

# SAN DIEGUITO WETLANDS RESTORATION PROJECT

## 24 APRIL 2012 BEACH PROFILES CITY OF DEL MAR, CALIFORNIA

### Data Report



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## **SAN DIEGUITO WETLANDS RESTORATION PROJECT**

### **24 APRIL 2012 BEACH PROFILES AT CITY OF DEL MAR, CALIFORNIA**

#### **Data Report**

### **1.0 INTRODUCTION**

This report describes the beach profiles surveyed along the Del Mar and Solana Beach coastline near the San Dieguito Lagoon inlet on 24 April 2012. The survey program is designed to comply with permit conditions set forth in the Coastal Development Permit (No. 06-04-088) issued by the California Coastal Commission (CCC) for the San Dieguito Wetlands Restoration Project.

### **2.0 PERMIT REQUIREMENTS**

The permit requires offshore beach profiles to be performed at seven (7) profile locations near the inlet to the San Dieguito Wetlands. Four (4) of the profiles are to be at historic profile locations, including DM-0590 (SIO1), DM-0580 (SIO2), SIO5B, and SIO6. Three (3) new profile locations are located south of SIO1: 500 feet (SIOA), 1,000 feet (SIOB), and 1,500 feet (SIOC) south of SIO1. Table 1 outlines the locations of the beach profiles.

Also, the permit requires that full profile (offshore/onshore) surveys are to be performed in the spring (April) and fall (October) for the seven profiles, and wading/onshore profiles are to be performed quarterly. All of the surveys are to be referenced to the City of Del Mar's Shore Protection Area (SPA) line, or to a fixed and identified feature for the site north of the SPA line (SIO6). The full profile surveys are to go to the depth of closure, where there are no substantial changes in bottom profile due to seasonal variations in wave conditions. The depth of closure has ranged from 35 ft to 50 ft in San Diego County (SANDAG, 2009).

This report provides beach profile data and analysis of the spring 2012 beach profile surveys carried out on 24 April 2012, as required by the permit.

### **3.0 METHODS AND PROCEDURES**

The beach profiles were conducted from the benchmarks to wading depth by total station and prism. Data were acquired along each transect from the survey marker to an offshore limit below MLLW (Mean Lower Low Water). Each survey marker (benchmark) was located at the back beach at a fixed point, primarily along a protective seawall. Data were collected at least to the depth of closure indicated by prior survey data (SANDAG, 2009).

**Table 1. Beach profile onshore survey marker locations.**

<b>Benchmark</b>	<b>California State Plane Coordinates, Zone 6 (ft), NAD83</b>		<b>Elevation, NGVD29 (ft)</b>
	<b>Northing</b>	<b>Easting</b>	
SIO1	1935951.7	6248823.5	13.5
SIO2	1934061.9	6249131.2	13.5
SIO5B	1936545.5	6248645.2	14.9
SIO6	1938477.3	6248035.2	18.0
SIOA	1935521.4	6248888.9	14.8
SIOB	1935008.3	6248975.3	14.7
SIOC	1934488.5	6249054.7	15.3

The beach and surf zone were surveyed using an electronic total station and survey rod. The total station was used to determine the position and elevation of the beach at each location occupied by the rod. A Sokkia Set-5A total station and SDR-33 electronic field data logger were utilized to collect the nearshore portion of the profile, providing an accuracy of approximately 2-4 cm both horizontally and vertically. The total station method reflects an infrared beam sent from the device to a prism atop a fixed-length pole, where the instrument measures the slant distance and horizontal and vertical angles to the target (Figure 1). An electronic field data logger is used to store the data, which can then be set to known positions using permanent local benchmarks. Each transect was surveyed from the back beach seaward through the surf zone until the rod no longer protruded above the water surface.

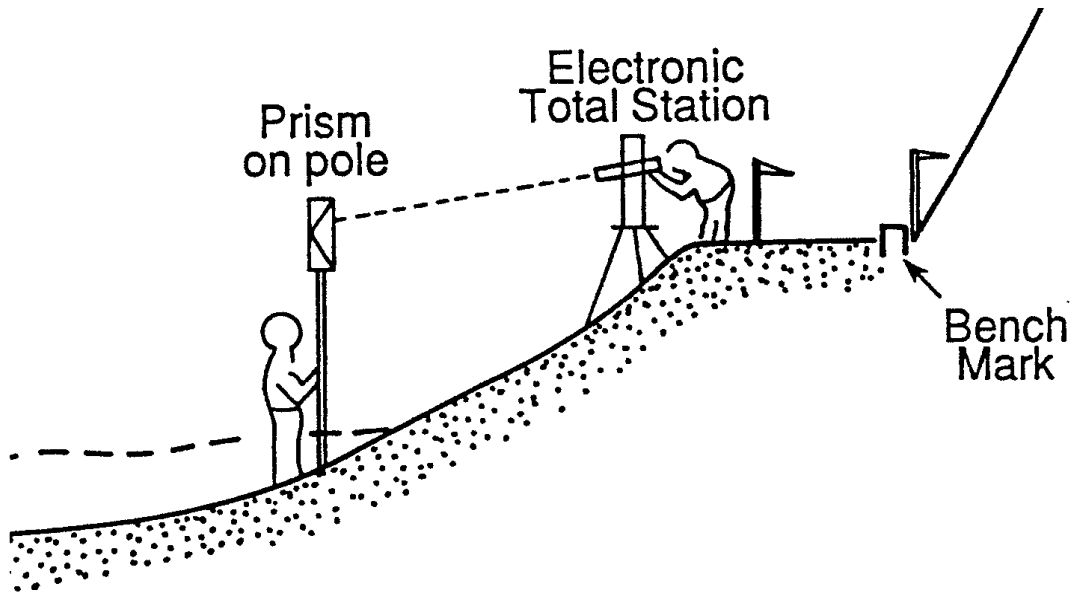
The beach width was calculated from the Del Mar SPA line to 0 ft NGVD except for SIO6, which was calculated from the benchmark. The distance of the profile benchmarks to the SPA line is shown in Table 2. Volume density calculations were made for +3.0 ft, 0 ft, and -2.56 ft NGVD for each of the profiles, beginning at the benchmark elevation.

#### **4.0 BEACH PROFILE SURVEY RESULTS**

The 2012 beach profile surveys were performed on 24 April 2012, along the four historic and three newly established profiles (Figure 2). The beach profiles are presented in Appendix A. The beach width for each of the profiles is presented in Appendix B. Range SIO5 located north of the inlet below the cliff had a beach width of **64.7 feet** less than the permit's value of **74 feet**.

#### **5.0 REFERENCES**

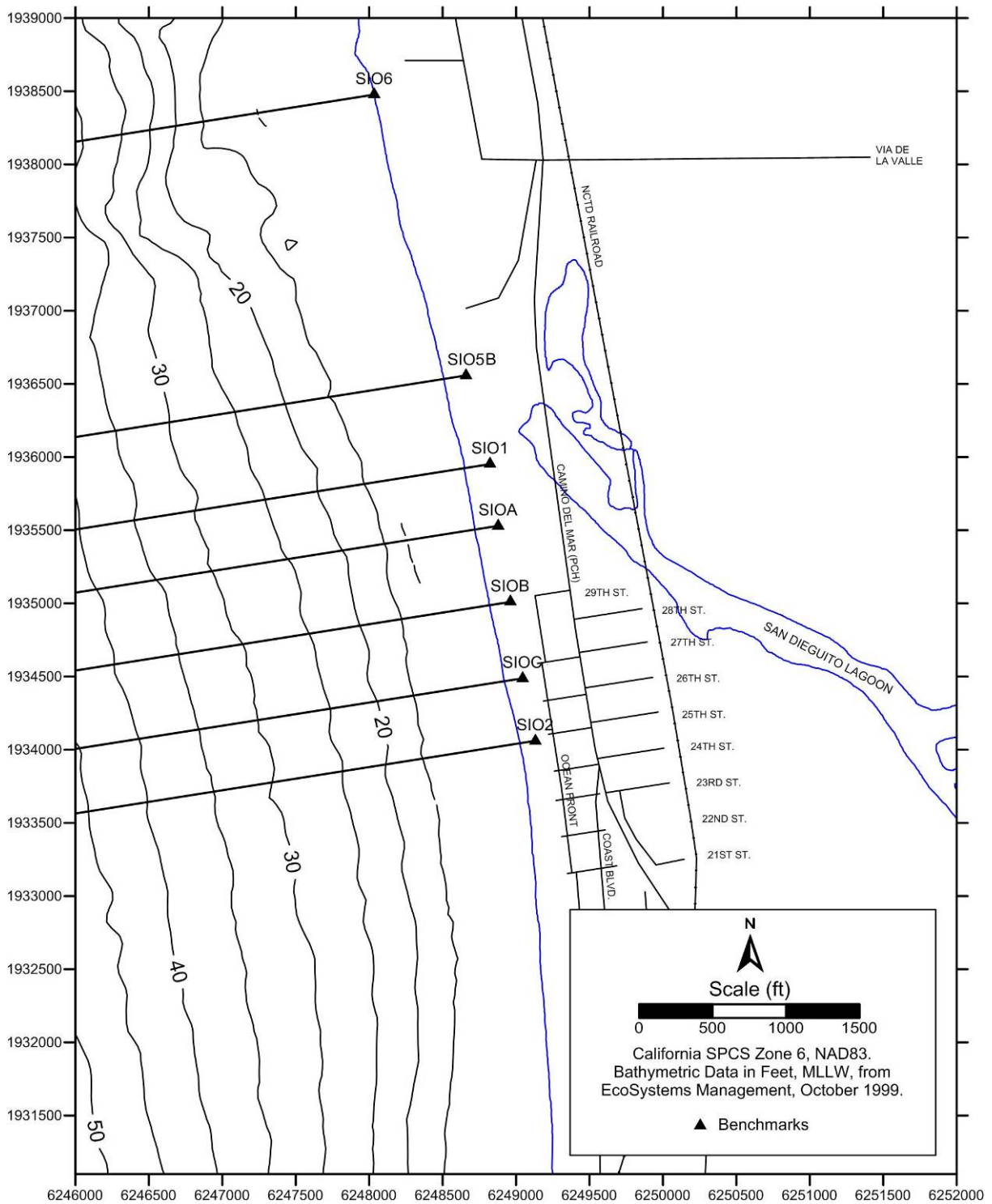
- SANDAG, 2009. Regional Beach Monitoring Program – Annual Report, June 2010, Chatsworth, CA. 111 pp. + app.
- Coastal Environments, 2010. San Dieguito Lagoon Wetlands Restoration Project, 18 October 2010 Beach Profiles, City of Del Mar, California, Data Report. Prepared for Southern California Edison Company, 2244 Walnut Grove Avenue, Rosemead, CA 91770. CE Reference No. 10-37 dated 31 December 2010. 6 pp. + 2 appendices.
- Coastal Environments, 2011a. San Dieguito Lagoon Wetlands Restoration Project, 17 January 2011 Beach Profiles, City of Del Mar, California, Data Report. Prepared for Southern California Edison Company, 2244 Walnut Grove Avenue, Rosemead, CA 91770. CE Reference No. 11-13 dated 31 January 2011. 6 pp. + 2 appendices.
- Coastal Environments, 2011b. San Dieguito Lagoon Wetlands Restoration Project, 15 April 2011 Beach Profiles, City of Del Mar, California, Data Report. Prepared for Southern California Edison Company, 2244 Walnut Grove Avenue, Rosemead, CA 91770. CE Reference No. 11-14 dated 3 May 2011. 6 pp. + 2 appendices.
- Coastal Environments, 2011c. San Dieguito Lagoon Wetlands Restoration Project, 22 June 2011 Beach Profiles, City of Del Mar, California, Data Report. Prepared for Southern California Edison Company, 2244 Walnut Grove Avenue, Rosemead, CA 91770. CE Reference No. 11-20 dated 17 June 2011. 6 pp. + 2 appendices.



**Figure 1. Schematic illustration of the survey method.**

**Table 2. Beach width adjustment to City of Del Mar Shoreline Protection Area Line.**

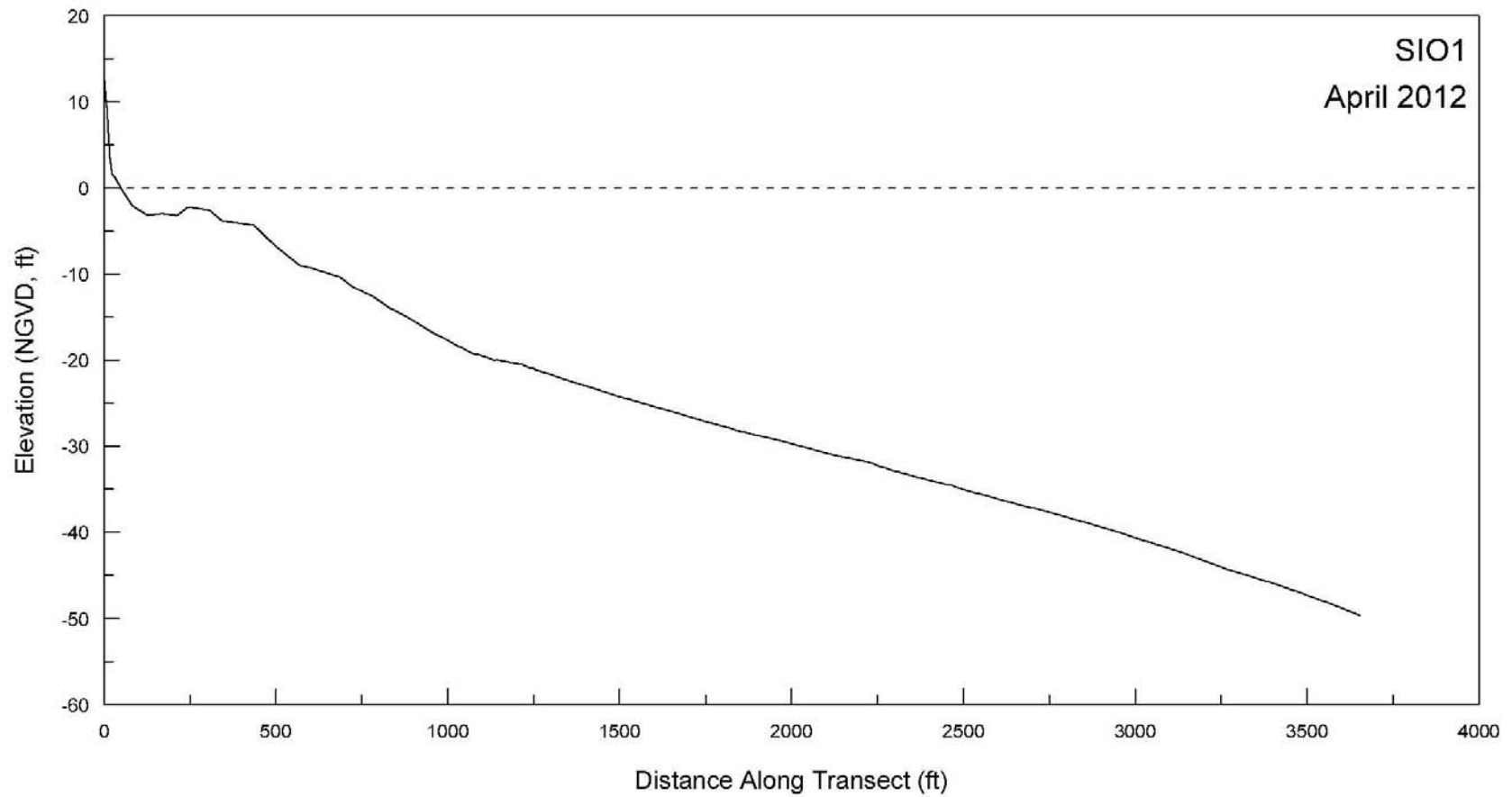
<b>Benchmark</b>	<b>Adjustment (ft)</b>
SIO1	+1.4
SIO2	+1.0
SIO5	+12.2
SIO5B	+32.2
SIO6	0
SIOA	+1.5
SIOB	-4.2
SIOC	+9.3



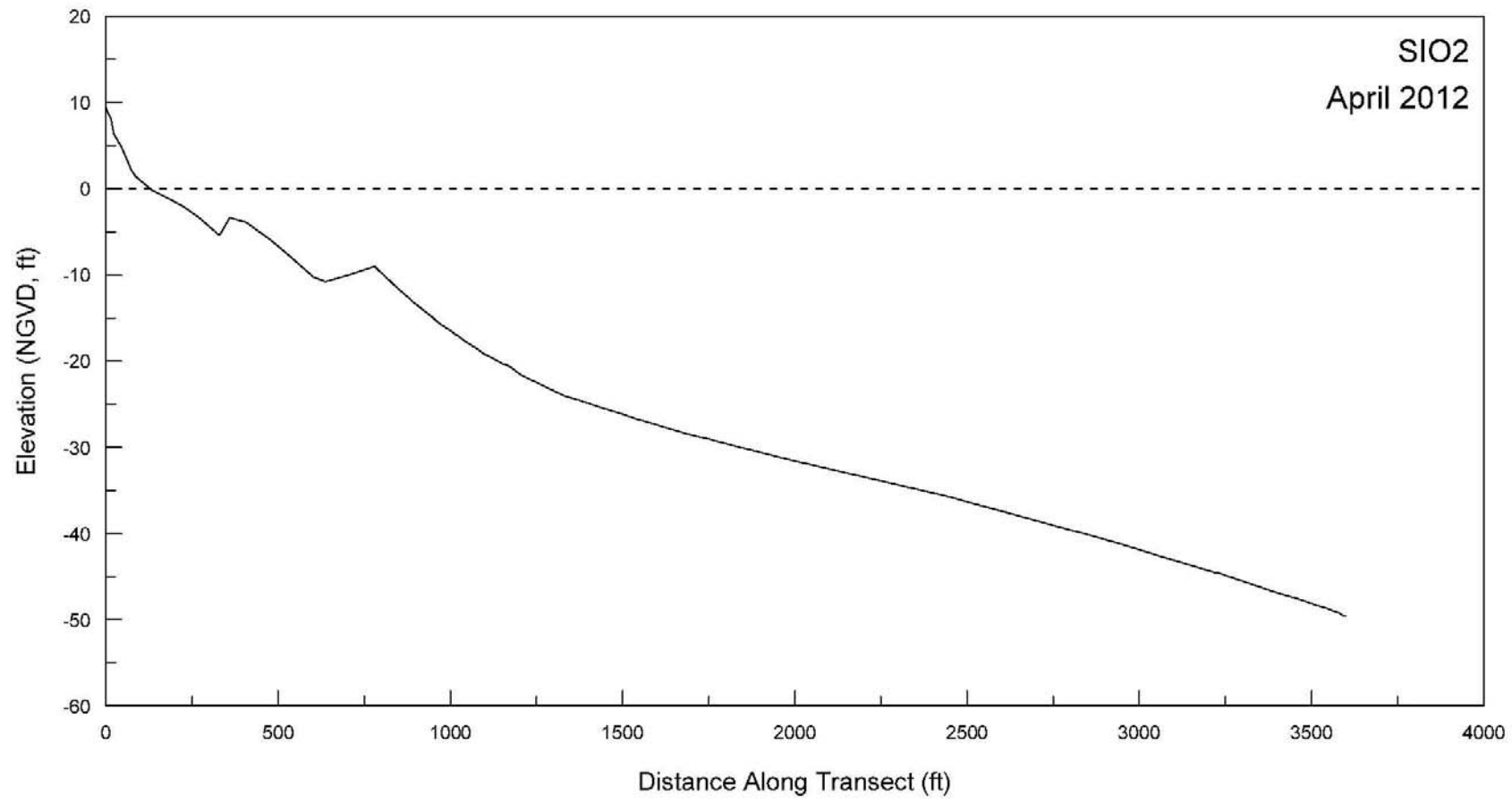
**Figure 2. Beach profiles surveyed on 24 April 2012.**



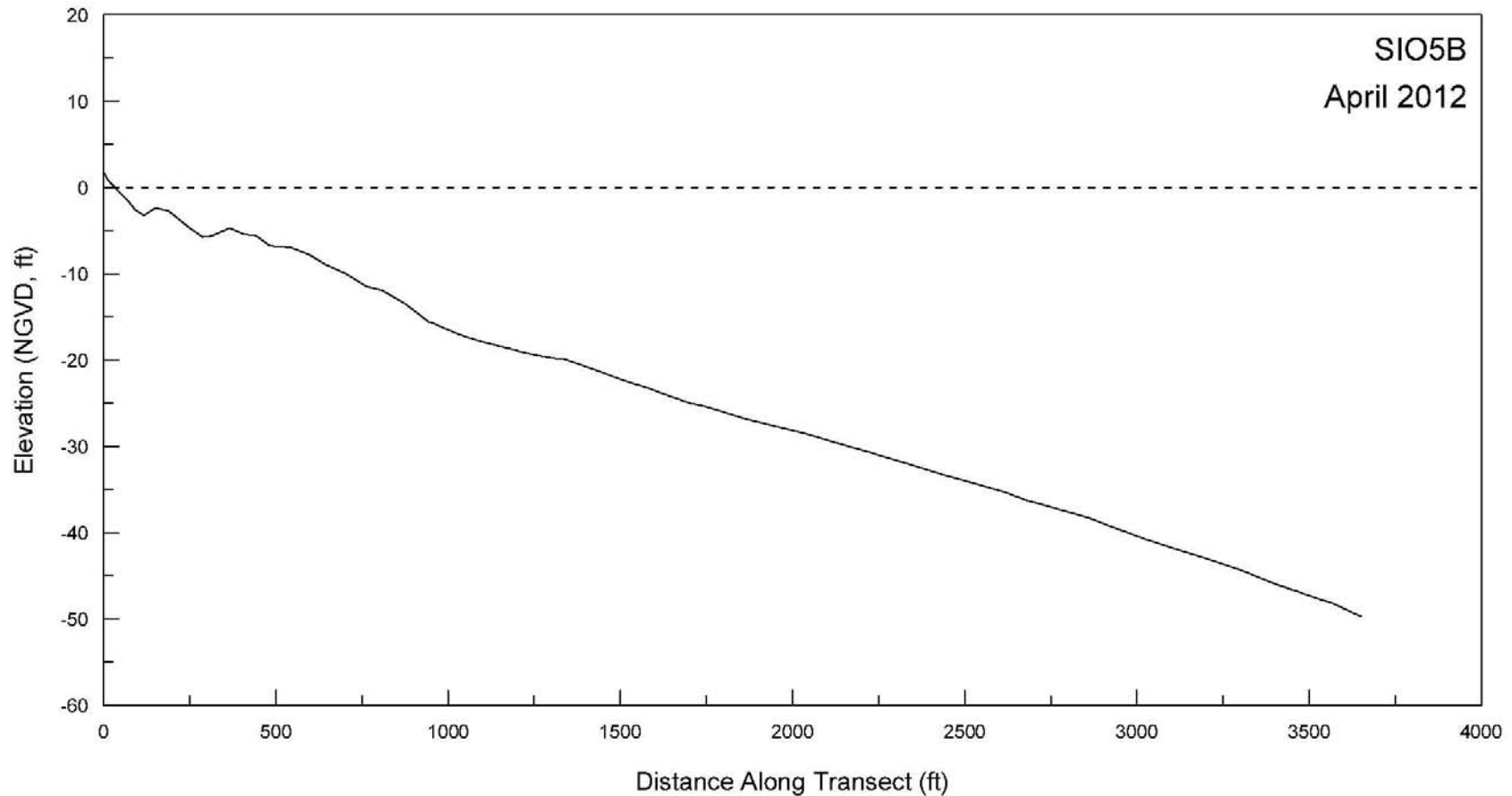
**APPENDIX A**  
**24 APRIL 2012**  
**BEACH PROFILES**



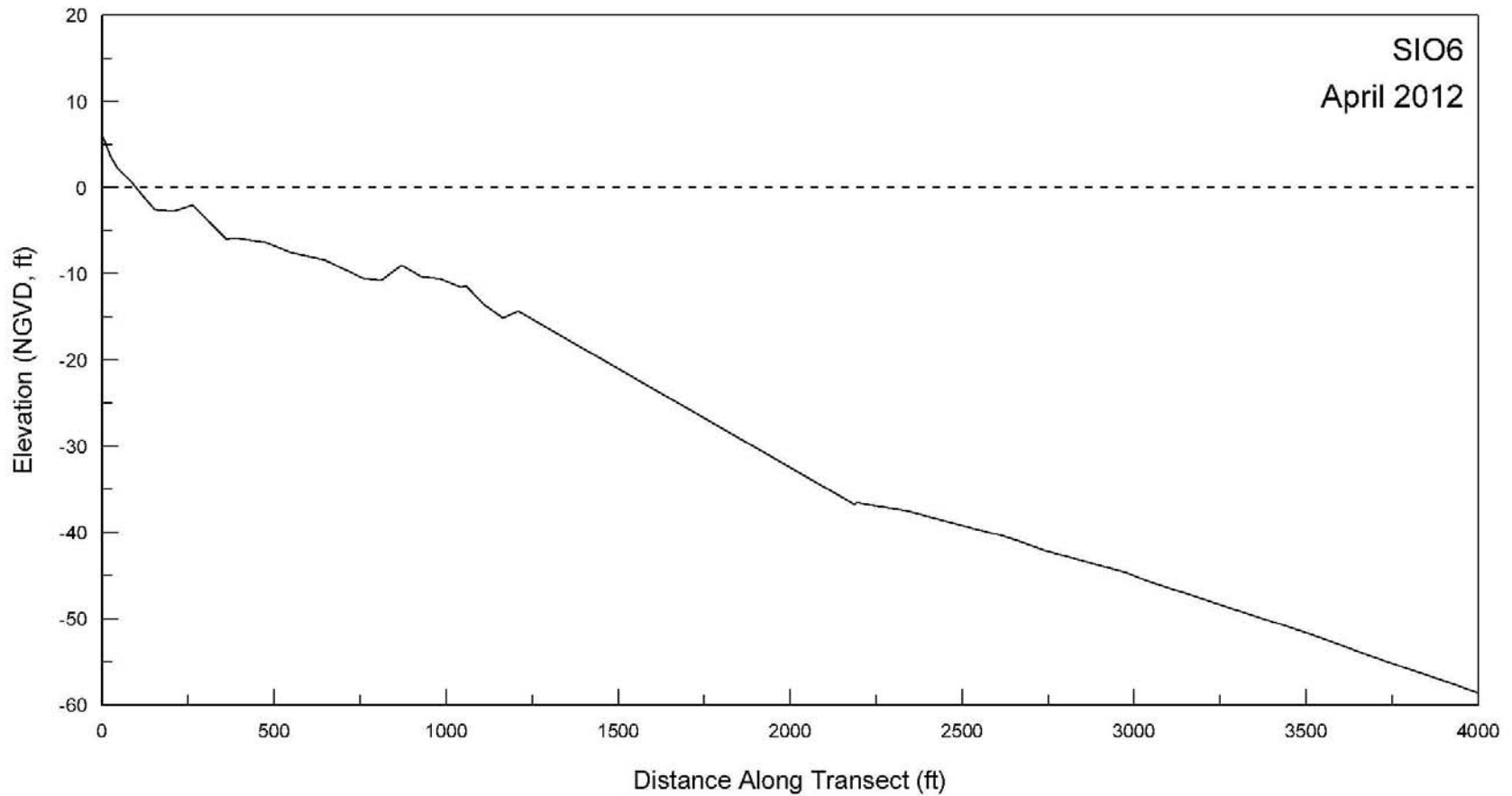
**Figure A-1. Beach profile for SIO1 surveyed in April 2012.**



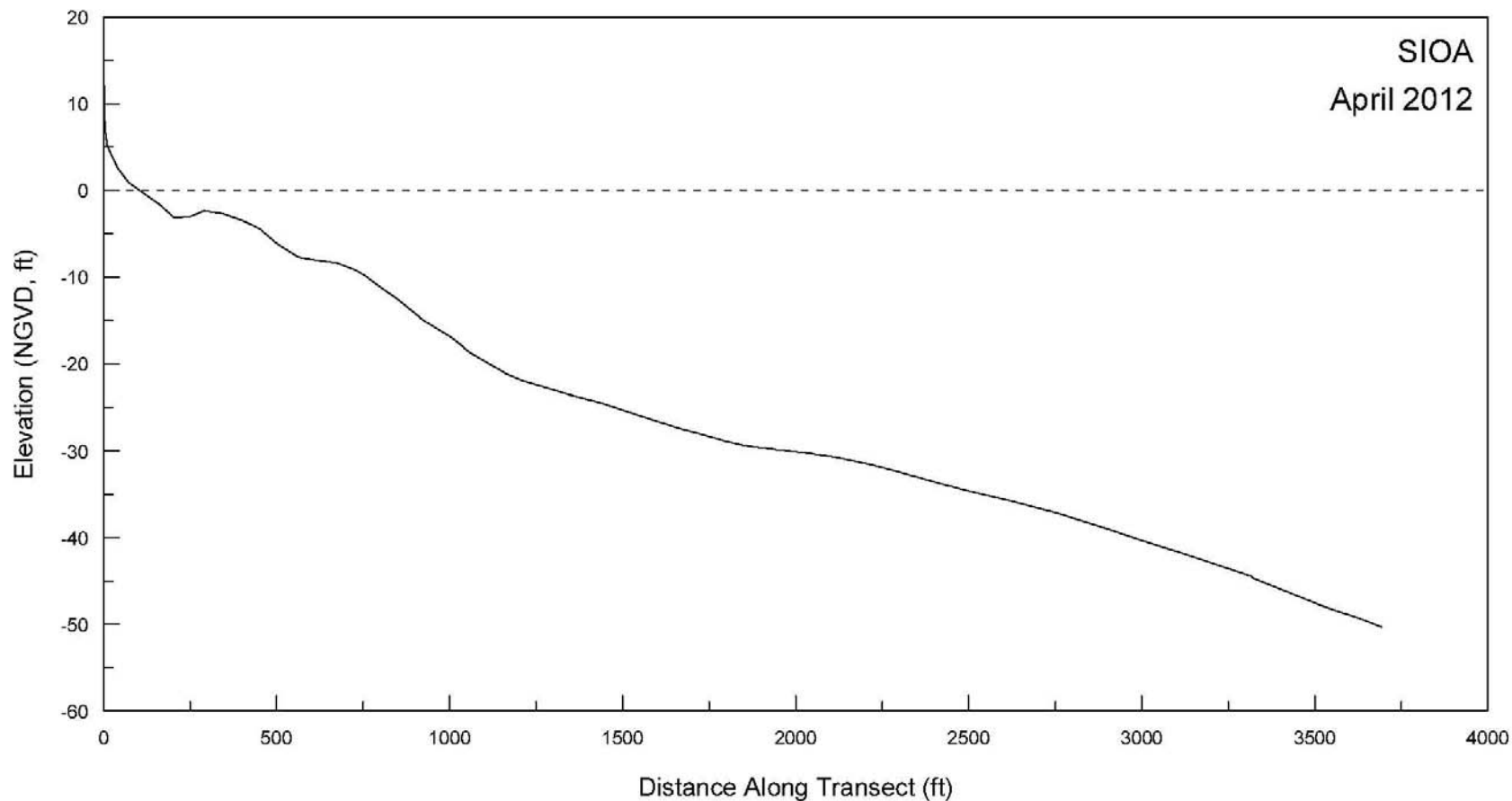
**Figure A-2. Beach profile for SIO2 surveyed in April 2012.**



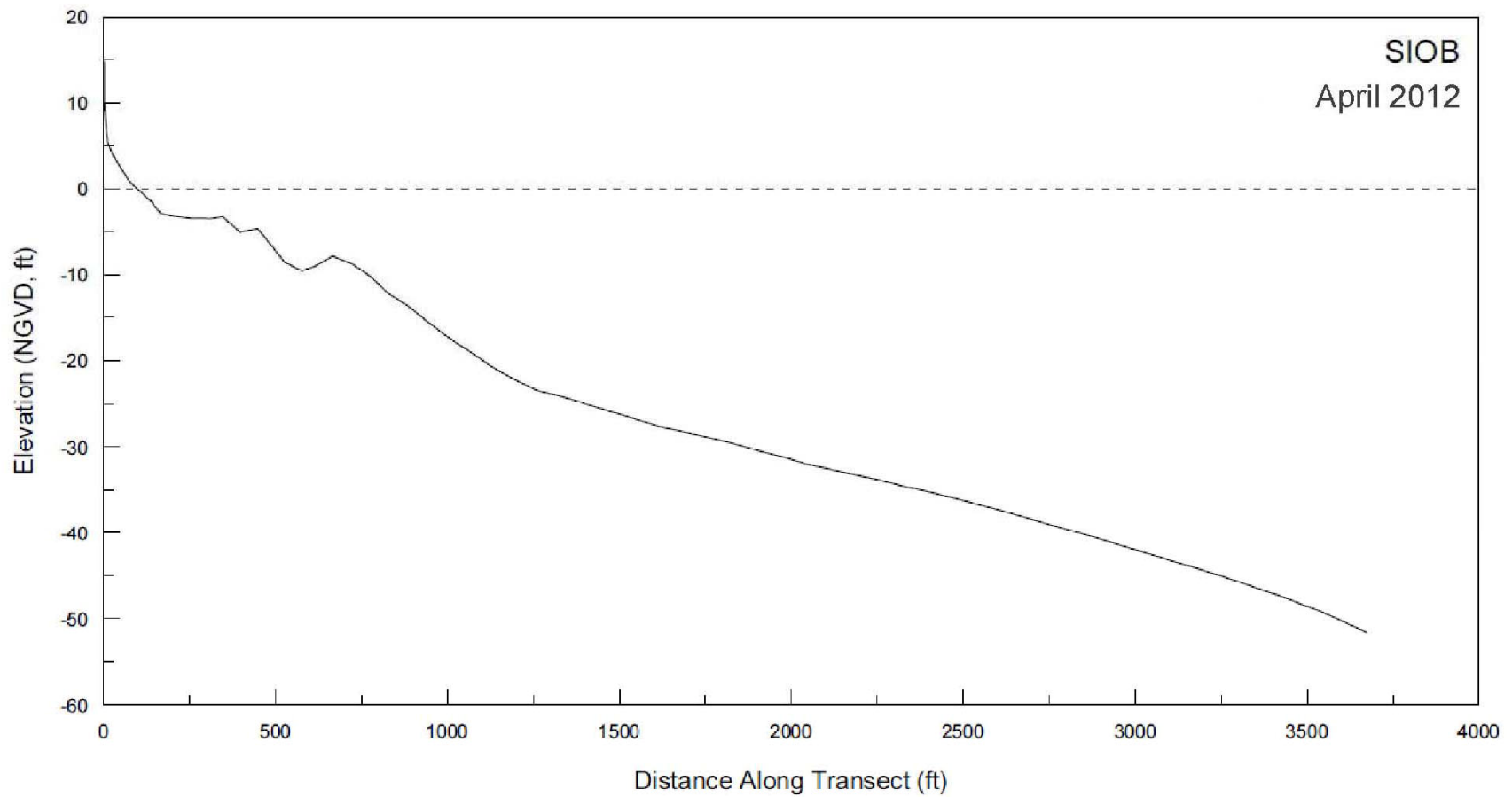
**Figure A-3. Beach profile for SIO5B surveyed in April 2012.**



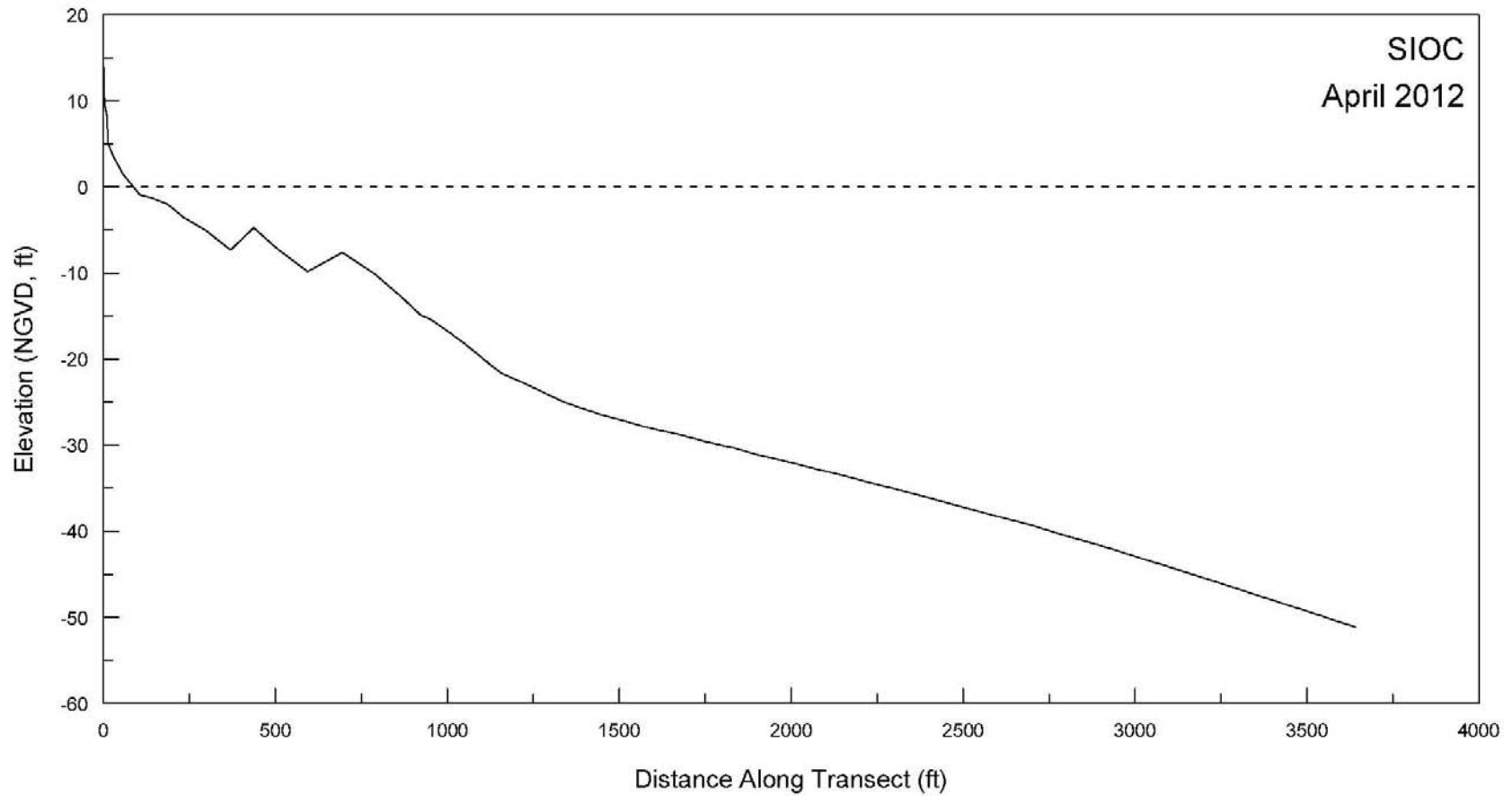
**Figure A-4. Beach profile for SIO6 surveyed in April 2012.**



**Figure A-5. Beach profile for SIOA surveyed in April 2012.**



**Figure A-6. Beach profile for SIOB surveyed in April 2012.**



**Figure A-7. Beach profile for SIOC surveyed in April 2012.**



**APPENDIX B**  
**24 APRIL 2012**  
**BEACH WIDTHS**

**Table B-1. Beach widths (ft) from 24 April 2012 beach profile surveys referenced to benchmarks.**

Date	SIO1	SIO2	SIO5B	SIO6	SIOA	SIOB	SIOC
24 April 2012	49.4	128.7	32.4	98.4	104.2	97.5	87.2

**Table B-2. Beach widths (ft) from 24 April 2012 beach profile surveys adjusted to City of Del Mar Shore Protection Area.**

Date	SIO1	SIO2	SIO5	SIO6	SIOA	SIOB	SIOC
24 April 2012	50.8	129.7	64.7 <sup>4</sup>	98.4	105.7	93.3	96.5

Note CCC conditions:

- (1) The beach width at DM-0590 (SIO1) is at or less than 32.4 feet (the lowest historically observed minimum);
- (2) The beach width at DM-0590 (SIO1) is at or less than 90 feet and there is more than a 180-foot difference in beach widths measured at DM-0590 and DM-0580 (SIO1 and SIO2); or
- (3) The beach width at SD-0595 (SIO5) is at or less than 74 feet (the lowest historically observed minimum).
- (4) Range SIO5 located north of the inlet below the cliff had a beach width of **64.7 feet** less than the permit's value of **74 feet**.