Appendix II – Project Description

Cerritos Bahia Marina Maintenance Dredging Project Description

The purpose of this project is to perform maintenance dredging for the Cerritos Bahia Marina to maintain sufficient water depth for marina operations. The proposed dredge depth for the project is -6 feet mean lower low water (mllw) with an allowable over dredge of +2 feet. The volume of available material to be removed is 26,867 cubic yards (cy). A volume of 11,086 cy is available to -6 feet (mllw) and 15,781 cy is available in the +2 foot over dredge volume.

The marina is operated by the Cerritos Bahia Marina (client). The client leases the marina from Alamitos Bay Partnership. Alamitos Bay Partnership leases the parcel under the marina from the City of Long Beach (owners). Tetra Tech, Inc. has been hired by the client to develop plans, specifications and provide regulatory permitting for the project.

The client will contract with Genesis Fluid Solutions to provide dredging, dewatering, loading, transportation and disposal of dredging material.

This project entails utilizing a suction dredge to remove sediment from the marina's fairways and under the docks, pumping the material through a pipeline to a dewatering unit and disposing of the material in an approved upland disposal facility via truck.

Dredging Plan

The Dredge Plan indicates dredging is required throughout the marina and is especially needed under the docks and in Fairways C-E and E-F. Dredging will be conducted in phases. The client intends to vacate boats from two docks at a time to reduce impacts on marina operations and occupancy. This will provide sufficient dredge areas for the contractor to perform operations. The intent is to complete dredging in the first area then move boats from the next dredge area to the first dredge area, thereby creating a second dredge area clear of boats.

Dredging will be conducted using a 10-inch Barracuda hydraulic suction dredge manufactured by Dredging Supply Company. Dredged material will be pumped via a 10" pipeline to the processing area for dewatering and loading into trucks for disposal.

Dredged Material Processing and Handling Plan

Dredged material will be pumped via a 10 inch pipeline to a processing area in the Cerritos Bahia Marina parking lot. The pipeline will be routed to a dewatering unit located inside the processing area. The dewatered material will be loaded into dump trucks and transported to an approved disposal facility.

The processing area will be approximately 200 feet by 200 feet and located in the parking lot north of the marina. Dewatered dredge material will be used to create a berm around the processing area to contain sediment. A Stormwater Management Plan will be developed (if required) and implemented to eliminate sediment from escaping the processing area. Sediment control devices such as silt fences, fiber rolls, gravel bag

berms, sandbag barriers and straw balls will utilized in conjunction with Best Management Practices to treat stormwater and maintain the processing area.

Dewatering of dredged materials will be accomplished by Genesis Fluid Solutions' Rapid Dewatering System. The system receives a slurry of water and sediment via a 10 inch pipeline from the dredge. The initial phase separates sand and rocks utilizing screens and a hydro-cyclone. The rock and sand is stockpiled for loading into trucks. Polymers are then added to the slurry to facilitated flocculation of the fine particles. The slurry is then piped to the Rapid Dewatering System that separates fine particles from the water. The separated fine particles are stockpiled for further mechanical conditioning and loading into trucks. The return water is piped to a clarifier then back to the marina.

Dredged Material Disposal Plan

Loading material into trucks will be accomplished by front end loader located inside the processing area as indicated on the Processing Plan. The trucks will be called on an as needed basis and will stage in pre-determined locations within the parking lot. The trucks will pull up to the loading station and the front end loader will load the truck with dry material for transport to an approved disposal facility.

The disposal facility will be a State of California approved facility capable of proper disposal of dredged materials. The California Water Quality Control Board will approve the disposal location of the material during the permitting process. The facility will generate a disposal ticket indicating the tonnage of the material and proof of disposal.

A debris management plan will be prepared and implemented to handle the debris created during the dredging process. Debris will be generated at the initial screening phase and will be separated from sand for proper disposal.

Eelgrass Mitigation Plan

The Cerritos Bahia Marina Dredge project will result in a temporary loss of eelgrass within the marina. The project has been designed to minimize impacts to eelgrass by limiting the dredging to a depth of -6ft mean lower low water (mllw) instead of the design depth of -8ft mllw. However, the proposed project will impact a maximum of approximately 52,000 square feet of eelgrass beds. This resource provides important ecological functions to the ecosystem and is regulated by state and federal agencies. Impacts to eelgrass will therefore need to be mitigated in accordance with the Southern California Eelgrass Mitigation Policy (SCEMP Rev. 11). The Project Proponent proposes in-kind and on-site mitigation of these resources at a minimum ratio of 1.2 to 1 (i.e. up to 63,000 square feet of mitigation).

Monitoring the success of eelgrass mitigation shall be required for a period of five years in accordance with the Southern California Eelgrass Mitigation Policy. An eelgrass mitigation plan shall be prepared to discuss the methods and schedule for planting eelgrass at Cerritos Bahia Marina, and post-planting monitoring. The mitigation plan will include the following information, as relevant to the eelgrass mitigation sites: baseline

conditions, transplant methods, transplant timing, success criteria, and a five year monitoring program.

The following measures will be conducted as part of this project:

1) A pre-construction eelgrass survey will be conducted of the entire marina including the channel and opposite bank to the south. This survey will be conducted in accordance with the Southern California Eelgrass Mitigation Policy (SCEMP Revision 11). This survey will be conducted during the period of March through October. The survey is considered valid by NMFS for a period of no more than 60 days, with the exception that surveys conducted in August through October which will be valid until the following March 1. Pre-construction survey results will be submitted to National Marine Fisheries Service (NMFS) and the California Department of Fish and Game (CDFG) in an appropriate data format for the information to be mapped on the project drawings.

2) A project marine biologist shall mark the positions of eelgrass beds with buoys prior to the initiation of any construction to minimize damage to eelgrass beds outside the construction zone.

3) The project marine biologist shall meet with the construction crews prior to dredging to review areas of eelgrass to avoid and to review proper construction techniques.

4) If barges and work vessels are used during construction, measures shall be taken to ensure that eelgrass beds are not impacted through grounding, propeller damage, or other activities that may disturb the sea floor. Such measures shall include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels.

5) A post-construction survey will be conducted within 30 days of the completion of construction activities to determine the actual area of eelgrass affected for mitigation purposes. The Project Proponent will be required to mitigate the loss of eelgrass in accordance with the Southern California Eelgrass Mitigation Policy (SCEMP Revision 11). As per the SCEMP the loss of eelgrass habitat must be mitigated at a minimum 1.2:1 ratio.

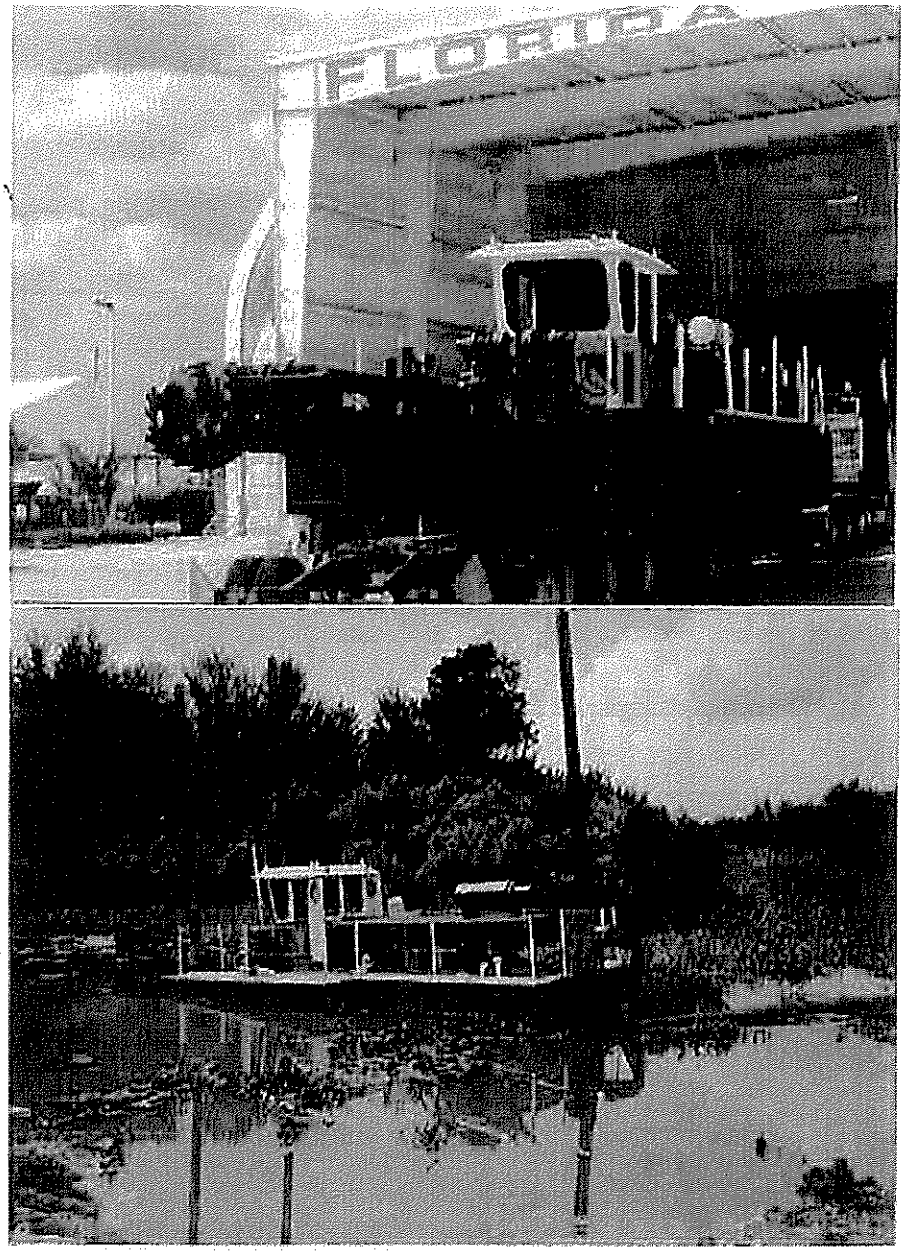
6) Eelgrass mitigation (transplant) will be initiated within 135 days of project inception. The amount of mitigation necessary will be determined by the difference between the pre-construction and post-construction surveys.

7) An eelgrass transplant report will completed following the transplant and monitoring surveys conducted at 6, 12, 24, 36, 48, and 60 months post-transplant. All monitoring work will be conducted during the active vegetative growth period and shall avoid the winter months of November through February. The Project Proponent shall ensure that project achievement of specific milestones and criteria

for success, as directed in the SCEMP along with guidelines for remedial actions, are documented. If the success criteria are not met, construction of a Supplementary Transplant Area and monitoring for an additional 5 years may be required by NMFS.

Environmental Monitoring

The environmental monitoring requirements will be issued by the regulatory agencies in the approved permits. Tetra Tech will perform water quality monitoring per the California Regional Water Quality Control Board protocol and any other required monitoring.



Dredge Kami - 12X10 Barracuda

Dredge Kami
O/N 1190978
10" BARRACUDA DREDGE

General

Ladder Length	24'
Overall Length (With Ladder)	61'-4"
Overall Width (With Side Tanks)	18'-6"
Hull Depth	4'-0"
Height-Overall	12'
Mean Draft(With Fuel)	28"
Spud Length (Each)	30'
Spud Weight (Each)	1,950#
Total Dredge Dry Weight - Est.	82,100#

Operating Conditions

Digging Depth	
Minimum	3'
Maximum	18'
Maximum Cut Of Dredge (Single Cut)	
@ Minimum Digging Depth (Swinging Ladder)	24'
@ Maximum Digging Depth (Swinging Ladder)	15'-6"
Swing @ Minimum Digging Depth (Conventional)	79'
Swing @ Maximum Digging Depth (Conventional)	67'

Prime Mover

Engine Make:	Caterpillar
Serial Number:	JRE02126
Engine Model:	C-15

Cutter Module

Cutter Gear (S/N 990754)	RR 1000DF
Cutting Force	6,070 lb
Operating Torque	85,000 In/lb
Cutting Force Per Linear Inch	303 Lb./In.
Cutter Diameter	34"
Shaft Diameter	3"
Cutter Rating	45 H.P.
Cutter Speed Variable	0-33 R.P.M.

Reduction Gear

Gear Make	Twin Disk
Gear Ratio	2.54:1.00
Gear Model	MG 5114 H.D.
Serial Number:	5JU413

Swing Winches

Pullmaster	H-8	
	H-8	
Line Pull		6,600 Lb.
Line Speed (1st Layer)		58 Ft/Min
Wire Size		9/16"
Drum Capacity		150'

Ladder Hoist Cylinder

Extending Force	19,500 Lb.
Retracting Force	41,000 Lb.
Lowering Speed	17 Ft./Min.
Hoisting Speed	20 Ft./Min.

Dredge Pump

Pearce Foundries, Inc.	
Suction	12"
Discharge	10"
Impeller Diameter	32"
Material - Ni-Hard #4 Wear Parts	

Hydraulic Pump

Commercial Shearing	3 Stage
P51B578BYOL15-11SNAB-10-1	

Hydraulic Motor

M51A878BEOF20-7	s/n 997-13-3

Service Water Pump

Peerless Model# 121020APBF	s/n 919517B

Spud Hoist Winches

Pullmaster PL5	
Line Pull	2,200 Lb.
Line Speed (1st Layer)	100 Ft/Min
Wire Size	1/2"
Drum Capacity	50'—

Electrical System

Battery	24 VDC

Capacities

Fuel	750 Gal
Hydraulic	200 Gal

Standard Features

Operator's Chair
Fire Extinguisher - (2) 10 Pound A-B-C
Lighted Ring Buoy
Handrail And Kick Rails
Guards
Early Warning Alarm System And Engine Shutdown System
Cabin Lights
Bilge Pump - Electric
Replaceable Edge Cutter
Dredge Pump Priming System
Dredge Wash Down System
Hi-Capacity Service Pump
Hydraulic Pump/Engine Clutch Disconnect
Pump/Engine Reduction Gear (No Belts Required)
Paint - Hull: Coal Tar Epoxy Paint
Superstructure & Structural: Primer And Top Coat Of Paint
Stern Pulling Eyes

Standard Features (Con't):

Hycon 6" Hydraulic Filters
Coupling Between Gear & Pump - Omega E100
Hydraulic Pump Coupling - Omega E60

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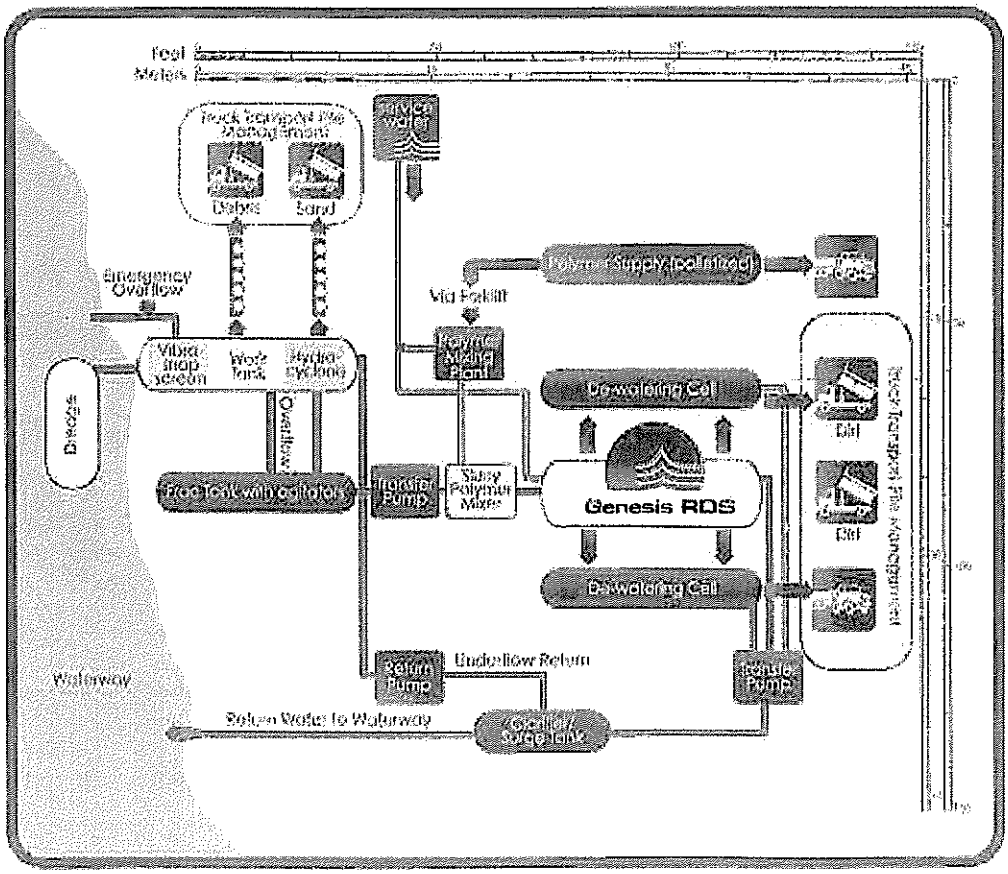
The Genesis Rapid Dewatering System

The unique, patented Genesis Rapid Dewatering System (RDS) is the only sediment dewatering method in the world today that can process hydraulically dredged sediment at a rate that matches the dredge output. While many processes can quickly dewater sand and gravel from a dredged slurry, only the Genesis system is designed to rapidly dewater fine grained sediments instantly and on-site. The three step process begins when the hydraulically dredged material is pumped directly into the Genesis system:

- First, the system removes and sorts large material, such as shells and debris, and sand.
- Specially matched polymers are then mixed with the fine-grained sediment slurry to flocculate the sediments.
- The water is removed from the flocculated sediments on the Genesis Rapid Dewatering System (RDS).

Depending on the desired water content, the sediment can be further dewatered on site in small, uniquely designed cells by capillary action and suction.



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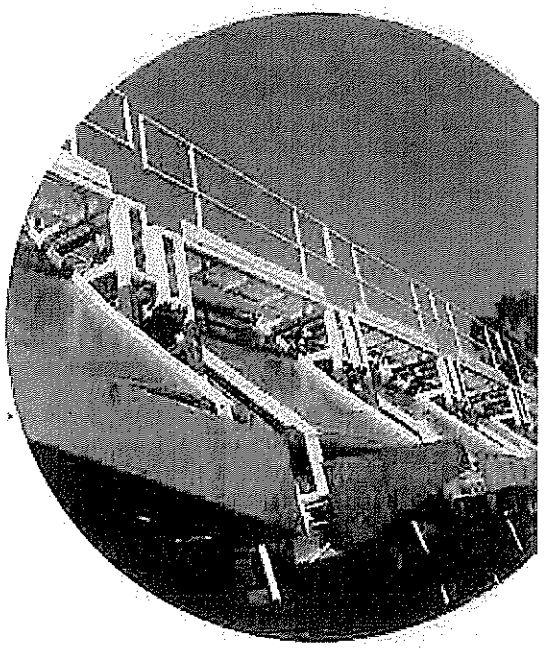
A Paradigm Shift to High Speed Dewatering Saves Time and Money

Unique to Genesis, the RDS can keep pace with the dredge flow on a one-to-one basis. The process can result in a significant cost savings when compared to other material or land intensive dewatering methods. The advanced technology of the Genesis system produces dewatered sediment in easily reusable forms. Sand and dirt, which are sorted in separate piles, can be used on-site or trucked away for reuse elsewhere.

With its Small Footprint, Genesis is Mobile and Easy to Transport

Ideal for urban settings, the entire Genesis system fits on a site of 150 ft x 150 ft or less and is truckable. With Genesis, areas that could not be effectively dredged in the past, due to lack of land for a dewatering facility, can now be effectively and affordably dredged.



Looking After the Environment

Genesis saves ecosystems from deforestation and destruction by eliminating the need for large tracts of land for dewatering. The environment has the added benefit of clear water returning instantly to the waterway at the end of the process. Return water has turbidity levels of less than 30 ppm of total suspended solids.

About Genesis

Founded by an elite team of chemists and engineers, Genesis grew from a U.S. based operation to the international leader in rapid dewatering technology. Headquartered in Colorado Springs, the company has become integral to waterway restoration projects in a wide range of public and private sectors worldwide, including regional watersheds, recreational waterways, and industrial applications.

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Santa Cruz Inner Harbor

Location: Santa Cruz, CA

Project Owner: Santa Cruz Port District

Project Size: 25,000 cu yd

Date of Completion: 2007

Over time, the Santa Cruz inner harbor accumulated sediment, rendering some boat slips too shallow to be commercially viable. The Port District decided to hydraulically dredge the inner harbor to remove the material, consisting of coarse debris, sand, and natural organic plant life, and to maintain a consistent depth. Santa Cruz Harbor is one of the most sensitive and high profile marine habitats in the U.S., so a primary concern was limiting the environmental impact. To this end, the District selected Genesis for dewatering, due to the speed of its process rate and the environmental benefits associated with its start-of-the-art technology.

The Genesis equipment train used on the Santa Cruz project processed 60-100 cubic yards of dredged material per hour. The advanced technology used by Genesis can scale up to processing speeds of three times this amount. This remarkable efficiency provided the Port District with a unique solution for a very short window of opportunity, since environmental permit restrictions required completion of the dredging project by a specified date within a two-month period. The Genesis rapid dewatering system continually dewatered the flow from a portable hydraulic dredge in the inner harbor at a rate of 2,500 gpm, producing clear return water and dry, reusable solids. The dry solids were then sold for reuse or safely trucked to a landfill.