

San Francisco Bay and Delta Sand Mining

BCDC Commission Report
November 2016

Introduction

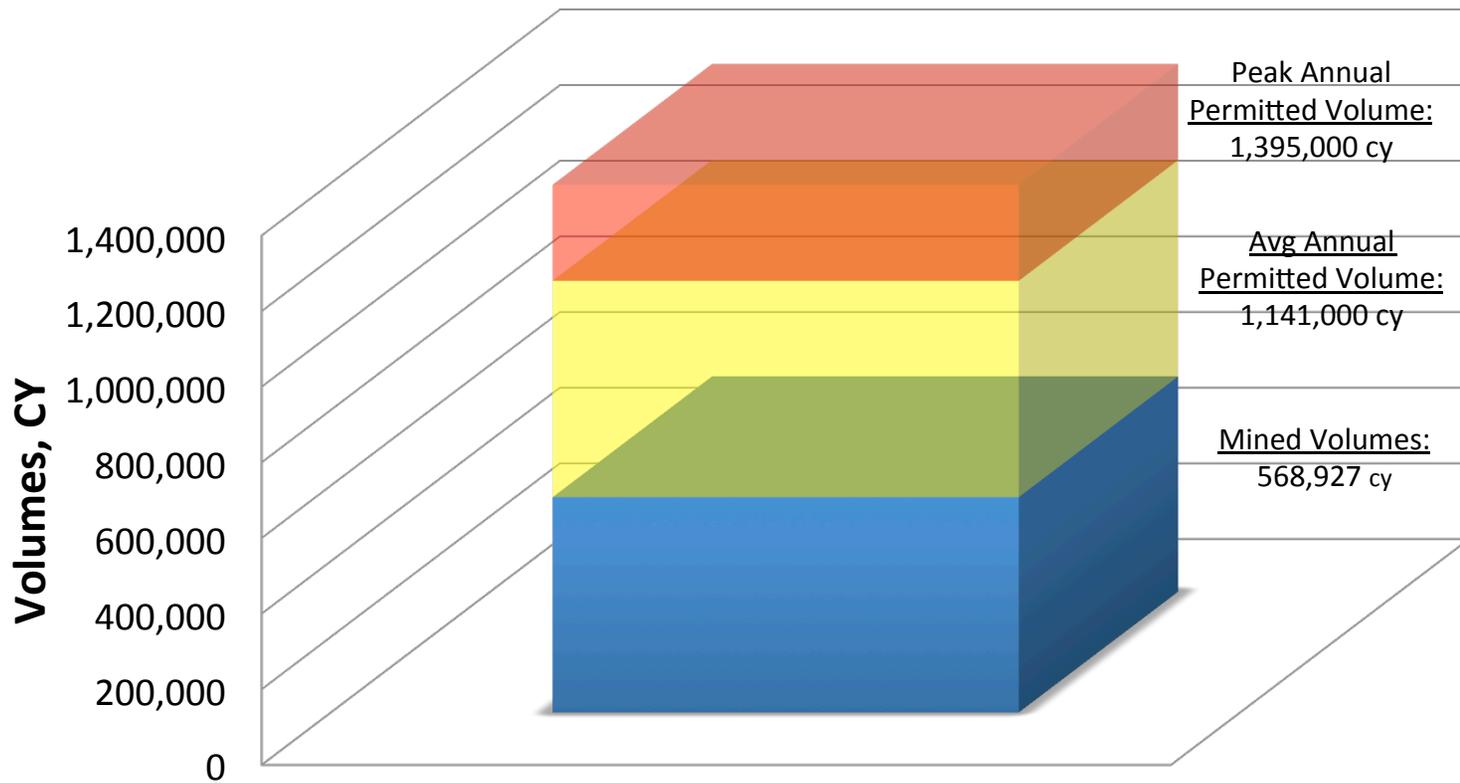
- Hanson Marine Operations
- Lind Marine, Inc.
- As a requirement of the BCDC sand mining permits, Lind Marine and Hanson Marine Operations are providing this update to the Commission:
 - Sand mining volumes
 - Benthic Study
 - Water Quality Study
 - Sediment Transport Study

Permits Received: April 29, 2015

- Hanson Marine Operations
 - BCDC Permit 2013.004.00
- Lind Marine, Incorporated
 - BCDC Permit 2013.003.00
- Suisun Associates
 - Joint Venture between Lind Marine and Hanson Marine Operations
 - BCDC Permit 2013.005.00

Mining Activity Summary

Annual Sand Mining Volumes: October 2015-September 2016
Hanson, Central Bay Leases

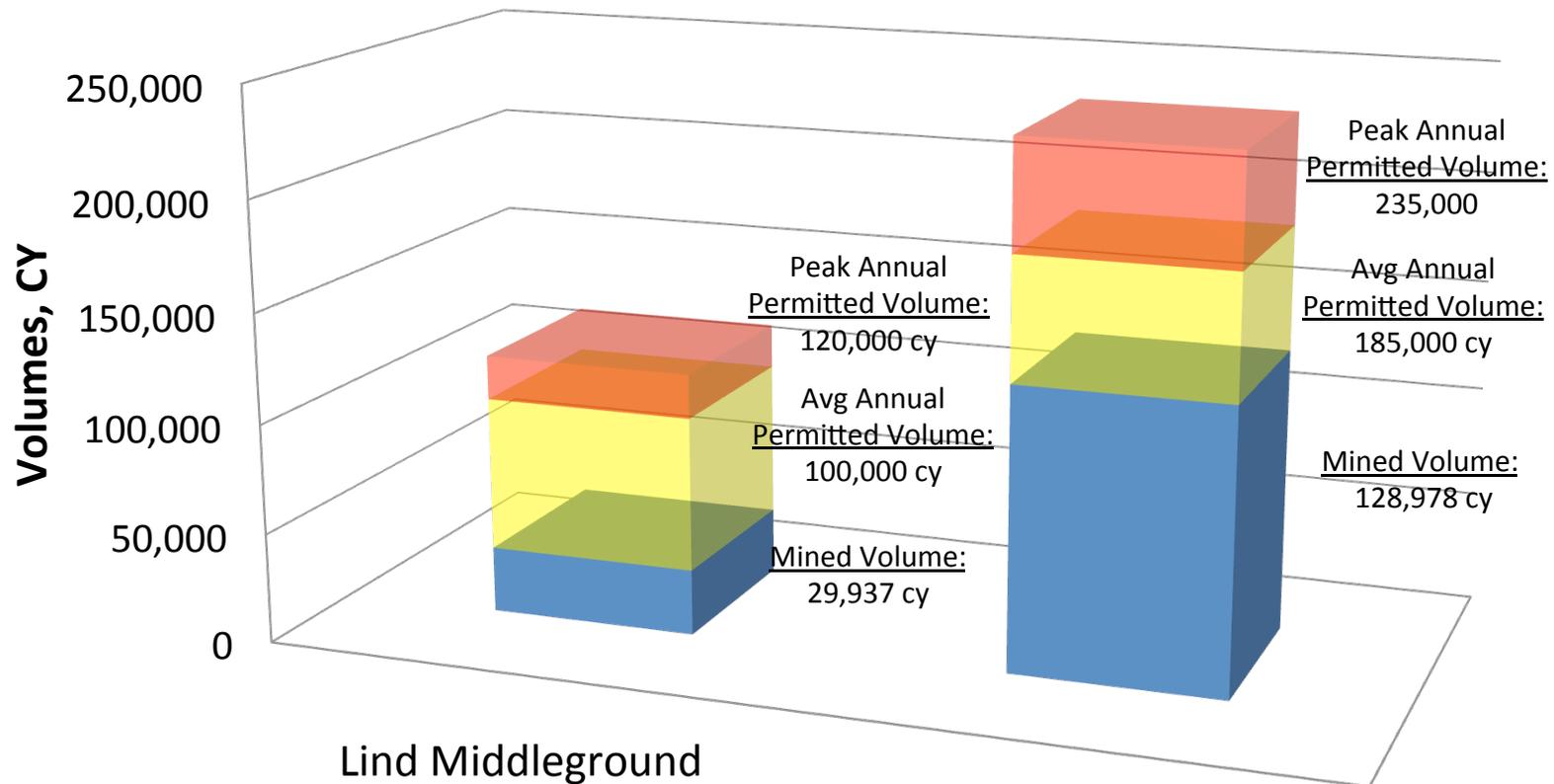


Hanson Central Bay



Mining Activity Summary

Annual Sand Mining Volumes: October 2015-September 2016
Suisun Bay Leases



Lind Middleground

Suisun Associates



Benthic TAC Update

- Benthic Technical Advisory Committee (TAC) Members:
 - SF Bay Conservation and Development Commission
 - California State Lands Commission
 - US Army Corps of Engineers
 - SF Regional Water Quality Control Board
 - National Marine Fisheries Service
 - California Department of Fish and Wildlife
 - US Geological Survey - Biologist Specialist
 - Hanson Marine Operations & Lind Marine

Benthic TAC Update

- The TAC established study questions and parameters, and agreed upon the Study objective:
 - Characterize benthic habitat conditions where sand mining occurred in comparison to control areas.
 - Compare and contrast physical and biological characteristics of benthic habitat and community control and sand mining areas.
 - Assess the potential impacts of sand mining disturbance on habitat conditions and functions.

Benthic TAC Update

- TAC issued a Request for Proposal and conducted in-depth analyses of competitive bids
- Selected NewFields to perform the study
 - Newfields specializes in Oceanographic Investigation and Evaluation, Sediment Profile Imaging, and sediment management
 - Has extensive experience conducting sediment investigations and benthic habitat/community structure characterizations.
 - Has worked extensively in the San Francisco Bay Area

Benthic TAC Update

- Developed and finalized Sampling and Analysis Plan (SAP)
- Before-After Control-Impact (BACI) study design
 - Control sites in Central Bay and Suisun Bay
 - Follow up sampling: 12 months post-disturbance
- Study includes data collection and analyses of the following:
 - Sediment Profile (SPI) and Plan View (PV) Images
 - Grain size
 - Total Organic Carbon (TOC)
 - Benthic Community Data
 - Underwater video images
- Baseline sampling completed in October 2016

Water Quality Study

- Study involved two seasons of sampling
 - August 2015 and April 2016
 - Central Bay, Middle Ground and Suisun Channel
- Collected samples to characterize:
 - Effluent chemistry and toxicity
 - Effluent Plume extent and transport within surface waters
 - Physical and chemical composition of effluent plume (midpoint, downstream and upstream)

Water Quality Study

- Study and analyses has been completed
- Draft report submitted to the SFRWQCB for review (awaiting comments).

- Study conclusion:

“Overall, the monitoring results from both surveys demonstrate that discharges (effluent) from sand mining operations do not adversely impact the water column with regards to chemical concentrations or toxicity, and that any physical effects related to plume turbidity are spatially limited and ephemeral in nature.”

Sediment TAC

- Sediment TAC will be led by BCDC staff
- First stakeholders meeting proposed for December 2016
- Study questions and design approach will be developed by TAC and an Independent Science Panel (ISP)