

Stone Harbor Dredging Status Update and Path Forward

August 2, 2016



Year 1 Dredging Summary

- Phase II sampling was completed November 12, 2015 to characterize the effluent from dredged material dewatering process
- Mobilization began late November 2015
- Dredging began November 30, 2015
- Multiple permit modifications
- Dredging occurred for 30 days total (86 work days available at 6 days per week)
- Total pay dredge volume removed was 14,950 CY (~500 CY per work day)
- 50,804 tons of virgin sand brought to the site (2,137 truck trips one way)
- 73,891 tons of sediment amended with sand taken to Kinsley's landfill and Cape Mining (2,907 truck trips one way)



Year 1 Equipment



Year 1 Equipment







Sevenson

PC
300
LC

54818





Year 2 Approach – Permitting And Treatability

- Sampling plan developed with NJDEP approval
- NJDEP assisted with sample location selection lab tests required
- Severson subcontractor performed sample collection in July in each lagoon for treatability study and amending with portland cement
- Obtain permit modifications to allow mechanical dredging and amending dredge material with portland cement (NJDEP and USACE)
- Waiting on lab results to prove materials are still suitable for disposal



Year 2 Approach – Initial Samples

Lagoon	Core Name	Core/Composite Name	Initial Moisture %	Initial Grainsize	pH	Paint Filter Test with Portland Cement @ 12 Hours		
						3% by Weight	5% by Weight	10% by Weight
South Basin	S-04	Comp S-04/05	X	X	X	X	X	X
	S-05							
	S-05A	S-05A	X	X	X	X	X	X
Snug Harbor	S-06	S-06	X	X	X	X	X	X
	S-07	Comp S-07/08	X	X	X	X	X	X
	S-08							
Shelter Haven	S-09	S-09	X	X	X	X	X	X
Stone Harbor	S-12	S-12	X	X	X	X	X	X
Pleasure Bay	S-14	Comp S-14/15	X	X	X	X	X	X
	S-15							
Carnival Bay	S-17	Comp S-17/17A/18	X	X	X	X	X	X
	S-17A							
	S-18							
Sanctuary bay	S-20	S-20	X	X	X	X	X	X
	S-21	S-21	X	X	X	X	X	X
Paradise Bay	S-22	S-22	X	X	X	X	X	X
	S-23	S-23	X	X	X	X	X	X

Year 2 Approach – With Selected Portland Mixture

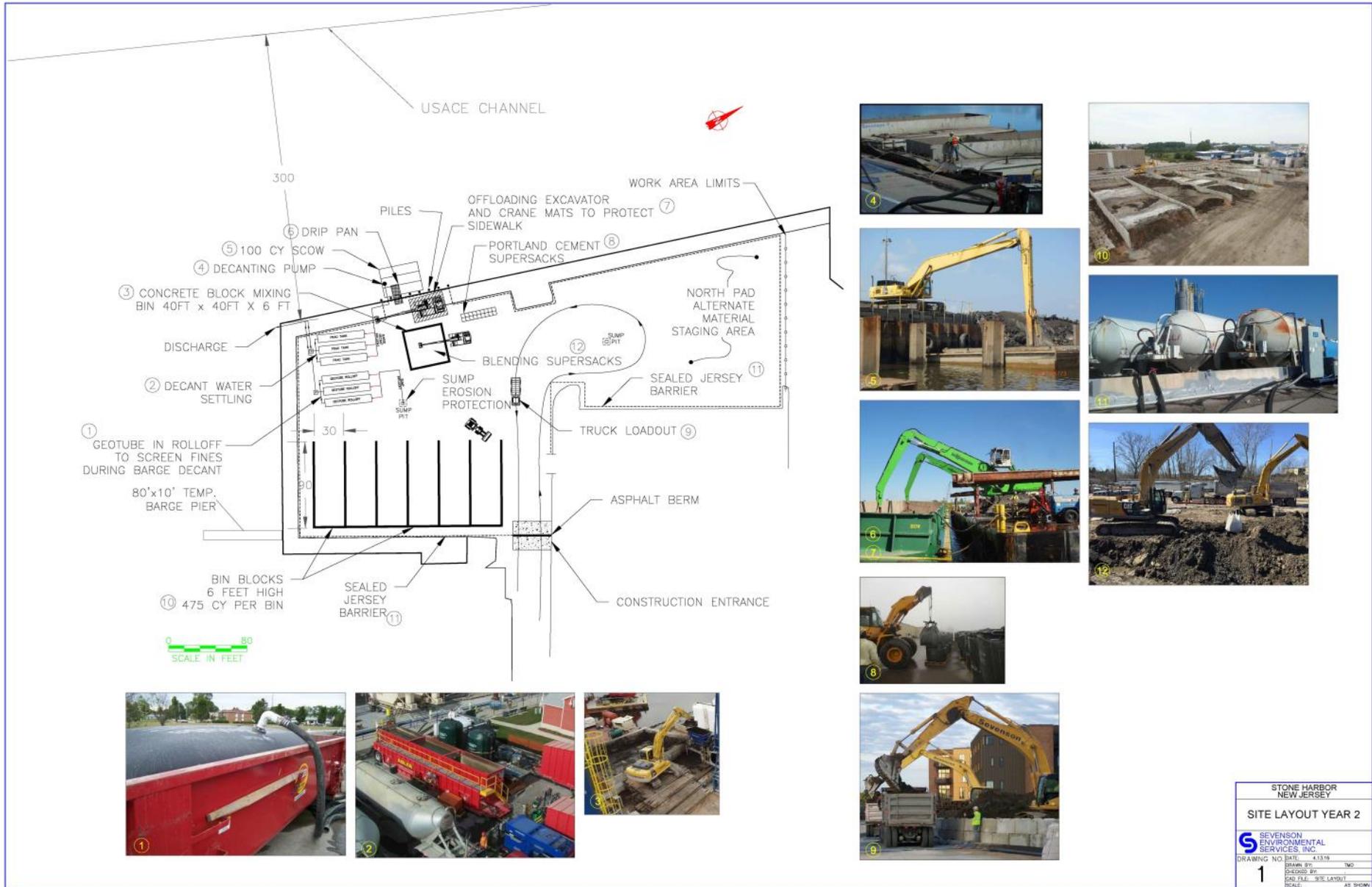
			Selected Mixture with Portland Cement							
Lagoon	Core Name	Core/Composite Name	Moisture %	Metals	pH	PAH's	PCB's	Gradation (ASTM D422)	Standard Proctor (ASTM D698)	Permeability Test (Flexible Wall)
South Basin	S-04	Comp S-04/05	X	X	X	X	X	X	X	X
	S-05									
	S-05A	S-05A	X	X	X	X	X	X	X	X
Snug Harbor	S-06	S-06	X	X	X	X	X	X	X	X
	S-07	Comp S-07/08	X	X	X	X	X	X	X	X
	S-08									
Shelter Haven	S-09	S-09	X	X	X	X	X	X	X	X
Stone Harbor	S-12	S-12	X	X	X	X	X	X	X	X
Pleasure Bay	S-14	Comp S-14/15	X	X	X	X	X	X	X	X
	S-15									
Carnival Bay	S-17	Comp S-17/17A/18	X	X	X	X	X	X	X	X
	S-17A									
	S-18									
Sanctuary bay	S-20	S-20	X	X	X	X	X	X	X	X
	S-21	S-21	X	X	X	X	X	X	X	X
Paradise Bay	S-22	S-22	X	X	X	X	X	X	X	X
	S-23	S-23	X	X	X	X	X	X	X	X

Year 2 Approach

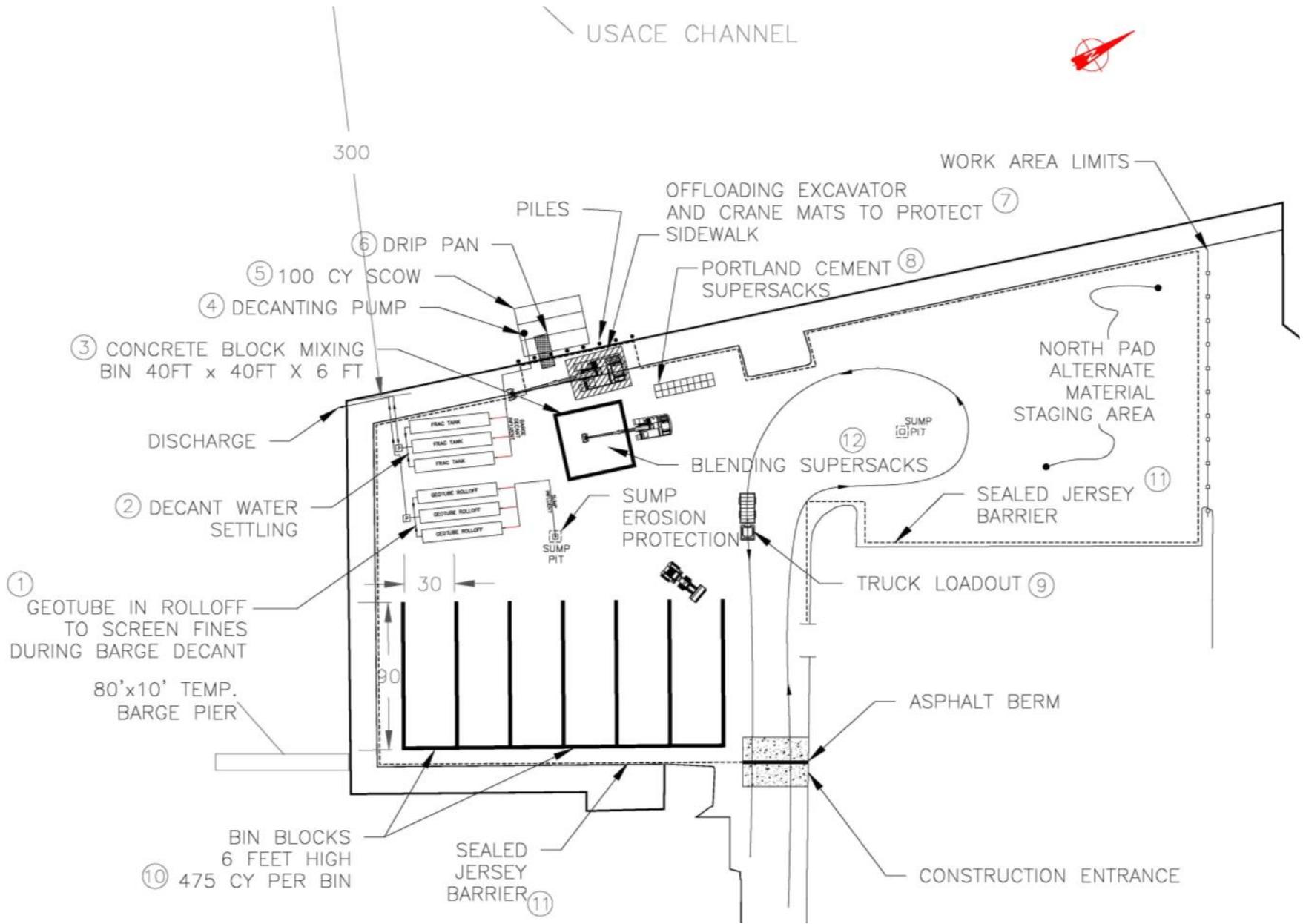
- Change equipment approach to mechanical dredging and barge transport
- Mechanically offload the sediment from 100 CY scows onto the processing pad and amend with portland cement
- Stage materials in the bins until disposal
- Materials in bins most likely less than 24 hours
- Treat water as required by NJDEP permit
- 20,000 gallons for water treated per day rather than 2.7M gallons per day with the hydraulic option



Year 2 Approach – Pad Layout



Year 2 Approach – Pad Layout



Year 2 Approach – Equipment



Year 2 Approach – Equipment



Year 2 Approach – Equipment



Year 2 Approach – Equipment



Year 2 Approach – Equipment



Year 2 Approach – Equipment



Year 2 Approach – Equipment

