

**State Clearinghouse No. 2011081079**



*Established in 1938*

**ADDENDUM TO MITIGATED NEGATIVE DECLARATION**

**POINT BUCHON OCEAN BOTTOM  
SEISMOMETER PROJECT  
REPAIR AND REDEPLOYMENT PROGRAM**

June 2016



**CEQA Lead Agency:**

California State Lands Commission  
100 Howe Avenue, Suite 100 South  
Sacramento, CA 95825

**Project Proponent:**

Pacific Gas and Electric Company (PG&E)  
245 Market Street, MCN4C  
San Francisco, CA 94105



### **MISSION STATEMENT**

The California State Lands Commission provides the people of California with effective stewardship of the lands, waterways, and resources entrusted to its care through preservation, restoration, enhancement, responsible economic development, and the promotion of public access.

### **CEQA DOCUMENT WEBSITE**

[www.slc.ca.gov/Info/CEQA.html](http://www.slc.ca.gov/Info/CEQA.html)

### **Geographic Location**

#### **(Autonomous Ocean Bottom Seismometer [AOBS] sites):**

AOBS Number	Latitude	Longitude
1	35° 16' 12.43338"N	-120° 56' 17.43618" W
2	35° 15' 21.54489"N	-120° 57' 45.53449" W
3	35° 13' 21.23439"N	-120° 56' 32.56787" W
4	35° 10' 33.51778"N	-120° 53' 56.23807" W

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### LIST OF ABBREVIATIONS AND ACRONYMS USED IN THIS DOCUMENT

<b>A</b>	AOBS	Autonomous Ocean Bottom Seismometer
<b>C</b>	CEQA	California Environmental Quality Act
	CNRA	California Natural Resources Agency
	CSLC	California State Lands Commission
<b>D</b>	DCPP	Diablo Canyon Power Plant
	DEPM	Division of Environmental Planning and Management
<b>G</b>	GHG	Greenhouse Gas
	GPS	Global Positioning System
<b>I</b>	IS	Initial Study
<b>K</b>	km	kilometer
	knot	nautical mile per hour
<b>M</b>	MBNMS	Monterey Bay National Marine Sanctuary
	MND	Mitigated Negative Declaration
<b>O</b>	OBS	Ocean Bottom Seismometer
<b>P</b>	PG&E	Pacific Gas and Electric Company
<b>R</b>	ROV	Remotely Operated Vehicle
<b>S</b>	SLOAPCD	San Luis Obispo County Air Pollution Control District

### 1 1.1 PROJECT LOCATION AND BACKGROUND

2 The Pacific Gas and Electric Company's (PG&E) Point Buchon Ocean Bottom  
3 Seismometer Project (Project) is located in the waters of the Pacific Ocean offshore of  
4 the Diablo Canyon Power Plant (DCPP) along the south-central coast of California,  
5 approximately 16 miles (26 kilometers [km]) west of the City of San Luis Obispo. The  
6 Project area extends from the DCPP (located onshore) seaward to the State of California  
7 jurisdictional limit 3 nautical miles (5.6 km) from the mean high tide line. The area includes  
8 the marine waters located between Point Buchon and Point San Luis.

9 On March 29, 2012, the California State Lands Commission (CSLC) adopted a Mitigated  
10 Negative Declaration (MND) for the original Project (State Clearinghouse No.  
11 2011081079) and authorized a General Lease – Data Collection Use (PRC 8985.1) for  
12 the installation and operation of an array of short- and long-term seismic activity  
13 monitoring devices on the seafloor within the coastal zone offshore of San Luis Obispo  
14 County. The approved Project at that time was comprised of two temporary autonomous  
15 ocean bottom seismometer (AOBS) units, four long-term ocean bottom seismometer  
16 (OBS) units, and an approximately 11.5 mile (18.5-km) cable, 2 inches (5 centimeters) in  
17 diameter, which provided power to the long-term OBS units and transmitted data to the  
18 shore-based facility within the DCPP.

19 The offshore Project components were installed in July, 2013; in November 2013, PG&E  
20 recovered the two temporary AOBS units, which operated for 17 weeks as scheduled,  
21 and made final adjustments to the system. PG&E accepted the fully adjusted system on  
22 November 24, 2013. On February 11, 2014, PG&E submitted the As-Built Documentation  
23 Report (Report) to the CSLC, which was required within 90 days of PG&E accepting the  
24 system's final disposition, pursuant to Special Provision No. 5 of the lease. The Report  
25 noted that the final installed location of the power/data cable had to be modified during  
26 installation and was different than the original approval. PG&E subsequently submitted a  
27 lease amendment application package to the CSLC to address the modified power  
28 data/cable location.

29 On February 19, 2014, the long-term OBS system experienced initial failures; the entire  
30 system became inoperable by April 1, 2014. In order to continue earthquake monitoring  
31 while the long-term OBS system remained offline, four new AOBS units were installed on  
32 November 4, 2014. The long-term OBS system was completely recovered and removed  
33 on May 19, 2015, in order to better understand the causes for the failure and to evaluate  
34 potential repair or replacement options. During the recovery of the long-term OBS system,  
35 the four AOBS units were serviced. The units were serviced again on November 21, 2015.  
36 The current locations of the AOBS units are shown in Figure 1.

1 **1.2 LEASE PRC 8985.1 MODIFICATION AND PROJECT OBJECTIVES**

2 Following a complete review of the cabled OBS system and a review of alternate designs  
3 at the end of 2015, PG&E has determined that the cabled OBS system was non-  
4 repairable and has opted not to reinstall the long-term cabled OBS system. As a result,  
5 PG&E proposes to continue its operation of the four AOBS units so that earthquake  
6 monitoring offshore of the DCPD can continue. Because the AOBS units do not require a  
7 power/data cable, the units must be serviced every 6 months to recover data and  
8 recharge the batteries. As a result, PG&E has requested an amendment to the approved  
9 Project analyzed in the MND. Such amendment would reflect the installation of the four  
10 AOBS units and removal of the cabled OBS system (which have already occurred as  
11 discussed above), and biannual recovery, servicing, and redeployment activities  
12 associated with the four AOBS units as summarized below and discussed in greater detail  
13 in Section 2, Description of Lease Modification.

- 14 • The four AOBS units would be retrieved and brought to shore to transfer data and  
15 recharge each unit's batteries approximately every 6 months or following any  
16 large-scale seismic event.
- 17 • Immediately following, the AOBS units would be redeployed offshore to continue  
18 seismic data collection activities. The AOBS units have been and would continue  
19 to be redeployed to their previous approved locations, which are characterized as  
20 soft-bottom habitat (no sensitive hard-bottom habitat) areas.
- 21 • All retrieval and redeployment activities would be performed with high-precision  
22 onboard navigational support.

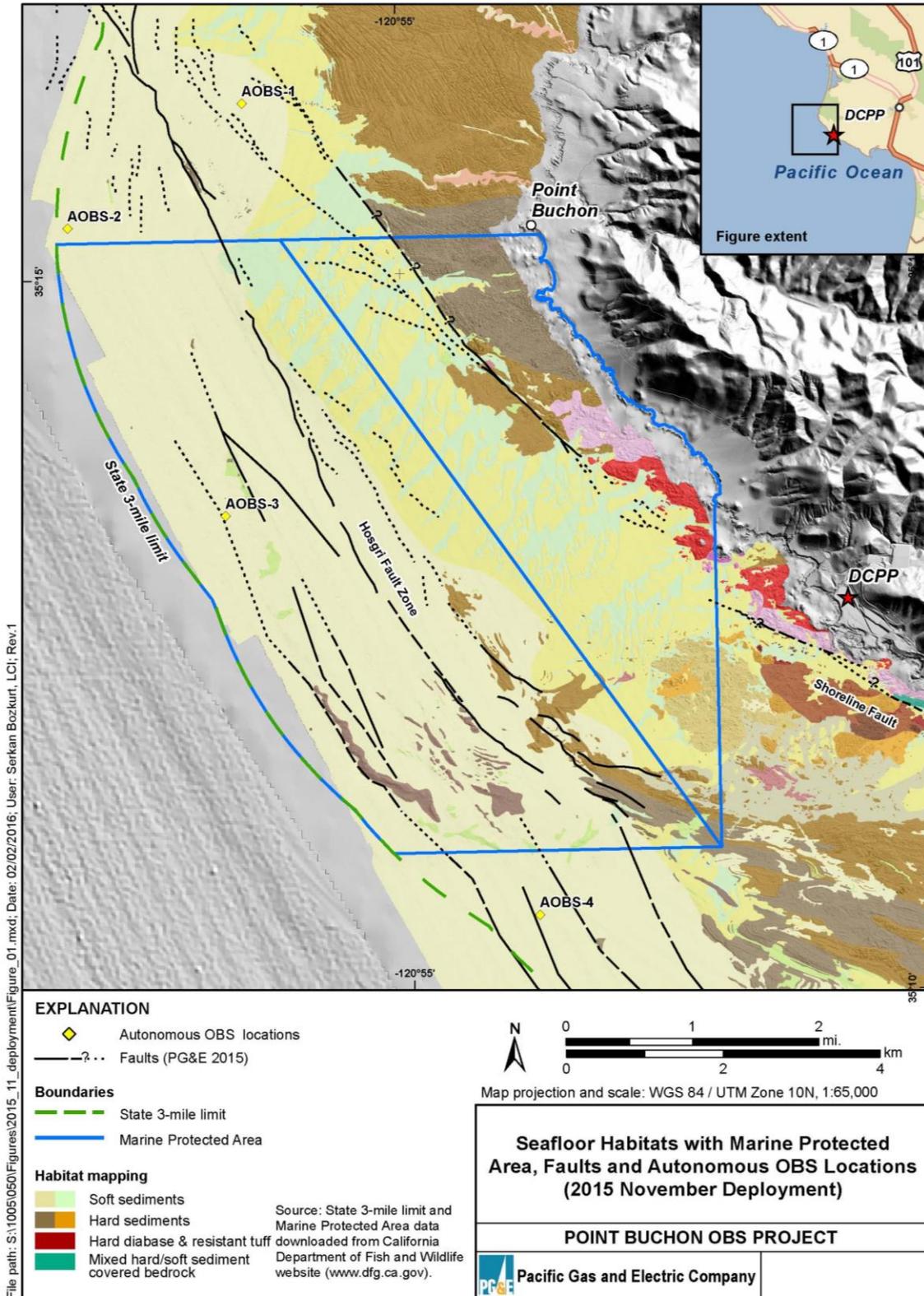


Figure 1. Project Location

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## 2.0 DESCRIPTION OF LEASE MODIFICATION

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### 1 2.1 ADDENDUM PURPOSE AND NEED

2 Per section 15164 of the State California Environmental Quality Act (CEQA) Guidelines,  
3 once a Mitigated Negative Declaration (MND) has been adopted for a project, no  
4 subsequent document shall be prepared unless the lead agency determines certain  
5 specific circumstances are present. These circumstances only occur when there is the  
6 involvement of a new significant impact or a substantial increase in a previously identified  
7 impact. If the proposed changes do not involve a new or substantially increased  
8 significant impact resulting from a change in the project or a change in the circumstances  
9 under which a project would occur, but instead reflect minor modifications or additions,  
10 the lead agency is to prepare an addendum to the CEQA document, in this case, the  
11 previously adopted MND for the Pacific Gas and Electric Company (PG&E) Point Buchon  
12 Ocean Bottom Seismometer Project (Project).

13 The purpose of this Addendum to the adopted MND is to verify that the modifications to  
14 the Project would not cause significant, adverse impacts to the environment. As  
15 presented below, none of the conditions described in State CEQA Guidelines section  
16 15162 calling for the preparation of a subsequent environmental document has occurred.  
17 As a result, an addendum is the appropriate CEQA document for analysis and  
18 consideration of the Project.

19 Circulation of an addendum for public review is not necessary (State CEQA Guidelines,  
20 § 15164, subd. (c)); however, the addendum must be considered in conjunction with the  
21 previously adopted MND for the project by the decision-making body (State CEQA  
22 Guidelines, § 15164, subd. (d)).

### 23 2.2 COMPONENTS OF PROJECT MODIFICATION

24 The revised Project includes the permanent removal of four previously installed Ocean  
25 Bottom Seismometer (OBS) units, including a power/data cable, and replacement with  
26 four Autonomous OBS (AOBS) units that do not require a power/data cable. Although  
27 removal of the OBS units and cable and placement of the existing AOBS units occurred  
28 in 2015, operation and biannual servicing of these AOBS units would continue. The AOBS  
29 units would be permanently removed no later than March 28, 2023, consistent with Lease  
30 PRC 8985.1. A summary of the Project's components is provided below.

#### 31 2.2.1 Transportation and Retrieval/Redeployment Methodology

32 **Equipment Requirements.** The M/V *Surveyor*, a 30-meter (100-foot) long, steel-hulled  
33 vessel owned and operated by Maritime Logistics would be used for AOBS retrieval and  
34 redeployment activities. The M/V *Surveyor* is equipped with two twin-screw 600

1 horsepower diesel engines, an A-frame, and a hydraulic crane with a 5-ton capacity. The  
 2 *M/V Surveyor* has a cruising speed of up to 8.5 nautical miles per hour (knots).

3 **AOBS Specifications.** The four AOBS units are self-contained and comprised of  
 4 digitizers, data loggers, and lithium ion batteries. The footprint of each unit, including the  
 5 acoustic retrieval system, is approximately 4 feet by 2 feet (1,260 by 593 millimeters)  
 6 (Figures 2 and 3). Each unit weighs approximately 100 kilograms (220 pounds).

7 **Retrieval/Redeployment Activities.** To recover and service the four AOBS units, the  
 8 *M/V Surveyor* would mobilize to the offshore Project site from Morro Bay Harbor. Each  
 9 unit would be located with an onboard Global Positioning System (GPS) using the  
 10 coordinates recorded during a post-installation remotely operated vehicle (ROV) survey  
 11 (Table 1). No anchoring would occur during AOBS retrieval or redeployment activities.

12 **Table 1. Coordinates of AOBS Units (NAD83)**

Autonomous OBS No.	Latitude	Longitude
AOBS - 1	35° 16' 12.43338"N	-120° 56' 17.43618" W
AOBS - 2	35° 15' 21.54489"N	-120° 57' 45.53449" W
AOBS - 3	35° 13' 21.23439"N	-120° 56' 32.56787" W
AOBS - 4	35° 10' 33.51778"N	-120° 53' 56.23807" W

13 To recover each unit, the unit's acoustic release would be signaled, which would release  
 14 a buoy attached to the cylindrical container on the AOBS frame (Figures 2 and 3). Once  
 15 the deck crew retrieves the buoy, the onboard winch would be used to attach a line to the  
 16 ring on top of the unit. The AOBS unit would then be lifted from the seafloor and placed  
 17 onboard the *M/V Surveyor*. The Applicant anticipates that approximately two AOBS units  
 18 would be recovered each workday, with the *M/V Surveyor* returning to Morro Bay each  
 19 evening. The recovered AOBS units would then be offloaded at Morro Bay in order to  
 20 download data and recharge batteries; data transfer and battery recharge would occur at  
 21 the dock. The Applicant anticipates that it would take 2 days to retrieve the four AOBS  
 22 units and approximately 2 days for servicing and data recovery. Recovery of the AOBS  
 23 units will not result in debris left on the seafloor.

24 When the AOBS units are ready to be redeployed, the *M/V Surveyor* would mobilize to  
 25 the offshore Project site. Similar to recovery operations, each deployment location would  
 26 be verified by the onboard GPS. Each AOBS unit would then be rigged on the vessel's  
 27 A-frame and lowered to the seafloor. The seafloor position for each unit would be verified  
 28 with an Ultra Short Base Line tracking system using a tracking pinger mounted directly  
 29 above the acoustic release system on the AOBS unit to record and ensure the accuracy  
 30 of each unit's redeployment location. Each AOBS unit would be returned to its previous  
 31 soft-bottom habitat location, and no additional seafloor habitat disturbance would occur.  
 32 The Applicant anticipates that it would take approximately 2 days to redeploy the four  
 33 AOBS units.

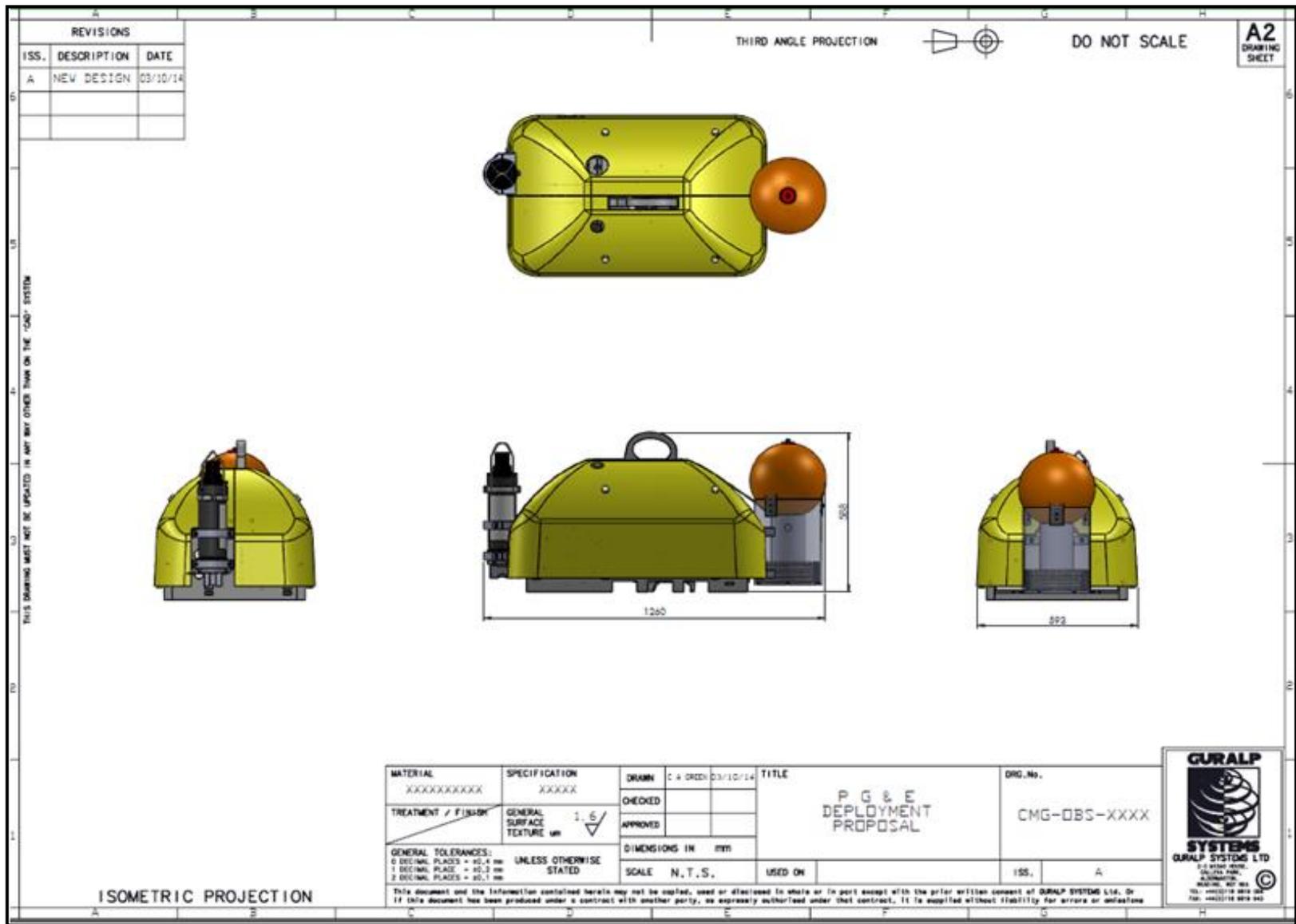


Figure 2. AOBS Unit with Release System

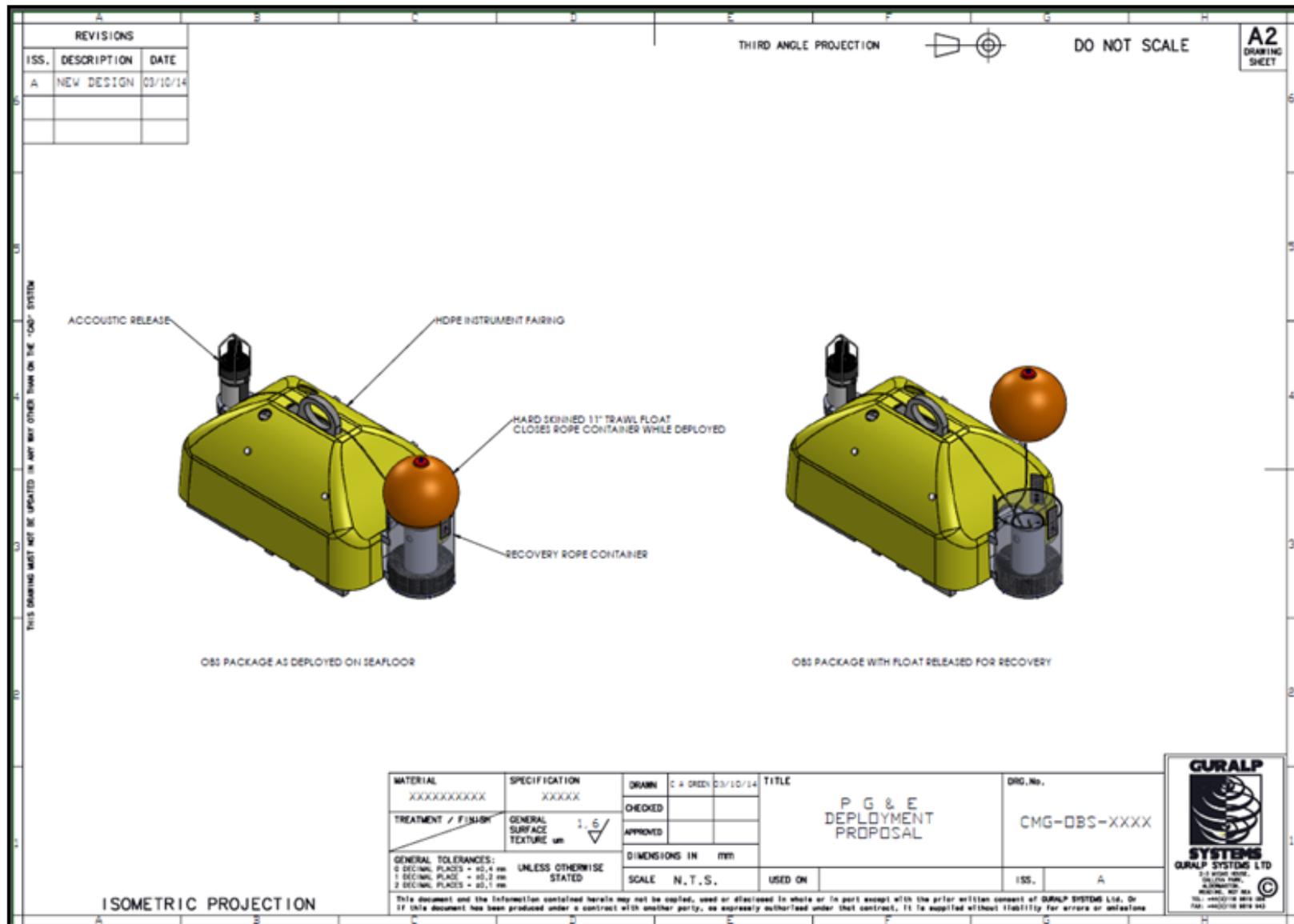


Figure 3. A OBS Unit Showing Trawl Float Release

## 3.0 ENVIRONMENTAL ASSESSMENT

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1 The following comparative analysis was undertaken to analyze whether the revised Point  
2 Buchon Ocean Bottom Seismometer Project (Project) proposed by Pacific Gas and  
3 Electric Company (PG&E) would have any significant environmental impacts that were  
4 not addressed in the Mitigated Negative Declaration (MND) adopted by the California  
5 State Lands Commission (CSLC) in 2012 for the Project. The comparative analysis (1)  
6 discusses whether impacts are increased, decreased, or unchanged from the conclusions  
7 discussed in the MND, and (2) addresses whether any changes to mitigation measures  
8 are required. The MND and this Addendum found no impacts to occur to the following  
9 environmental issue areas: Agriculture and Forestry Resources, Mineral Resources, and  
10 Population and Housing; therefore, they are not discussed further in this Addendum.

### 11 3.1 AESTHETICS

12 As with the original Project, all offshore operations would occur during daytime hours, and  
13 the revised Project would not result in an increase in offshore nighttime lighting.  
14 Therefore, no new impacts have been identified and no new mitigation measures are  
15 required.

### 16 3.2 AIR QUALITY

17 The recovery of the long-term ocean bottom seismometer (OBS) units and associated  
18 power/data cable was completed in accordance with the requirements outlined in the  
19 original Project approvals. No impacts to air quality resulted beyond those identified in the  
20 original MND.

21 Air quality emissions associated with the revised Project may be different than those  
22 analyzed in the previously adopted MND. During retrieval and redeployment of the four  
23 existing Autonomous Ocean Bottom Seismometers (AOBSs), the revised Project would  
24 generate emissions via vessel trips to and from the offshore Project site. Onshore,  
25 emissions would be generated by vehicles used by workers/crew members commuting  
26 to and from the local harbor where the Project vessel would be docked.

27 The M/V *Surveyor*, which would be used for retrieval and redeployment activities, is  
28 similar to the vessel analyzed in the MND, but with a greater horsepower capability. The  
29 increased horsepower would result in greater air emissions; however, no onshore work  
30 or diver support vessels would be required, which would effectively lower the amount of  
31 offshore emissions analyzed within the MND. Total emissions for the revised Project  
32 would likely be similar to those analyzed previously. Project mitigation measures, as  
33 required by the San Luis Obispo County Air Pollution Control District (SLOAPCD), would  
34 remain in place and would continue to mitigate emissions. As a result, no new mitigation  
35 measures would be required.

1 **3.3 BIOLOGICAL RESOURCES**

2 The long-term cabled OBS system was completely recovered from the seafloor on May  
3 19, 2015. A Remotely Operated Vehicle (ROV) was used during system recovery to  
4 ensure operations did not adversely impact sensitive hard-bottom resources along the  
5 power/data cable route. A subsequent ROV survey was conducted to document any  
6 biological impacts from these operations. As discussed in a Biological Survey Report that  
7 analyzed the results of removing the cabled OBS system (Padre 2015; Appendix A),  
8 based on information provided in the video from the ROV surveys and information  
9 collected during an associated diver survey, the presence and removal of the four long-  
10 term OBS units and approximately 11.5 miles (18.5 kilometers) of cable did not  
11 substantially impact seafloor habitats or biota over which the cable crossed. In addition,  
12 no Project-associated debris was observed within the surveyed corridor. The Biological  
13 Survey Report concluded that no adverse impacts to sensitive resources occurred during  
14 recovery operations. CSLC staff has reviewed the Report and concurs with this  
15 conclusion. Furthermore, the replacement of the OBS units with AOBS units removed the  
16 need for a power/data cable connecting the units to the shore. Therefore, any previously  
17 analyzed potential impacts to biological resources from cable placement are no longer  
18 applicable to the revised Project. One AOBS unit would continue to be located within the  
19 Point Buchon Marine Protected Area; PG&E has obtained a scientific collecting permit  
20 from the California Department of Fish and Wildlife for this unit.

21 Periodic servicing of the AOBS to transfer data and recharge batteries would not result in  
22 any changes to the location of the AOBS units. The AOBS units would remain in areas  
23 previously analyzed and identified as sedimentary habitat (see Appendix A), and no  
24 anchoring would be required during AOBS retrieval or redeployment activities. No new  
25 impacts have been identified and no new mitigation measures are required. Because the  
26 AOBS units do not require a power/data cable, the revised Project would result in a net  
27 decrease in potential impacts to biological resources.

28 **3.4 CULTURAL RESOURCES**

29 The recovery of the long-term OBS system was completed in accordance with the  
30 requirements outlined in the original Project approvals, and no impacts to cultural  
31 resources were observed. Prior to deployment of the AOBS units, the California Historical  
32 Resources Information System and the California Shipwrecks database were queried to  
33 ensure that the locations of the AOBS units would avoid areas of potentially submerged  
34 shipwrecks or cultural resources. In addition, an ROV survey was completed prior to  
35 deployment to confirm that the locations were soft-bottom habitat and clear of debris. The  
36 revised Project would continue to use the current locations of the AOBS units, and the  
37 proposed periodic servicing of the AOBS units would not result in any changes to the  
38 unit's locations. No new impacts have been identified and no new mitigation measures  
39 are required.

### 1 3.5 GEOLOGY AND SOILS

2 The recovery of the long-term OBS system was completed in accordance with the  
3 requirements outlined in the original Project approvals, and no impacts to geologic  
4 resources were observed. No impacts to hard-bottom substrate or geologic features were  
5 noted during surveys conducted following the removal of the power/data cable (see  
6 Appendix A). The revised Project would not result in significant geology or soils impacts  
7 and no new mitigation measures are required.

### 8 3.6 GREENHOUSE GAS EMISSIONS

9 The recovery of the long-term OBS units and associated power/data cable was completed  
10 in accordance with the requirements outlined in the original Project approvals. As with the  
11 original Project, the only greenhouse gas (GHG) emissions resulting from the revised  
12 Project would be from short-term vessel and personnel vehicle trip emissions during the  
13 retrieval and redeployment of the AOBS units. However, the revised Project's short-term  
14 GHG emissions would be below the SLOAPCD's threshold of 1,100 metric tons per year  
15 for non-stationary source emissions, and these vessel-related GHGs would be further  
16 reduced by the continued implementation of Project-design measures typically required  
17 by the SLOAPCD.

18 In April 2015, Governor Brown issued Executive Order B-30-15, which established a  
19 California GHG reduction target of 40 percent below 1990 levels by 2030 in order to  
20 reduce global climate change (see <https://www.gov.ca.gov/news.php?id=18938>). One  
21 effect of GHG-generated climate change is sea-level rise. According to the National  
22 Research Council (2012), the Project area is projected to experience sea-level rise  
23 between 0.4 to 2.0 feet (12 to 61 centimeters) above year 2000 baseline levels by 2050.  
24 According to the Safeguarding California Plan (California Natural Resources Agency  
25 [CNRA] 2014), which provides policy guidance for state decision-makers and is part of  
26 California's continuing efforts to reduce impacts and prepare for climate risks, higher sea  
27 levels and storm surges can result in increased coastal erosion, more frequent flooding,  
28 and increased property damage. As discussed in the Oceans and Coastal Resources and  
29 Ecosystems Sector Plan of Safeguarding California (CNRA 2016), the CSLC is committed  
30 to incorporating sea-level rise into its decision-making processes, for example, by  
31 implementing actions such as the following (CNRA 2016):

32 *Consider how to reduce the potential for adverse sea-level rise impacts to the*  
33 *resources and values protected by the Public Trust Doctrine, including impacts to*  
34 *public access, and the potential for hazard creation via damaged structures and/or*  
35 *inundation of facilities. Decisions incorporate management practices such as*  
36 *acquisition of rolling easements and boundary determinations to protect the landward*  
37 *migration of the public-private property boundary.*

1 As noted above the Project would result in short-term vessel emissions. Given the limited  
2 number of vessel trips and short-term duration of such trips, impacts related to GHG  
3 emissions associated with the Project are not expected to be significant, and the Project  
4 is not inconsistent with any current applicable plans, policies, or regulations. No new  
5 mitigation measures are required.

### 6 **3.7 HAZARDS AND HAZARDOUS MATERIALS**

7 The recovery of the long-term OBS units and associated power/data cable was completed  
8 in accordance with the requirements outlined in the original Project approvals, and no  
9 release of hazardous materials resulted from the operations.

10 As with the original Project, the potential for the release of hazards and hazardous  
11 materials would be limited to the use of a Project vessel for retrieval and redeployment  
12 activities. Although unlikely, the release of petroleum or other substances into the marine  
13 environment from the Project vessel or equipment could result in potentially significant  
14 impacts to water quality (discussed below) and marine biota, particularly avifauna and  
15 early life stage forms of fish and invertebrates. The potential for a Project-related release  
16 of diesel fuel, gasoline, or other hazardous substance would be slightly greater than that  
17 analyzed in the MND because the AOBS units would need to be serviced every 6 months  
18 or following any significant seismic event. However, this slight increase in risk would be  
19 mitigated through the implementation of existing regulations, standard offshore  
20 construction industry standards for the containment and recovery of spills (the Oil Spill  
21 Contingency Plan maintained by the survey vessel), and the implementation of the  
22 original Project's Applicant Proposed Measures. No additional mitigation measures are  
23 required.

### 24 **3.8 HYDROLOGY AND WATER QUALITY**

25 The recovery of the long-term OBS units and associated power/data cable was completed  
26 in accordance with the requirements outlined in the original Project approvals, and no  
27 impacts to water quality were observed.

28 Similar to the discussion provided above (Hazards and Hazardous Materials), the use of  
29 a Project vessel for retrieval and redeployment activities has the potential to impact ocean  
30 water quality. The potential for a Project-related release of diesel fuel, gasoline, or other  
31 hazardous substance would be slightly greater than that analyzed in the original MND  
32 because the AOBS units need to be serviced every 6 months or following any significant  
33 seismic event. However, this slight increase in risk would be mitigated through the  
34 implementation of the original Project's Applicant Proposed Measures. No additional  
35 mitigation measures are required.

1 **3.9 LAND USE AND PLANNING**

2 The revised Project would not result in any changes to the proposed land uses that were  
3 outlined in the MND. No new impacts have been identified and no new mitigation  
4 measures are required.

5 **3.10 NOISE**

6 The recovery of the long-term OBS units and associated power/data cable was completed  
7 in accordance with the requirements outlined in the original Project approvals, and no  
8 noise related impacts were observed.

9 The revised Project includes servicing four AOBS units every 6 months in order to transfer  
10 data and recharge batteries, resulting in an increase in the frequency of offshore vessel  
11 use. Project activities are estimated to require 4 days of offshore work (2 days for retrieval  
12 and 2 days for redeployment, not including approximately 2 days for servicing and data  
13 recovery onshore).

14 Due to the Project's location, the possibility exists that some individuals would be within  
15 the Project area on recreational or commercial vessels during AOBS retrieval and  
16 redeployment activities. However, noise generated by the vessel and onboard equipment  
17 would not be substantial and would not adversely affect persons on nearby boats.  
18 Therefore, this short-term noise impact would not be significant. In addition, PG&E has  
19 agreed to provide the required Local Notice to Mariners to the U.S. Coast Guard, which  
20 would specify vessel type, location, operation, and contact information prior to in-water  
21 operations so that commercial and recreational vessels are aware of Project activities and  
22 can avoid the area around the Project vessel. The increased use of a Project vessel two  
23 times per year would not result in a significant noise impact. No new mitigation measures  
24 are required.

25 **3.11 PUBLIC SERVICES**

26 The Project would not result in an increase in demands on public services. No new  
27 impacts have been identified and no new mitigation measures are required.

28 **3.12 RECREATION**

29 The recovery of the long-term OBS units and associated power/data cable was completed  
30 in accordance with the requirements outlined in the original Project approvals, and no  
31 impacts to recreational resources were observed.

32 The revised Project includes servicing the AOBS units every 6 months in order to transfer  
33 data and recharge batteries, resulting in an increase in the frequency of offshore vessel  
34 use. However, fewer vessels would be required to complete these work activities. During

1 offshore vessel activities, for safety purposes, recreational boaters would not be allowed  
2 within the immediate retrieval or redeployment area. However, because Project activities  
3 are expected to only require an additional 4 days of survey vessel work (2 days for  
4 retrieval and 2 days for redeployment, not including approximately 2 days for servicing  
5 and data recovery onshore) every 6 months, in addition to the fact that Project work areas  
6 are small (a work radius of approximately 50 meters [164 feet) and limited to the area  
7 immediately surrounding the Project vessel, this would not cause a significant increase in  
8 recreational restrictions. Furthermore, the AOBS units would be located within areas of  
9 sedimentary seafloor habitat, and recreational activities such as fishing and diving are  
10 more common in areas of rocky substrate. As a result, the increase in potential impacts  
11 to recreational resources would be minimal. No new mitigation measures are required.

### 12 **3.13 COMMERCIAL AND RECREATIONAL FISHERIES**

13 The recovery of the long-term OBS units and associated power/data cable was completed  
14 in accordance with the requirements outlined in the original Project approvals, and no  
15 impacts to commercial and recreational fisheries resources were observed.

16 The revised Project would cause short-term impacts to recreational and commercial  
17 fishing operations within the immediate area of the Project vessel during AOBS retrieval  
18 and redeployment activities. These impacts would be temporary (less than 2 hours at  
19 each AOBS recovery and redeployment site) and less than significant due to the short  
20 duration and small preclusion area around the Project vessel. In addition, the AOBS units  
21 are placed outside of the trawling limits; therefore, the AOBS units will not result in any  
22 “snag” hazards to commercial fishing gear. A Local Notice to Mariners would be submitted  
23 to the U. S. Coast Guard and all applicable agencies would be notified prior to the start  
24 of the Project. As a result, the increase in potential impacts to commercial and recreational  
25 fisheries would be minimal. No new mitigation measures are required.

### 26 **3.14 TRANSPORTATION/TRAFFIC**

27 The recovery of the long-term OBS units and associated power/data cable was completed  
28 in accordance with the requirements outlined in the original Project approvals, and no  
29 adverse impacts to location vessel operations were observed.

30 The revised Project includes servicing the AOBS units every 6 months in order to transfer  
31 data and recharge batteries, resulting in an increase in the frequency of offshore vessel  
32 use. During offshore vessel activities, other vessels would not be allowed within the  
33 immediate retrieval or redeployment area for safety purposes, thus somewhat limiting  
34 offshore transportation within the immediate area. However, because Project activities  
35 are expected to only require an additional 4 days of survey vessel work (2 days for  
36 retrieval and 2 days for redeployment not including approximately 2 days for servicing  
37 and data recovery onshore) every 6 months, in addition to the fact that Project work areas  
38 are small (a work radius of approximately 50 meters [164 feet]) and limited to the area

1 immediately surrounding the survey vessel, no significant increase in transportation  
2 corridor restrictions would result.

3 Onshore, the increase in commuter traffic to and from local harbors would be minimal and  
4 limited only to the crew members necessary to staff the survey vessel and to retrieve and  
5 redeploy each AOBS unit (approximately 4 days for recovery and redeployment activities,  
6 including vessel mobilization/demobilization, and 2 days while OBS servicing and data  
7 recovery occur onshore. No new mitigation measures are required.

### 8 **3.15 UTILITIES AND SERVICE SYSTEMS**

9 The Project would not result in an increase in the demands on utilities and service  
10 systems. No new impacts have been identified and no new mitigation measures are  
11 required.

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## 4.0 DETERMINATION/ADDENDUM CONCLUSION

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1 As detailed in the analysis presented above, this Addendum to the Mitigated Negative  
2 Declaration (MND) adopted by the California State Lands Commission (CSLC) in March  
3 2012, as lead agency under the California Environmental Quality Act (CEQA), supports  
4 the conclusion that the changes to the overall Point Buchon Ocean Bottom Seismometer  
5 Project (Project) would not result in any new significant environmental effects.  
6 Specifically, the CSLC has determined, based on substantial evidence in the light of the  
7 whole record, that none of the following circumstances exists:

- 8 • Substantial changes proposed in the Project which will require major revisions of  
9 the previous MND due to the involvement of new significant environmental effects  
10 or a substantial increase in the severity of previously identified significant effects  
11 (State CEQA Guidelines, § 15162, subd. (a)(1)); or
- 12 • Substantial changes that will occur with respect to the circumstances under which  
13 the Project is undertaken which will require major revisions of the previous MND  
14 due to the involvement of new significant environmental effects or a substantial  
15 increase in the severity of previously identified significant effects (State CEQA  
16 Guidelines, § 15162, subd. (a)(2); or
- 17 • New information of substantial importance, which was not known and could not  
18 have been known with the exercise of reasonable diligence at the time the previous  
19 MND was adopted by the CSLC (State CEQA Guidelines, § 15162, subd. (a)(3).

20 The Project is consistent with State CEQA Guidelines section 15164 in that only minor  
21 changes have been made to the Project, and none of the conditions described in State  
22 CEQA Guidelines section 15162 has occurred. Therefore, the CSLC has determined that  
23 no subsequent or supplemental document is required.

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## 5.0 ADDENDUM PREPARATION SOURCES AND REFERENCES

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### 1 5.1 ADDENDUM PREPARERS

#### 2 **California State Lands Commission**

3 Kelly Keen, Environmental Scientist, Division of Environmental Planning and  
4 Management (DEPM)

5 Cynthia Herzog, Senior Environmental Scientist, DEPM

6 Eric Gillies, Assistant Chief, DEPM

7 Cy R. Oggins, Chief, DEPM

#### 8 **Padre Associates, Inc.**

9 Simon Poulter, Principal

10 Jennifer Leighton, Project Manager

11 Jennifer Klaib, Project Biologist

12 Sierra Kelso, Staff Environmental Specialist

### 13 5.2 REFERENCES

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3 D.C.
- 4 Padre Associates, Inc. 2015. PG&E Point Buchon Ocean Bottom Seismometer (OBS)  
5 Project, System Removal Biological Survey Report. Dated September 8, 2015.  
6 Completed for PG&E.

**APPENDIX A**

**PG&E Point Buchon Ocean Bottom Seismometer (OBS)  
Project, System Removal Biological Survey Report  
(September 8, 2015)**



ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

September 8, 2015  
Project No. 1102-0621

PG&E Geosciences Department  
245 Market Street  
San Francisco, California 94105

Attention: Ms. Marcia McLaren  
Senior Seismologist

Subject: PG&E Point Buchon Ocean Bottom Seismometer (OBS) Project, System Removal  
Biological Survey Report

Dear Ms. McLaren:

In accordance with the requirements of the California Coastal Commission (CCC) Coastal Development Permit (CDP) E-11-017 and conditions associated with the California State Lands Commission (CSLC)-issued lease PRC 8985.1, Padre Associates, Inc. (Padre) is pleased to submit this report for the subject Project for your subsequent submittal to the CCC and CSLC. This report summarizes the results of the post-removal biological survey of the ocean bottom seismometer (OBS) system.

## INTRODUCTION

As part of Pacific Gas and Electric Company's (PG&E) seismic safety assessment at the Diablo Canyon Power Plant (DCPP), an OBS system was installed in the nearshore waters off Pt. Buchon, San Luis Obispo County (Attachment A - Figure 1). The system was comprised of two temporary OBS units and four long-term OBS units, and approximately 11.5 miles (mi) (18.5 kilometer [km]) of 2-inch (in) (5-centimeter [cm]) diameter cable that provided power to the long-term OBS units and transmitted data to and from the shore-based facility within DCPP. The original temporary OBS units were installed for 17 weeks and removed in November 2013. Initial installation of those units, the long-term units, and cable was completed from July 20 through July 27, 2013. Final adjustments to the system were made between November 6 and November 24, 2013, and PG&E accepted the fully-adjusted system on November 24, 2013.

On February 19, 2014, the long-term OBS system experienced initial failures with the entire system becoming inoperable on April 1, 2014, necessitating the recovery of the long-term OBS system from the seafloor to better determine the causes for the system failure and to evaluate potential repair or replacement operations. To maintain earthquake monitoring four temporary OBS units were added on November 4, 2014. Recovery operations of the long-term OBS system and maintenance and redeployment of the four temporary OBS units were initiated on May 14, 2015 and were completed on May 22, 2015.

Following completion of the recovery operation, a seafloor biological survey was conducted on May 18, 2015 and May 27 through 29, 2015 to collect data on possible impacts associated with the presence and removal of the system and to confirm that no project-associated debris remained on the seafloor. The survey area extended from the DCPP seawater intake embayment seaward along the cable route which was entirely within the State of California 3-mile jurisdictional line between Point Buchon (to the north) to the DCPP intake

embayment north of Point San Luis. Portions of the survey area were located within the Point Buchon Marine Protected Area.

Tenera Environmental (Tenera) was retained by PG&E to complete a diver survey of the nearshore segment from the shallow subtidal water depths within the DCPD embayment to the 76 foot (ft) (23 meter [m]) isobath. Padre was retained to complete the deeper water segments of the cable corridor. The following discusses the results of the two surveys and provides the aforementioned assessment of project-associated impacts.

## **METHODS AND EQUIPMENT**

The survey of the nearshore segment (between the offshore end of the cable conduit within the DCPD intake embayment and the 76 ft [23 m]) isobath was completed on May 18, 2015 by Tenera divers using SCUBA. Divers used a Garmin ETrex Legend GPS unit to collect latitude/longitude coordinates along the cable alignment. The unit was attached to a surface float with a tether line which was held taught to assure accurate location data. A Sony Handycam Model HDR-CX550V digital video camera inside a Light and Motion Bluefin 550 waterproof housing was used to document habitats and biota along the cable route.

The deeper water segment (greater than 76 ft) was completed by a remotely operated vehicle (ROV) survey over a three-day period (May 27 through 29, 2015) and utilized a Phantom 2+2 ROV, owned and operated by Aqueos Corporation under subcontract to Padre. The ROV was equipped with a scanning sonar and video cameras. The M/V *Surveyor*, a 100 ft [31m]-long, steel-hulled vessel owned and operated by Maritime Logistics, was the ROV support vessel. ROV and vessel positioning was provided by Fugro Pelagos, Inc. The ROV survey was initiated at the approximate termination point of the Tenera dive survey and progressed to the west and north (Attachment A, Figure 1).

Padre Marine biologist Ms. Jennifer Klaib monitored ROV images in real time while onboard the survey vessel. Additionally, video images collected during the two surveys were reviewed by Mr. Ray de Wit, Padre Senior Marine Scientist. The discussion and impact assessment provided below are based upon those reviews.

## **OBSERVATIONS**

### **Nearshore**

The nearshore surveyed was approximately 1,837 ft- (560 m-) long, from the 76 ft (23 m) isobath to where the cable entered the PVC conduit along the shoreline of the DCPD intake embayment (Attachment A - Figure 2). The results of that survey indicated that seafloor habitats within the survey area consisted of sand flat, most common immediately seaward of the intake embayment; a mixture of bedrock, boulder, cobble, gravel, sand, common with the intake embayment; and bedrock reefs and boulders where the cable approaches the intertidal revetment and comes onshore.

A tube-building worm (*Diopatra* sp.) is common within the sedimentary seafloor habitat within this segment; also present is the bat star (*Patiria miniata*). Mixed substrate (bedrock, boulder, cobble, gravel, sand) habitat supported several algal species, including the sea palm (*Pterogophora californica*), a brown strap kelp (*Laminaria setchellii*), and occasional giant kelp

(*Macrocystis pyrifera*). Epifauna associated with rocky substrate included at least two species of sea stars (*Pisaster giganteus* and *P. ochraceus*), and ornate tube worms (*Diopatra ornata*).

There were no indications of habitats or biota having been impacted from the cable removal within the nearshore area. The cable remained relatively close to the as-built route and there were no observations of overturned rocks, damaged kelp (other than kelp attached to the cable itself), or injured or dislodged invertebrates. No remnant "trail" of the cable (depressions within the sediment) was observed, however divers did note a "furrow" through the *Diopatra* beds in one area where the sand flat transitioned into the mixed substrate; video of this furrow was recorded. No cable-associated impacts within the mixed substrate of bedrock and boulders were observed and no project-associated debris was observed in this segment.

### Offshore

The ROV survey was initiated at the 100 ft (30 m) isobath. Approximately 11 hours of video was recorded within this segment (depth range 100 to 345 ft [30 and 105 m]) (Attachment A - Figure 3). Based on navigational post-plots, approximately 925 ft (282 m) of the cable was not observed by diver or ROV surveys. The 925 ft (282 m) segment was between the inshore most point of the ROV survey and the offshore terminus of the Tenera diver survey. The segment was within sedimentary habitat, and no debris, rock or other high-relief objects were observed on the scanning sonar image screen.

**100 FT ISOBATH TO LONG-TERM OBS-4 LOCATION.** Seafloor habitats within this segment comprised both sedimentary (silty clay to sand) and solid (boulder fields and isolated low to moderate relief [1 to 8 ft- [0.3 to 2.4 m-] high) reefs. One to 6 in-(2.5 to 15 cm-) high north-south oriented sand waves were present within the more coarse sediments.

The lower-relief rock habitat within this segment was covered with a thin veneer of sediment and was relatively depauperate of epibiota, although higher-relief features did support the plumose anemone (*Metridium giganteus*). Other rock-associated epibiota included solitary corals, gorgonian coral (i.e., *Muricea* sp.), and unidentified hydroids. Juvenile and adult rockfish were present, but not common, around those rock features. Common biota observed within the sedimentary habitats included the bat star (*Patiria miniata*) and two species of sea pen (*Stylatula elongata* and *Acanthoptilum* sp.). An unidentified burrowing anemone and a tube worm (*Diopatra ornata*) were also present within the sedimentary habitat.

No scraping or abrasion on the rock substrates, or depressions or trenching within the sedimentary substrates were observed within this segment. No project-associated debris was observed in this segment.

**LONG-TERM OBS-4 LOCATION TO LONG-TERM OBS-3 LOCATION.** Seafloor habitats within this segment were both sedimentary (silty clay) and solid, the latter comprising low to moderate relief (1 to 8 ft- [0.3 to 2.4 m-] high) reefs with boulders. No coarse sedimentary habitat or sand waves were observed within this segment.

Rock habitat supported an epibiota similar to that described above; however, rock substrate in water depths of 250 ft (76 m) or more supported the crinoid (*Florometra* sp.) Rockfish, including blue rockfish (*Sebastes mystinus*), which were present around the rock reefs within this segment, but were not common. Characteristic sediment-associated macroepibiota

included the two aforementioned sea pen species and the plumose sea pen (*Ptilosarcus gurneyi*). The multi-armed sunstar (*Solaster* sp.) and the grey tectrbranch (*Pleurobranchus* sp.) were present but not abundant.

No scraping or abrasion on the rock substrates, nor depressions, or trenching within the sedimentary substrates were observed within this segment. No project-associated debris was observed in this segment.

**LONG-TERM OBS-3 LOCATION TO LONG-TERM OBS-2 LOCATION.** Fine sediments characterize the seafloor habitat at the long-term OBS-2 location and along the 3.0 mi - (4.5 km) long cable route between the two units; no rock habitat was observed within this area. Infauna and macroepibiota observed within this cable segment was similar to that discussed above, with sea pens (particularly *Acanthoptilum* sp. and *Stylatula elongata*) and unidentified octopi being most common. Fish observed on and around the sedimentary seafloor included both long and short-spine combfish (*Zaniolepis latipinnis* and *Z. frenata*, respectively), and unidentified flatfish.

No depressions, or trenching within the sedimentary substrates were observed in this segment, and no project-associated debris was observed in this segment.

**LONG-TERM OBS-2 LOCATION TO LONG-TERM OBS-1 LOCATION.** The seafloor at the long-term OBS-1 location and along 2.1 mi- (3.4 km-) long corridor between the two units was sedimentary, comprising fine-grain sediments; no coarse-grain sediments or rock features were observed within this segment. The epibiota associated with the sedimentary habitat was similar to that discussed above; however, Dungeness crabs (*Cancer magister*) were more common here than in deeper water areas.

A depression at the long-term OBS-1 location was the only obvious seafloor alteration observed within this segment. That depression is estimated to be approximately six inches (in) (five centimeters [cm]) deep and approximately two feet (0.6 m) in diameter and had some shell hash. No other depressions, or trenching within the sedimentary substrates were observed in this segment, and no project-associated debris was observed within this segment.

## **ASSESSMENT OF IMPACTS**

Based on the information provided in the video from the ROV survey and from that collected during Tenera's diver survey, the presence and removal of the OBS system appears to have resulted in no substantial impacts to either the seafloor habitats or biota over which the cable crossed. The four long-term OBS units, and approximately 11.5 mi (18.5 km) of cable were successfully removed and no project-associated debris was observed within the surveyed corridor.

A depression at the former long-term OBS-1 location and "furrow" through the *Diopatra* bed in the nearshore area were the only obvious seafloor alteration observed during both surveys. This depression and furrow is expected to "fill in" through natural sedimentation from the surrounding silty sediments and the area would be expected to support a fauna similar to that observed within these water depths within the project area. Other depressions in the deeper-water silty sedimentary substrate appear to be bioturbations (disturbances caused

biota). Neither scraping nor abrasion on the rock substrates or trenching within the sedimentary substrates was observed.

In summary, and based on the aforementioned data sources, no substantial OBS cable-associated negative effects to the seafloor habitats or associated biota were observed. The OBS-associated depression is not considered a significant impact and is expected to eventually fill with the natural sediments within the area and the “furrow” is expected to be a short-term feature and those sediments should be repopulated with epibiota similar to that of the surrounding area. If you should have any questions regarding the above information and/or require additional information, please contact me at (805) 786-2650, ext. 30 or Mr. Simon Poulter at (805) 683-1233, ext. 4.

Sincerely,

PADRE ASSOCIATES, INC.



Jennifer Klaib  
Marine Biologist



Simon A. Poulter  
Manager, Environmental Sciences Group

Attachments: Attachment A - Figures

c: Kris Vardas (PG&E)

**ATTACHMENT A  
FIGURES**

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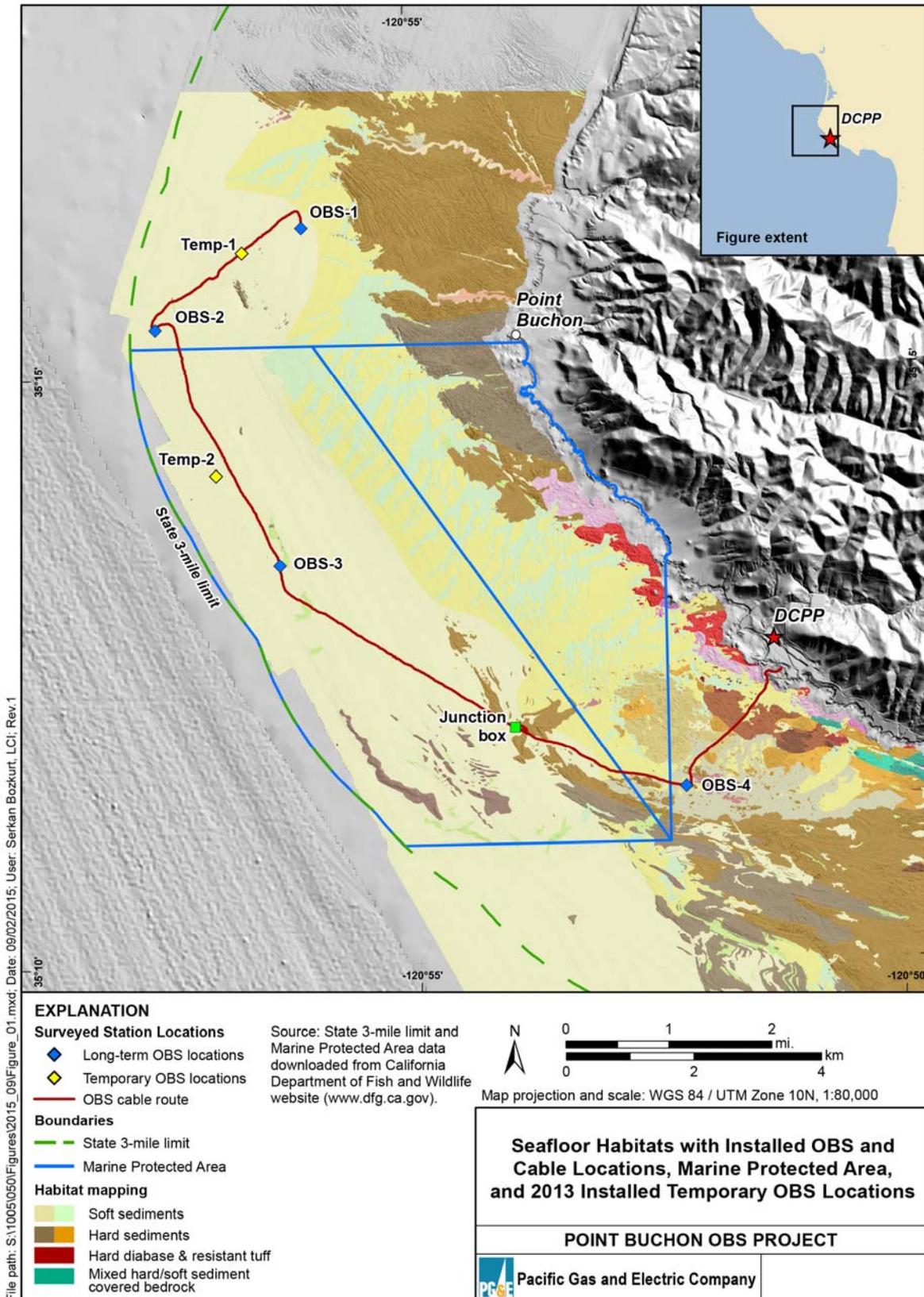


Figure 1. Region and Site Seafloor Habitats with Installed OBS and Cable Locations

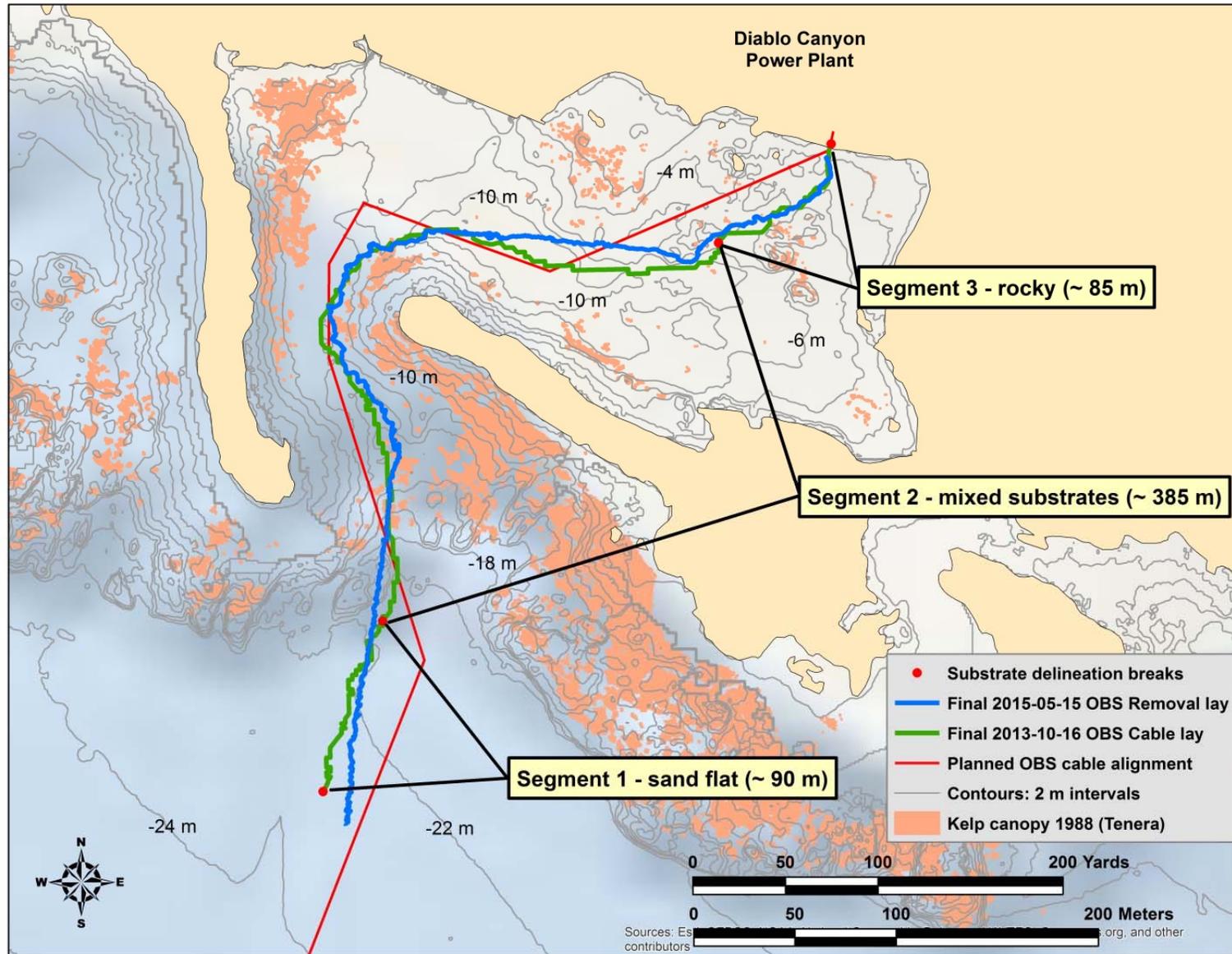
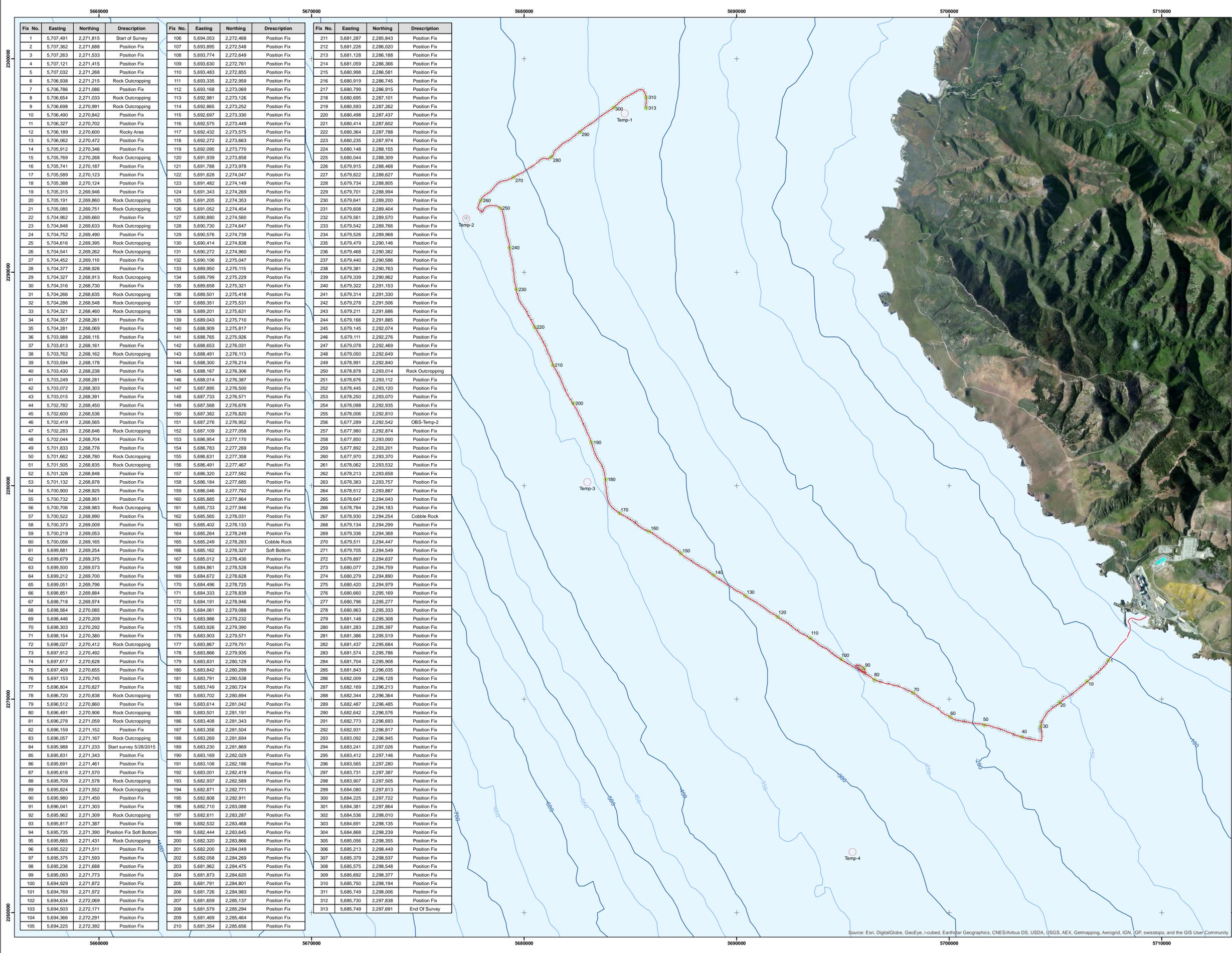


Figure 2. Diver Survey Location



**Legend**

- OBS Temporary Locations
- ROV Position Fix with ID (Post Cable Recovery)
- ROV Position Fix (Post Cable Recovery)
- Cable As-built (Pre Cable Recovery)

**Bathymetry Contours**

- Major Contours, Contour Interval = 100 Feet
- Minor Contours, Contour Interval = 50 Feet

- NOTES:**
1. Surface positioning achieved using a STARFIX II DGPS positioning system integrated with Hypack navigation package.
  2. Subsurface positioning was achieved using TrackPoint II USBL acoustic positioning system integrated with the surface navigation system.
  3. Bathymetry contours are in feet and referenced to Mean Lower Low Water (MLLW).
  4. Survey was conducted onboard the MV Surveyor from May 13-29, 2015.

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**GEODETTIC INFORMATION**

DATUM: NAD83  
 PROJECTION: California Coordinate System

ZONE: Zone 5  
 UNITS: U.S. Survey Feet



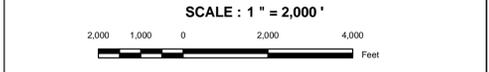
**FUGRO** FUGRO PELAGOS, INC.  
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 Tel: (805) 650-7000  
 Fax: (805) 650-7010  
 www.fugro-pelagos.com

**padre**  
 associates, inc.  
 ENGINEERS, GEOLOGISTS &  
 ENVIRONMENTAL SCIENTISTS

**PG&E**

**FIGURE 3. BIOLOGICAL ROV SURVEY FOR PERMANENT OBS SYSTEM RECOVERY**

**OFFSHORE POINT BUCHON, CA  
 MAY 2015**



NO.	DATE	DESCRIPTION	DRAWN	CHKD	APPR
1	May 2015	Biological ROV Survey	AT	CP	CP

JOB NUMBER: 23.00007130 CHART NO.: 1

N:\Projects\2015\2015\_0519\_700\_Pelagos\_Cable\_Recovery\Output\2015\_05\_19\_Pelagos\_Cable\_Recovery\_Fig3.mxd, 2/15/2015 10:45:11 AM

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, GP, swisstopo, and the GIS User Community