2016-2017 Sediment Removal Activities

April 2017
GOALS & OBJECTIVES

• Maintain efficient water deliveries to:
  – U.S. Irrigation Districts
  – Municipalities
  – Mexico

• Improve Operations at Diversion Dams

• Increase Flood Control Capability
NO ACTION IMPACTS

• Reduction in Channel Carrying Capacity
  – Reduce water delivery efficiency
  – Create backwater conditions = drainage problems

• River bank instability
  – Bank failure/Lateral migration
    • May impact maintenance roads
    • May impact flood protection levees

• Diversion Dams – Reduction in carrying capacity of irrigation canals with increase sediment loads
CHANNEL MAINTENANCE ACTIVITIES

• Bank Stabilization
  – Using rock riprap and woody vegetation
• Arroyo Sediment Removal
• Arroyo Realignment
• River Channel Sediment Removal
## 2016/17 SEDIMENT REMOVAL SITES

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>VOLUME EXCAVATED (CYs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rincon Siphon</td>
<td>952</td>
</tr>
<tr>
<td>Rincon Arroyo</td>
<td>8,581</td>
</tr>
<tr>
<td>Reed Arroyo</td>
<td>5,945</td>
</tr>
<tr>
<td>Tonuco Drain</td>
<td>15,660</td>
</tr>
<tr>
<td>Horse Canyon</td>
<td>11,508</td>
</tr>
<tr>
<td>Canutillo Bridge</td>
<td>4,616</td>
</tr>
<tr>
<td>American Dam</td>
<td>30,000</td>
</tr>
<tr>
<td>International Dam</td>
<td>20,000</td>
</tr>
<tr>
<td>Fort Quitman</td>
<td>15,000</td>
</tr>
<tr>
<td>Guayuco Arroyo</td>
<td>34,372</td>
</tr>
<tr>
<td><strong>Total to Date</strong></td>
<td><strong>146,634</strong></td>
</tr>
</tbody>
</table>
This year 952 cubic yards of material was removed from this site.
The Rincon Arroyo deposits large amounts of silt on a yearly basis. During the 2015/16 we removed approximately 40,000 cubic yard of material. During the 2016/17 we removed an additional 8,581 cubic yards.
This year 11,500 cubic yards of material was removed from this site.
Last year, approximately 50,000 cy of material was removed from this site. This year we removed 15,660 cy.
CANALIZATION PROJECT

Horse Canyon

This year 11,500 cubic yards of material was removed from this site.
At the Canutillo Bridge we removed an island that was partially blocking the flow under the bridge. We removed approximately 4,600 cubic yards of material at this location.
FIVE YEAR DAM INSPECTIONS

In order to perform the 5 year dam inspections it was necessary to remove all of the silt from the upstream and downstream aprons of the dams.

American Dam 30,000 cy of material was removed

International Dam 20,000 cy of material was removed
Removal of silt at this site was to improve the ability to accurately measure flow at the Fort Quitman gaging station site. Approximately 15,000 cubic yards of material was removed.
RECTIFICATION PROJECT
Guayuco Arroyo

From this site, 34,372 cubic yards have been removed.
PROJECT INITIATED THIS YEAR

Boundary Preservation Project – Arroyo Del Fraile
• Silt removal to clear the blockage is approximate 20,000 cubic yards and silt removal upstream of the blockage is approximate 60,000 cubic yards.

• We have obtained a disposal site for this work from one of the local farmers.
BOUNDARY PRESERVATION PROJECT
Arroyo Los Fraile

Following are various pictures of flooding caused by the plugging of the Arroyo Los Fraile.
RECTIFICATION PROJECT
Little Box Canyon

Following are various pictures of flooding caused by the plugging of Lower portion of the Rectification Project.
DESILTING CAPABILITY
URGFO

• The average amount of silt removed by the URGF personnel the last two seasons was close to 160,000 cubic yards per year.

• According to the Tetra Tech Sediment Transport Study, the amount of silt entering the river in the Canalization Project is 409,000 cubic yards per year.

• This does not include the Rectification Project which probably contributes at least another 200,000 cubic yards per year.
ACCUMULATION OF SILT IN
ONE YEAR

Upstream of Mesilla Dam April 2016

Upstream of Mesilla Dam February 2017
# SEDIMENT DISPOSAL SITES

<table>
<thead>
<tr>
<th>OWNER</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osvaldo Garcia</td>
<td>Arrey, NM.</td>
</tr>
<tr>
<td>Lack Farm</td>
<td>Rincon NM.</td>
</tr>
<tr>
<td>Ted Horner</td>
<td>Horse Canyon NM.</td>
</tr>
<tr>
<td>Sheriff Posee</td>
<td>Sunland Park, NM.</td>
</tr>
<tr>
<td>Wayne Talley</td>
<td>Sierra Blanca, TX</td>
</tr>
<tr>
<td>12 additional sites in process</td>
<td></td>
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</tbody>
</table>
QUESTIONS?