date: 07-19-18                                                                    |                                      |                                                                   |                                    |                                                                                                                                                                                      |                     |                                            |                 |
| Analyzed By: HMV                                                                           |                                      |                                                                   |                                    |                                                                                                                                                                                      |                     |                                            |                 |
| Easting (ft):<br><div>3,478,837</div>                                                      |                                      | Northing (ft):<br><div>13,789,147</div>                           |                                    | Coordinate System:<br><div>Texas South Central</div>                                                                                                                                 |                     | Elevation (ft):<br><div>-38.3 NAVD88</div> |                 |
| USCS:<br><div>SC</div>                                                                     |                                      | Munsell:<br>Wet - 2.5Y-4/1<br>Dry - 2.5Y-6/1<br>Washed - 2.5Y-6/1 |                                    | Comments:                                                                                                                                                                            |                     |                                            |                 |
| Dry Weight (g):<br><div>85.17</div>                                                        | Wash Weight (g):<br><div>72.18</div> | Pan Retained (g):<br><div>0.77</div>                              | Sieve Loss (%):<br><div>0.04</div> | Fines (%):<br>#200 - 17.80<br>#230 - 16.20                                                                                                                                           | Organics (%):       | Carbonates (%):                            | Shell Hash (%): |
| Sieve Number                                                                               | Sieve Size (Phi)                     | Sieve Size (Millimeters)                                          | Grams Retained                     | % Weight Retained                                                                                                                                                                    | Cum. Grams Retained | C. % Weight Retained                       |                 |
| 3/4"                                                                                       | -4.25                                | 19.03                                                             | 0.00                               | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                       |                 |
| 5/8"                                                                                       | -4.00                                | 16.00                                                             | 0.00                               | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                       |                 |
| 7/16"                                                                                      | -3.50                                | 11.31                                                             | 0.00                               | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                       |                 |
| 5/16"                                                                                      | -3.00                                | 8.00                                                              | 0.00                               | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                       |                 |
| 3.5                                                                                        | -2.50                                | 5.66                                                              | 0.00                               | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                       |                 |
| 4                                                                                          | -2.25                                | 4.76                                                              | 0.00                               | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                       |                 |
| 5                                                                                          | -2.00                                | 4.00                                                              | 0.00                               | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                       |                 |
| 7                                                                                          | -1.50                                | 2.83                                                              | 0.00                               | 0.00                                                                                                                                                                                 | 0.00                | 0.00                                       |                 |
| 10                                                                                         | -1.00                                | 2.00                                                              | 0.01                               | 0.01                                                                                                                                                                                 | 0.01                | 0.01                                       |                 |
| 14                                                                                         | -0.50                                | 1.41                                                              | 0.00                               | 0.00                                                                                                                                                                                 | 0.01                | 0.01                                       |                 |
| 18                                                                                         | 0.00                                 | 1.00                                                              | 0.01                               | 0.01                                                                                                                                                                                 | 0.02                | 0.02                                       |                 |
| 25                                                                                         | 0.50                                 | 0.71                                                              | 0.02                               | 0.02                                                                                                                                                                                 | 0.04                | 0.04                                       |                 |
| 35                                                                                         | 1.00                                 | 0.50                                                              | 0.03                               | 0.04                                                                                                                                                                                 | 0.07                | 0.08                                       |                 |
| 45                                                                                         | 1.50                                 | 0.35                                                              | 0.42                               | 0.49                                                                                                                                                                                 | 0.49                | 0.57                                       |                 |
| 60                                                                                         | 2.00                                 | 0.25                                                              | 18.93                              | 22.23                                                                                                                                                                                | 19.42               | 22.80                                      |                 |
| 80                                                                                         | 2.50                                 | 0.18                                                              | 33.09                              | 38.85                                                                                                                                                                                | 52.51               | 61.65                                      |                 |
| 120                                                                                        | 3.00                                 | 0.13                                                              | 11.50                              | 13.50                                                                                                                                                                                | 64.01               | 75.15                                      |                 |
| 170                                                                                        | 3.50                                 | 0.09                                                              | 5.12                               | 6.01                                                                                                                                                                                 | 69.13               | 81.16                                      |                 |
| 200                                                                                        | 3.75                                 | 0.07                                                              | 0.89                               | 1.04                                                                                                                                                                                 | 70.02               | 82.20                                      |                 |
| 230                                                                                        | 4.00                                 | 0.06                                                              | 1.36                               | 1.60                                                                                                                                                                                 | 71.38               | 83.80                                      |                 |
|                                                                                            |                                      |                                                                   |                                    |                                                                                                                                                                                      |                     |                                            |                 |
| Phi 5                                                                                      | Phi 16                               | Phi 25                                                            | Phi 50                             | Phi 75                                                                                                                                                                               | Phi 84              | Phi 95                                     |                 |
|                                                                                            |                                      | 2.99                                                              | 2.35                               | 2.03                                                                                                                                                                                 | 1.85                | 1.60                                       |                 |
| Moment                                                                                     | Mean Phi                             | Mean mm                                                           | Sorting                            | Skewness                                                                                                                                                                             | Kurtosis            |                                            |                 |
| Statistics                                                                                 | 2.31                                 | 0.20                                                              | 0.51                               | 0.82                                                                                                                                                                                 | 4.22                |                                            |                 |

MCFADDIN\_2018\_VC.GPJ 8/14/18



MCFADDIN NWR BEACH  
RIDGE RESTORATION  
PHASE II  
JCVC-18-37  
0.0' - 2.0'



MCFADDIN NWR BEACH  
RIDGE RESTORATION  
PHASE II  
JCVC-18-37  
2.0' - 4.0'



MCFADDIN NWR BEACH  
RIDGE RESTORATION  
PHASE II  
JCVC-18-37  
4.0' - 6.0'



MCFADDIN NWR BEACH  
RIDGE RESTORATION  
PHASE II  
JCVC-18-37  
6.0' - 8.0'





MCFADDIN NWR BEACH  
RIDGE RESTORATION  
PHASE II  
JCVC-18-37  
8.0'-10.0'



MCFADDIN NWR BEACH  
RIDGE RESTORATION  
PHASE II  
JCVC-18-37  
10.0'-12.0'



MCFADDIN NWR BEACH  
RIDGE RESTORATION  
PHASE II  
JCVC-18-37  
12.0'-14.0'



MCFADDIN NWR BEACH  
RIDGE RESTORATION  
PHASE II  
JCVC-18-37  
14.0'-16.0'







MCFADDIN NWR BEACH  
RIDGE RESTORATION  
PHASE II  
JCVC-18-37  
16.0'-16.3'

