Massachusetts Water Resources Authority

Mechanical Improvements
Biosolids Processing Facility
Contract 7153

June 20, 2018
• Construction completed in 1991
• Operated by New England Fertilizer Company (NEFCo)
• Process an average of 100 Dry Tons Per Day/Total Suspended Solids
Scope: Replace the following:

- Nine of twelve Separator Conveyors
- Two Dust Collection Systems
- Dome Cover Braces (four storage tanks)
- Gas Boiler
- Nitrogen Purge Generator System
- Air Compressor System
Separator Conveyor
Dust Collector System
7153-Scope of Work

Sludge Tank Roof Cover
(braces under roof cover)

Gas Boiler
7153-Scope of Work

Nitrogen Purge Generator
(fire suppression system)

Air Compressor System
Contract 7153 Summary

• Contractor: Daniel O’Connell’s Sons, Inc.

• Contract Price: $2,700,000 (+15% Design/CA fee)

• Contract Duration: 420 days
Remote Headworks and Deer Island Shafts Study
Contract 7237

June 20, 2018
SCOPE OF WORK

- Visual inspection, probing and hammer sounding of 7 shafts and 3 connecting structures and effluent channels
- Concrete cores taken from 7 shafts for lab testing
- Ventilation evaluation
- Corrosivity analysis
- Measurement of actual shaft diameters
Ward Street, Columbus Park and Chelsea Creek Headworks

Section shown - Chelsea Creek HW (Ward Street and Columbus Park similar)

<table>
<thead>
<tr>
<th>Location</th>
<th>Total Depth of Shaft</th>
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</thead>
<tbody>
<tr>
<td>Ward Street - Shaft “A”</td>
<td>312’</td>
</tr>
<tr>
<td>Columbus Park - Shaft “B”</td>
<td>318’</td>
</tr>
<tr>
<td>Chelsea Creek - Shaft No. 2</td>
<td>295’</td>
</tr>
</tbody>
</table>
Doorway from Connecting Structure into Shaft at Chelsea Creek Headworks
Deteriorated Concrete in Shaft at Chelsea Creek Headworks
Ward Street, Columbus Park and Chelsea Creek Headworks

Top of Effluent Shaft at Columbus Park Headworks
Nut Island Headworks Shaft

South System Shaft at Nut Island Headworks
Two proposals were received on May 21, 2018

<table>
<thead>
<tr>
<th>Company</th>
<th>Amount</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Arcadis U.S., Inc.</td>
<td>$1,194,580</td>
<td>2,334 hours</td>
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<tr>
<td>Mott MacDonald, LLC</td>
<td>$1,371,788</td>
<td>4,856 hours</td>
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<tr>
<td>Engineer’s Estimate</td>
<td>$802,010</td>
<td>3,878 hours</td>
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- Contract Start: July 2018
- Duration: 10 Months
Chelsea Creek Headworks Upgrade
Contract 7161 - Change Order 14

June 20, 2018
Chelsea Creek Headworks: Exterior Walls As Found
Chelsea Creek Headworks: Masonry Repairs
Chelsea Creek Headworks: Masonry Repairs
Chelsea Creek Headworks: New 480V Electrical Service
Marlborough Maintenance Facility
Contract 6650B, Change Order 10

June 20, 2018
Silo Ash Silos – Converted to Covered Storage

Soda Ash Storage

Covered Storage
CO2 Room – Converted to Plumbing Shop
Fluoride Room Converted to SCADA Room
Portion of Pump Room Converted to Mechanical Shop
Mechanical Equipment Room Updated
Portion of Mechanical Equipment Room Now Break Room
Change Order No. 10 – Concrete Curbing

- Original Design in 2007
- Part of three Projects
- Section of Concrete Curb Deemed to be in Good Condition now in need of replacement
- Deteriorating Condition - Unforeseen
- Cost of $29,346