



31 July 2019

Mr. Richard Greenwood
Statewide Geophysical Survey Coordinator
California States Lands Commission
Mineral Resources Management Division
200 Oceangate 121h Floor
Long Beach, CA 90802-4331

Subject: Proposed Geophysical Survey Huntington Harbour Buried Pipeline Survey, Seal Beach, CA

Dear Mr. Greenwood:

MBC Aquatic Sciences (MBC) will conduct a single beam bathymetry and sub-bottom profile to determine the buried depth of parallel water and sewer pipelines which traverse two channels within Huntington Harbour in Seal Beach, CA (Lat: 33.729200 N, Long: -118.08220° W) The survey is scheduled to take place between August 21-22, weather depending, during daylight hours. Per the lease agreement, the survey must be completed by August 28. The survey is scheduled to take between one and two days to complete, and a trained marine mammal observer will be onboard during the duration of the survey. Using the MBC-owned research vessel *Scorpaena*, the survey will be conducted in a perpendicular-crossing fashion along the pipeline routes. Each of 12 tracklines approximately 200 feet in length and spaced about 30 feet apart. The proposed survey will utilize a Cee Hydrosystems Celescope 100 Single Beam Sonar and an EdgeTech 3200 with SB216S towfish. The survey will be conducted under MBC's California State Lands Commission Geophysical Survey Permit No. PRC - 9306. Please find the required documentation pertaining to this notification included.

Cordially,

MBC Aquatic Sciences

A handwritten signature in blue ink, appearing to read "Robert Moore", is written in a cursive style.

Robert Moore
Senior Scientist
Enclosure

EXHIBIT F

PRESURVEY NOTIFICATION FORM

Applicant/Permittee's Mailing Address
MBC Aquatic Sciences
3000 Redhill Ave
Costa Mesa, CA 92626

Jurisdiction: Federal _____ State X Both _____
If State: Permit #PRC 9306 _____
Region: I _____
Area: Huntington Harbour, Ca _____

Date: 31 July 2019

GEOPHYSICAL SURVEY PERMIT

Check one: X New survey _____ Time extension of a previous survey _____

MBC (Applicant/Permittee) will conduct a geophysical survey offshore California in the survey area outlined on the accompanying navigation chart segment. If you foresee potential interference with commercial fishing or other activities, please contact the person(s) listed below:

FEDERAL WATERS (outside 3 nautical miles)

- 1) Applicant's representative
- 2) Federal representative (e.g., Bureau of Ocean Energy Management [BOEM] or National Science Foundation [NSF])

NOTE: Any comments regarding potential conflicts in Federal waters must be received by the Applicant's Representative and lead Federal agency within ten (10) days of the receipt of this notice.

STATE WATERS (Inside 3 nautical miles)

- 1) Permittee's representative
- 2) CSLC representative

NOTE: Any comments regarding potential conflicts in State waters should be received as soon as possible by the Permittee's representative, no more than fifteen (15) days after the receipt of this notice.

1. Expected Date of Operation August 21-22 2019 weather/tide dependent, survey should only take 1 day
2. Hours of Operation 07:00 -18:00 hours (daylight hours)
3. Vessel Name SCORPAENA (singlebeam sonar and sub-bottom profiler)
4. Vessel Official Number CF 6074 TP
5. Vessel Radio Call Sign N/A - No longer required by Feds
6. Vessel Captain's Name James Sloan
7. Vessel will monitor Radio Channel(s) 16
8. Vessel Navigation System Differential GPS

9. Equipment to be used Ceescoppe 100 Single beam Echosounder (SBE); EdgeTech 3200 Sub-bottom profiler
- a. Frequency (Hz, kHz) SBE = 200kHz; Sub-bottom Profiler (SBP) 2-16 kHz
 - b. Source level (dB re 1 μ Pa at 1 meter (m) [root mean square (rms)]) SBE - 216; SBP - 201
 - c. Number of beams, across track beamwidth, and along track beamwidth SBE: - 1 beam, 9 deg
9 deg @ 200KHz; SBP - 1, up to 20 deg @ 2-12 KHz
 - d. Pulse rate and length SBE 20 Hz & 150 μ sec ; SBP - 2-15 kHz & 20 msec
 - e. Rise time n/a
 - f. Estimated distances to the 190 dB, 180 dB, and 160 dB re 1 μ Pa (rms) isopleths SBE - 20 50 220 respectively; SBP 6, 10, 130 respectively
 - g. Deployment depth 1 -2 meters (m)
 - h. Tow speed 2 - 3 knots
 - i. Approximate length of cable tow less than 10 m

Applicant's Representative:
MBC Aquatic Sciences
3000 Redhill Ave
Costa Mesa, CA 92626
Robert Moore, Senior Scientist
rmoore@mbcaquatic.com Tel: 714-850-4830

California State Lands Representative
 Richard B. Greenwood
 Statewide Geophysical Coordinator
 200 Oceangate, 12th Floor
 Long Beach, CA 90802-4331
 (562) 590-5201

BOEM Representative
 Joan Barminski
 Regional Supervisor
 Office of Strategic Resources
 770 Paseo Camarillo
 Camarillo, CA 93010
 (805) 389-7585

Other Federal Representative (if not BOEM):
Not Applicable

EXHIBIT G

California State Lands Commission Presurvey Notice Requirements for Permittees to Conduct Geophysical Survey Activities

All parts of the Presurvey Notice must be adequately filled out and submitted to the CSLC staff a minimum of twenty-one (21) calendar days prior to the proposed survey date to ensure adequate review and approval time for CSLC staff. Note that one or more of the items may require the Permittee to plan well in advance in order to obtain the necessary documentation prior to the Notice due date (e.g., permits from other State or Federal entities).

Please use the boxes below to verify that all the required documents are included in the Presurvey Notice. If "No" is checked for any item, please provide an explanation in the space provided. If additional space is needed, please attach separate pages.

Yes	No	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Geophysical Survey Permit Exhibit F
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Survey Location (including a full-sized navigation chart and GPS coordinates for each proposed track line and turning point) Explanation: <u>Provided</u>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Permit(s) or Authorization from other Federal or State agencies (if applicable) Explanation: <u>No Federal agencies or other State agencies are involved.</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	21-Day Written Notice of Survey Operations to Statewide Geophysical Coordinator/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	U.S. Coast Guard Local Notice to Mariners/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Harbormaster and Dive Shop Notifications Explanation: <u>Provided</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Marine Wildlife Contingency Plan Explanation: <u>Provided</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Oil Spill Contingency Plan Explanation: <u>On File</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Verification of California Air Resources Board's Tier 2-Certified Engine Requirement Explanation: <u>Provided</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Verification of Equipment Service and/or Maintenance (must verify sound output) Explanation: <u>Provided</u>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Permit(s) or Authorization from California Department of Fish and Wildlife for surveys in or affecting Marine Protected Area(s) (if applicable) Explanation: <u>Survey area is not and does not affect Marine Protected Areas</u>

NOTE: CSLC staff will also require verification that current biological information was obtained and transmitted as outlined in Section 5 of this permit.

Marine Wildlife Contingency Plan for Huntington Harbour Buried Pipeline Survey



August 13, 2019

PRC 9306 - Singlebeam Sonar and Sub-bottom Profiler Survey for
Huntington Harbour Pipeline Project.



MBC Aquatic Sciences

Costa Mesa, California

Contents

SECTION I. INTRODUCTION	2
SECTION II. SURVEY AND EQUIPMENT DESCRIPTIONS	2
Vessel Description	4
Sonar Descriptions	4
SECTION III. SPILL CONTINGENCY PLAN	9
SECTION IV. MARINE WILDLIFE CONTINGENCY PLAN	9
Relevant Regulations	9
Sensitive Species Summaries.....	10
Marine Biological Resources Protection.....	12
Monitoring Plan.....	13
Role of Marine Wildlife Monitors	13
SECTION V. COMMUNICATION PLAN	14
Pre-Survey Notifications	15
Monitoring Report	16
SECTION VI. SURVEY PROTOCOLS.....	16
Marine Protected Areas and Pinniped Haul Out Sites.....	16
Fishing Gear Clearance	16
Survey Monitoring and Mitigation Measures	16
Observation Recording	17
Collision Response	17
BIBLIOGRAPHY.....	18

Appendix 1. Resumes for Marine Wildlife Monitors

Appendix 2. Data Collection Forms for Marine Wildlife Monitors

**Appendix 3. Marine Mammal & Reptile Collision Reporting Instructions &
Data Form**

Appendix 4. Notice to Mariners and Other Notifications

SECTION I. INTRODUCTION

MBC Aquatic Sciences (MBC) will be conducting a singlebeam sonar and sub-bottom profile survey (survey) along fourteen (14) survey lines oriented parallel to the shoreline in two locations within Huntington Harbor, Seal Beach, CA. the purpose of the survey is to establish the buried depth of two pipelines, water and sewer, which cross under the navigational channels in two locations (Figure 1).

Prior to conducting the survey, MBC will notify the California State Lands Commission, publish a notice-to-mariners with the U.S. Coast Guard, and send e-mail notifications to all local marina, harbors, and dive shops.

SECTION II. SURVEY AND EQUIPMENT DESCRIPTIONS

MBC will conduct the survey using the survey vessel (SV) SCORPAENA which will slowly transit at 5 knots or less along twelve (12) pre-programmed survey lines oriented parallel to the harbor shoreline (Figure 2). Horizontal coordinates for the twelve survey lines are provided in Table 1 in decimal degrees latitude and longitude (NAD 83).

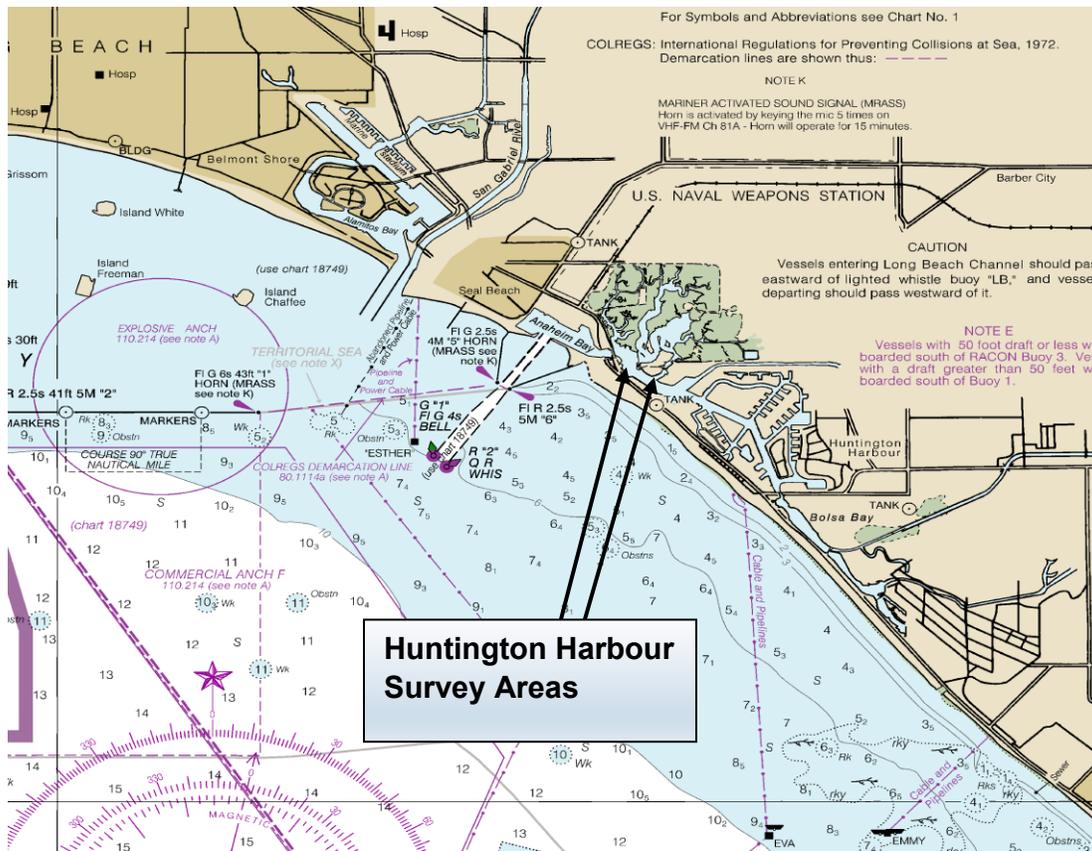


Figure 1: Nautical chart 18746 showing survey areas, Huntington Harbor, Seal Beach, CA.

Marine Wildlife Contingency Plan for Huntington Harbour Buried Pipeline Survey



Figure 2: Huntington Harbour showing 12 pre-programmed survey lines.

Table 1: Horizontal Coordinates for Planned survey track lines, in feet using the California State Coordinate System, Zone 5 (NAD83) and Latitude/Longitude (NAD83).

Trackline	Coordinates (Decimal Degrees, NAD 83)			
	Start		Stop	
1 (N S)	33.7290	-118.0827	33.7284	-118.0823
2 (N S)	33.7291	-118.0825	33.7284	-118.0822
3 (N S)	33.7291	-118.0823	33.7285	-118.0820
4 (N S)	33.7292	-118.0822	33.7285	-118.0819
5 (N S)	33.7292	-118.0820	33.7285	-118.0817
6 (N S)	33.7292	-118.0819	33.7286	-118.0815
7 (N S)	33.7293	-118.0817	33.7286	-118.0814
8 (N S)	33.7293	-118.0815	33.7287	-118.0812
9 (N S)	33.7294	-118.0814	33.7287	-118.0811
10 (E W)	33.7285	-118.0783	33.7281	-118.0791
11 (E W)	33.7284	-118.0782	33.7280	-118.0789
12 (E W)	33.7283	-118.0781	33.7279	-118.0788

Tracks 1 - 9 are in the main channel;. Tracks 10 - 12 are in Sunset Channel

Vessel Description

The SV SCORPAENA is a 26' mono hull vessel built by Davis Marine in 2010. The SCORPAENA is powered by a Volvo Penta AD41 inboard diesel engine with direct injection, turbocharging, and aftercooler that minimize noxious exhaust emissions and has 130 gallons of fuel capacity and uses approximately 2.0 gallons per hour at survey speed. The engine is Tier 2 certified by the International Maritime Organization (IMO) and the U.S. Environmental Protection Agency (EPA). The SV SCORPAENA cannot exceed the daily NOx emissions because the vessel only holds 130-gallons of fuel and the anticipated maximum fuel consumption will be less than 30 gallons. The CSLC has previously allowed marine geophysical surveys from vessels that have an identical Volvo Penta AD41 engine.



Survey Vessel SCORPAENA

Sonar Descriptions

The sonar equipment used during the survey is low energy. The sonar equipment has been utilized on surveys within the last six months and has performed to the manufacturer's specifications. Once on site and prior to deployment in the water, the equipment undergoes a visual inspection to make sure all connections are secure and there is no damage to any cables/connections or equipment. After a physical check of the equipment, the sonar is powered on deck and checked to make sure that everything is in working order. The manufacturer's internal system software will confirm the system is operating properly and there are no grounding, voltage or fault issues. Once all system checks are verified, the equipment is set to the minimal power settings (if applicable) and deployed. Once deployed, the equipment will be powered up slowly to obtain an optimal data set. The manufacturer's specification sheets are provided on the following pages with descriptions of the sonar equipment characteristics, followed by recent maintenance records.

Singlebeam Sonar: The fixed-mount singlebeam sonar is a Cee Hydrosystems Celescope 100 singlebeam sonar.

Sub-bottom Profiler: the towed sub-bottom profiler is an Edgetech 3200 sub-bottom profiler with a SB216S towfish.

CEESCOPE™

General Specifications

Physical	
Dimensions	30.0 x 25.0 x 13.8 cm (L x W x D) 11.81" x 9.84" x 5.43"
Display	420 x 272 touch screen colour LCD
Weight	3.65 kg (8.05 lbs)
Connectors	LEMO 1K & 2K series, Industrial RJ45

Environmental	
Operating temperature	0°C – 50°C (32°F – 122°F)
Humidity	95% non condensing
Ingress protection rating	IP67

Power	
Power consumption	7.2 watts (approx operating time 8 hours) – Crescent
Internal battery	Rechargeable high capacity NiMH battery 10Ah
Antenna voltage output	5.0 VDC
External power supply	Nominal 12.0 VDC @ 2A (9-26 VDC range)

GNSS Receiver Options	
Hemisphere Crescent L1 + MRB	± 0.6m (95% DGPS) GPS
Novatel OEMStar	± 0.5m (95% DGPS) GPS + GLONASS
Novatel OEM628 L1/L2	± 0.4m (95% DGPS) GPS + GLONASS
Novatel OEM628 L1/L2 RTK	± 0.01m (95% RTK) GPS + GLONASS

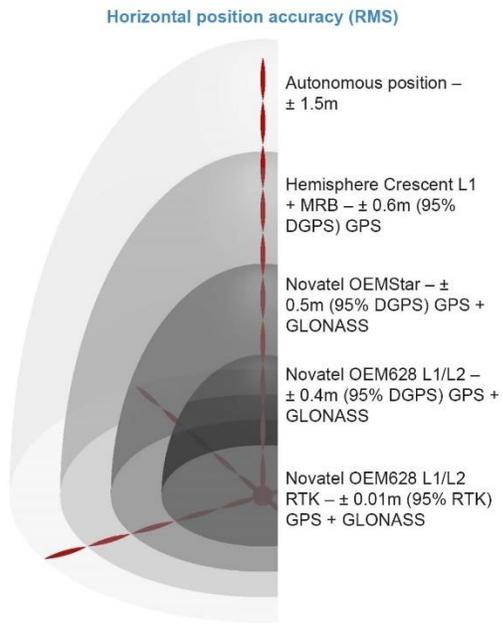
Wireless Connectivity	
Bluetooth Internal antenna	0 – 50 m range*
Wi-Fi	0 – 50 m range*
Internal UHF modem	403 – 473 MHz (RTK only)

Echo Sounder	
Mode	Automatic or Manual
Depth range**	0.2 – 200 m (0.6 – 650 ft) @ 200 kHz 0.75 – 200 m (2.5 – 650 ft) @ 33 kHz
Ping rate	1 – 20 Hertz, depth dependent
Pulse length	HF (1 – 30 cycles), LF (1 – 20 cycles)
TVG	None, LOG 10, LOG 20
Manual gain	30 – 100%
Acoustic Velocity Range	1350 – 1750m (4,429 – 5,741 ft)
Draft	0 – 10 m (1 cm increments)
Accuracy	1 cm ± 0.1% of depth
Resolution	1 cm

Transducer Options	
Standard 200 kHz	200 kHz, 9° beam width @ -3dB
Narrow Beam 200 kHz	200 kHz, 3° beam width @ -3dB
Dual 200/33 kHz	200/33 kHz, 8°/19° beam width @ -3dB

External Data Interfaces	
GPS input	NMEA 0183
RTCM input	RTCM v2.3 (DGPS) Crescent RTCM v3.0, CMR+ (RTK), OEM628
Heave input	TSS 1
Tide input	CEETIDE

* line of sight
** series dependent
- specifications are subject to change
- visit www.ceehydro.com for the complete list of specifications
- v13226



AUSTRALIA OFFICE
 CEE HydroSystems
 Unit 1, 12 Cecil Rd,
 Hornsby, Sydney
 NSW 2077 Australia
 t: +61 (0) 2 9482 5880
 f: +61 (0) 2 9987 1584
 e: sales@ceehydro.com

NORTH AMERICA OFFICE
 CEE HydroSystems USA, Inc.
 701 Palomar Airport Drive
 Suite 300, Carlsbad
 CA 92011 USA
 t: +1 760 492 4511
 f: +1 760 931 4850
 e: sales@ceehydro.com



MBC Sonar Equipment Checklist

Technician: J. Rankin

Date: 6/26/19

	Ceescop 100	EdgeTech 4125 SSS
Inspect sonar body for damage	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Inspect cables for damage	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Place body on test bath	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Power up the system	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ping system	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Record data	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Confirm good data return	<input checked="" type="checkbox"/>	<input type="checkbox"/>
HF		<input type="checkbox"/>
AE		<input type="checkbox"/>
Wash system body and cables	<input checked="" type="checkbox"/>	
System OK	<input checked="" type="radio"/> YES / NO	YES / NO

Approved for use: *J. Rankin*



3200

SUB-BOTTOM PROFILING SYSTEM

KEY SPECIFICATIONS

TOWFISH	SB-0512i	SB-216S	SB-424
Frequency Range	500 Hz–12 kHz	2-16 kHz	4-24 kHz
Vertical Resolution (depends on pulse selected)	8–20 cm	6-10 cm	4-8 cm
Penetration (typical)			
In coarse calcareous sand	20 meters	6 meters	2 meters
In clay	200 meters	80 meters	40 meters
Size			
Length	160 cm	105 cm	77 cm
Width	124 cm	67 cm	50 cm
Height	47 cm	40 cm	34 cm
Weight	190 kg	76 kg	45 kg
Maximum Operating Depth	300 meters		
TOPSIDE PROCESSOR			
Hardware	Standard 19 inch rack mount		
Operating System	Windows XP		
Display	High resolution 22 inch flat panel display		
Archive	Hard drive and/or DVD-R/W		
File Format	Native JSF or SEG-Y		
I/O	Ethernet		
Power Input	120/220 VAC		
SYSTEM OPTIONS			
Integrated depth sensor, 4 kW amplifier, USBL acoustic tracking system			



SB-0512i



SB-216S



SB-424

For more information please visit EdgeTech.com

info@EdgeTech.com | USA 1.508.291.0057

Survey Equipment Services, Inc

Edgetech Sub-Bottom Test Checklist

* 31P topside use 35m cable standard

* 3200XS topside (attach com3 if have depth sensor w/ SB-512 in blue box –no depth) use 75m cable standard

192.9.0.100 | 255.255.255.0

Engineer:..... Brandon Scott

Date:..... 190501

[SB Towfish Type | SN]:..... SB216 | 45913

[SB Topside Type | SN]:..... 3100P | 50403

LPT: 0192

1. Check for damage, missing items and report.....
2. Connect unit correctly, refer to SBF for full list of parts.....
3. Megger Cable and confirm no leakage _____ >1000, _____ >2000.....
4. Power up the system on AC with tow fish in the SES test tank.....
5. Once Discover on laptop shows "NET ON" and "GPS On"
6. Ensure that the correct Sub bottom is selected in sonar control.....
7. Ping on various power (20, 50, &100) percentage
8. Check returns by running pole under the fish.....
9. Repeat steps 3 – 7 on DC power (for 31p, +12 vdc).....
10. Power off and unplug unit. Check spares and bag cables.....
11. Clean unit, put away and generate green tag
12. File checklist in folder Edgetech Sub bottom Acceptance Tests.....

<input checked="" type="checkbox"/>

SIGNED _____ [Signature]

PASS/FAIL

For full instructions consult document: SBF

SB1C

The operation of the survey equipment may result in potential impacts to the marine environment. Potential impacts include hydrocarbon spills, harassment and acoustic effects on sensitive marine life, and ship strike. Ship strikes and harassment could occur while the survey vessel is progressing through the survey transects. Acoustic effects could occur while the survey equipment is operating.

The following marine wildlife contingency plan is provided to serve as the guidance document used during the survey in order to minimize any and all of the potential effects.

SECTION III. SPILL CONTINGENCY PLAN

A Spill Contingency Plan for MBC vessels is on file with CSLC.

SECTION IV. MARINE WILDLIFE CONTINGENCY PLAN

A Marine Wildlife Contingency Plan (MWCP) is on file with the CSLC. However, MBC will be using equipment different from that listed in our MWCP on file, so have included the following section.

Relevant Regulations

Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) prohibits the take of any marine mammal within the waters of the United States, defining “take” as: *harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal. This includes, without limitation, any of the following:*

- *The collection of dead animals, or parts thereof;*
- *the restraint or detention of a marine mammal, no matter how temporary;*
- *tagging a marine mammal;*
- *the negligent or intentional operation of an aircraft or vessel, or the doing of any other negligent or intentional act which results in disturbing or molesting a marine mammal; and*
- *feeding or attempting to feed a marine mammal in the wild.”*

The 1994 amendments to the MMPA further define harassment as "any act of pursuit, torment, or annoyance which has the potential" to: "injure a marine mammal or marine mammal stock in the wild", or "disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering." Sections 101 and 102 of the MMPA prohibit intentional killing or harassment of marine mammals but allow incidental contact during normal vessel operations.

Endangered Species Act

The portions of both the Federal and California Endangered Species Act (ESA) that pertain to geophysical surveys specifically prohibit (1) the take of organisms listed under the ESA and (2) damage to their critical habitat. Several whales and sea turtles common to California are listed under the ESA, as described in the Species Summary below.

Sensitive Species Summaries

Whales

Several species of whale are known to occur in the California State waters and are therefore potentially impacted by offshore geophysical surveys (Table 1). Except for gray, humpback and blue whales, few whale species are reasonably likely to occur within the nearshore zone where MBC surveys. Most whale species have predominant distributions well offshore of the 30-m isobath. Gray whales transit near the coast with their seasonal migrations occurring in the winter and spring. Orcas (*Orcinus orca*) are often observed in spring while the gray whales are migrating north with calves. The presence of the orca is believed to be one reason gray whales migrate so close to shore, as this minimizes the chance of encountering orca pods further offshore. Blue whales are less common than gray whales. Unlike gray whales, blue whales seasonally occur in the summer. In any regard, whales of any species are not likely to enter the protection zone (defined in the Marine Biological Resources Protection subsection).

Table 1. Great whales known to occur in California STATE WATERS and their most common proximity to the coast (habitat), known seasonality in the area, and potential for impact from MBC's potential geophysical surveys.

Whale Species	Habitat	Seasonality	Potential For Impact
Gray whale (<i>Eschrichtius robustus</i>)	Nearshore	Fall-Spring	Possible/Unlikely
Blue whale (<i>Balaenoptera musculus</i>)	Nearshore to Offshore	Summer	Possible/Unlikely
Humpback whale (<i>Megaptera novaengliae</i>)	Nearshore to Offshore	Fall-Winer	Possible/Unlikely
Sei whale (<i>B. borealis borealis</i>)	Offshore	Fall-Spring	Very Unlikely
Fin whale (<i>B. physalus</i>)	Offshore	Summer	Very Unlikely
Sperm whale (<i>Physeter macrocephalus</i>)	Far Offshore	Spring-Fall	Very Unlikely

Dolphins (various species)

Description: Several species of dolphin occur along the California coast with varying frequency. Pacific white sided (*Lagenorhynchus obliquidens*) and common dolphins (*Delphinus* spp.) are the most commonly encountered. Due to their swimming ability, potential geophysical survey activities pose little real threat to healthy individuals. All dolphins common to California are protected under the MMPA, but not the ESA.

California Sea Lion (*Zalophus californianus*)

Abundance and Description in the Area: California sea lions are the most common pinniped (seals and sea lions) in California. Sea lions are present, often in large numbers, throughout bays, harbors, and coastal waters of California. California sea lions can be easily distinguished from the other common pinniped of the area, Pacific harbor seal (*Phoca vitulina*), by the presence of an external ear flap that is present on California sea lions and absent on Pacific harbor seals. Reports of sick and injured sea lions in California may be due to malnutrition and domoic acid poisoning. The behavior of sick and malnourished sea lions can be more erratic and unpredictable, and they may be more susceptible to further injury, than their healthy counterparts. California sea lions are protected under the MMPA, but not the ESA.

Migration: California sea lions are present along the California coast year-round.

Behavior: Curious by nature, California sea lions commonly approach boats and haul out on any physical structure they can find, including docks, boats, buoys, barges, etc. California sea lions are excellent swimmers with outstanding underwater agility. Their curious nature does, however, expose them to risks. Healthy California sea lions are capable of evading MBC's geophysical survey vessel, but sick or injured individuals deserve careful scrutiny. **Pacific Harbor Seal (*Phoca vitulina*)**

Abundance and Description in the Area: Pacific harbor seals are typically less abundant than California sea lions. As their name implies, Pacific harbor seals are more commonly observed in the bays and harbors in California than along the open coast. When observed along the open coast, Pacific harbor seals are more common in the nearshore waters than offshore. Pacific harbor seals are typically smaller than California sea lions, with black or charcoal coat mottled with white patches. In addition, Pacific harbor seals lack of an ear flap.

Migration: Pacific harbor seals are present year-round in California.

Behavior: Pacific harbor seals are not as naturally curious as California sea lions, but they will approach boats seeking food. They are skilled swimmers and are capable of avoiding the geophysical survey vessel and activities. Sick or injured individuals will require greater scrutiny.

Sea Turtles (various species)

Description and Abundance in the Area: Four sea turtle species have been observed in California: green sea turtle (*Chelonia mydas*), leatherback sea turtle (*Dermochelys*

coriacea), Olive Ridley sea turtle (*Lepidochelys olivacea*) and loggerhead sea turtle (*Caretta caretta*). All are listed as either threatened or endangered under the Federal ESA. The San Gabriel River has been recently identified by the National Marine Fisheries Service (NMFS) as the site of a growing population of green sea turtles. This is in addition to a known population in San Diego Bay. Loggerheads, leatherbacks, and Olive Ridley sea turtles are uncommon in California, but they have been observed.

Migration: All sea turtles make extensive spawning migrations. Green sea turtles have been observed in both the summer and winter, with more sporadic observations of the remaining species. The Gulf of California and all along the Baja Peninsula are prominent spawning grounds for most sea turtles, but ongoing research by NMFS and academic researchers suggests some individuals may be residing in southern California.

Behavior: All sea turtles are relatively slow moving and capable of maintaining extended submerged periods. Their typically dark coloration, low profile, and swimming abilities can make them difficult to observe at a distance. This difficulty in identifying sea turtles provides for greater opportunity for accidental take during a survey. Therefore, care will be taken to monitor for their presence and once sighted, extreme caution will be used to ensure no take occurs. This includes temporarily halting all survey activities once an animal has been spotted within 130 meters (m) of the survey area, the protection zone to the 160 dB (rms) threshold listed for sub-bottom profilers in the CSLC's Data Collection Guidelines for Marine Wildlife Monitors (MWM). Survey activities will resume if the animal is observed swimming away from the survey area or if no sightings have been made for 60 minutes.

Marine Biological Resources Protection

MBC will comply with CSLC permit conditions by following five (5) marine life protection measures when conducting an offshore geophysical survey.

1. A National Marine Fisheries Service-approved MWM will be onsite whenever a geophysical survey activity is underway. A single MWM is sufficient for geophysical survey equipment that operates at ≥ 200 kHz; two monitors are required for survey equipment at < 200 kHz, with exceptions granted by CSLC.
2. A minimum 130-m protection zone radiating from the survey vessel will be monitored by the MWM for the presence of marine mammals and sea turtles during the sub-bottom profile survey; this safety zone is the larger of the two recommended distances for the different equipment types in use for this survey.
3. Geophysical surveys will not be conducted at night or within an hour of sunrise or sunset.
4. Survey activities (above and underwater) will be temporarily stopped as soon as can be safely achieved if a sea turtle enters the protection zone. Work may resume only when the animal has left the protection zone or has not been observed for 60 minutes, whichever occurs first. This policy acknowledges the ability of sea turtles to remain submerged for extended periods of time during which it may have exited the protection zone undetected.

5. Survey activities (above and underwater) will be temporarily stopped as soon as can be safely achieved for 10 minutes if a pinniped or other marine mammal or sea turtle enters the protection zone. During the 10 minutes, the animal will be assessed from a distance of 20 m (minimum) to determine its general health. Poor health will be determined if the animal exhibits erratic swimming or has visible wounds. If the animal is considered healthy, survey activities will be allowed to continue. If the animal is considered in poor health, the monitor will attempt to contact a NMFS representative for instructions. If after 30 minutes, no NMFS contact is established and the animal remains in the protection zone, the survey will be allowed to proceed. If at any point the animal leaves the protection zone, the survey will be allowed to proceed. No harassment of the animal will be allowed to occur.

Contact information for CSLC, NMFS, the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and the U.S. Coast Guard is included below. This marine monitoring plan will be submitted to the CSLC Offshore Geophysical Permit Plan Coordinator (Coordinator) for approval at least 21 days prior to the survey. In the event a survey is needed with less than 21 days' notice from the client, the Coordinator will be contacted as soon as possible.

Monitoring Plan

Role of Marine Wildlife Monitors

Six (6) members of MBC's staff were identified in the MWCP on file with CSLC as NMFS-approved MWMs:

- Robert Moore, Project Manager
- Jennifer Rankin
- Jennifer Smith
- David Schuessler
- Christina Robinson
- Amanda Ramshaw

Two of the above are no longer employees, C. Robinson and A. Ramshaw; four (4) additional members of MBC's staff have received training specified by NMFS and been approved as MWMs, including:

- Wayne Dossett
- Tate Van Duivenbode
- Shannon Eminhizer
- Lindsay Hornsby

Resumes for MBC's additional NMFS-approved MWMs are provided in Appendix 1.

As specified in MBC's OGPP, surveys utilizing equipment with an operating frequency ≥ 200 kHz (the singlebeam sonar) requires one MWM (§7.h) but notes safety zone/monitoring is not required (§7.k). However, for this survey, the sub-bottom profiler operates at lower frequencies, requiring a safety zone of 130-meter (m) radius (§7.i) and two MWMs. Due to the narrow and restricted channel locations where the survey will occur, with channel widths less than 250 m wide and easily observable prior to and during operations, and inside a small harbor with restricted access by marine wildlife, MBC proposes to use a single MWM; a petition was submitted to CSLC on July 26, 2019 for this deviation and approval received on July 31, 2019. MBC will provide the single NMFS-approved MWMs onsite during all survey activities. The

Marine Wildlife Contingency Plan for Huntington Harbour Buried Pipeline Survey

MWM will scan the 130-m protection zone encircling the vessel for the presence of protected marine animals in accordance with the permit conditions and monitoring plan detailed previously. The MWM will record data in accordance with the CSLC's Data Collection Guidelines for Marine Wildlife Monitors. Survey interruption, if any, will occur in accordance with the relevant permit conditions and as itemized in Table 2.

All sightings will be logged on the standard forms included in Appendix 2. At a minimum, a log entry will be made each hour including "no sightings" if no marine animals enter the work area during the preceding hour. If a sick or injured animal is sighted, or if a collision has occurred, the instructions presented in Appendix 3 will be followed and data form completed. MBC MWMs will report a sick or injured animal, or a collision with a marine mammal or sea turtle, to:

National Marine Fisheries Service
Justin Viezbicke
Tel: 562-506-4315

California State Lands Commission
Tel: 916-574-1938
E-mail: slc.ogpp@slc.ca.gov

The U.S. Coast Guard (USCG) will be notified if the animal poses a threat to mariners.

Table 2. Actions undertaken in response to protected marine animal encroachment into the protection zone surrounding the project site.

Marine Animal	Apparent Health	Action
Any sea turtle	Any	Stop survey until animal leaves area.
	Healthy	Stop survey for 10 minutes or until new animal leaves the area. Assess health of animal.
California sea lion or harbor seal	Injured/Sick	Stop survey until animal leaves the area or hauls out to a safe area. Contact NMFS and other responders listed in Table 2.
	Any	Stop survey until animal leaves area. Contact NMFS and other responders listed in Table 2 if animal is injured or dead.
Whale	Any	Stop survey until animal leaves area. Contact NMFS and other responders listed in Table 2 if animal is injured or dead.
Dolphin	Any	Stop survey until animal leaves area. Contact NMFS and other responders listed in Table 2 if animal is injured or dead.

SECTION V. COMMUNICATION PLAN

Table 3 lists the contacts relevant to any issues or incidents that may occur in the course of a survey. This may be updated as needed to include client contact information or additional regulatory contacts as needed.

Table 3. Contact list for marine wildlife monitoring. All project assets in the area will monitor VHF channel 13, 16, or 67.

Company	Staff/Position Name	Mobile Phone
CSLC	Richard Greenwood or Kelly Keen	916-574-1938
DFW	24-hr Hotline	800-334-2258
NMFS	Justin Viezbicke	562-506-4315
USACOE	Robert Smith	760- 683-4454
USCG	VHF Marine Radio - Channel 16	

Pre-Survey Notifications

A Notice to Mariners will be submitted to the United States Coast Guard prior to the pipeline survey. The Notice to Mariners will provide information regarding proposed activities and coordinates of the survey location. In addition, MBC will notify U.S. Naval Base, Seal Beach due to survey proximity to their facility, and the local harbor masters' office and dive shops prior to the start of survey activities. Copies of the local Notice to Mariners and announcements to local marinas and dive shops are provided in Appendix 4.

The geophysical survey notification list for the pipeline survey includes:

- Local Notice to Mariners was sent on July 26, 2019 to the Commander, 11th Coast Guard District, Building 50-2 Coast Guard Island Alameda, CA 94501-5100. E-Mail: d11Inm@uscg.mil
- Notification was sent on July 28, 2019 to Deputy Crandall (crandall@ocsd.org) of the Sunset Beach Harbor Patrol (Huntington Harbor).
- Notification was sent on July 26, 2019 to three marina's in Huntington Harbour: Peter's Landing, Sunset Aquatic Park Marina, and Huntington Harbour Yacht Club, and one marina on July 30, 2019 to Davenport Marina;
- Notification was sent on July 26, 2019 to five local dive shops: Pacific Wilderness (San Pedro), Beach Cities Scuba (Newport Beach), Ocean Gear and Beach Cities Scuba (Huntington Beach), and Beach Cities Scuba Toys (Cypress);
- Notification was sent on July 26, 2019 to the Naval Weapons station, Seal Beach.

Three days prior to the initiation of the survey, MBC will contact National Oceanic and Atmospheric Administration (NOAA) Fisheries Long Beach office staff and/or local private whale-watching operations to acquire information on the recently-observed composition and relative abundance of marine wildlife in the survey area. That information will be conveyed to the vessel crew and survey team prior to departure for the survey area.

Monitoring Report

A technical report will be prepared documenting the Project activities, a summary of observations and any encounters with marine wildlife, and subsequent avoidance actions taken during the survey. The report will be submitted to the California State Lands Commission within two weeks after completion of each field data collection.

SECTION VI. SURVEY PROTOCOLS

Marine Protected Areas and Pinniped Haul Out Sites

No marine protected areas or pinniped haul out sites or rookeries are located near the survey area.

Fishing Gear Clearance

In addition to submitting the required Notice to Mariners that will alert commercial fishers of pending survey activities, the survey vessel will traverse the proposed survey corridor to note and record the presence of deployed fishing gear. Commercial fishing is prohibited within Huntington Harbour. If fishing gear is observed, the location of fishing gear (buoys) and license number indicated on the gear will be noted, and the California Department of Fish and Wildlife (CDFW) Southern District Enforcement Office will be contacted. No survey lines will be completed within 30 m (100 ft) of any observed fishing gear. The survey crew will not remove or relocate any fishing gear; removal or relocation will only be accomplished by the owner or by an authorized CDFW agent or Sunset Beach Harbor Patrol.

The following agencies will be contacted if fishing gear is located within the survey area:

- Enforcement Dispatch Desk for the California Department of Fish and Wildlife, Southern District: 562-598-1032
- California Department of Fish and Wildlife, Marine Division: 831-649-2870
- Sunset Harbor (Huntington Harbour) Harbor Patrol: 949-723-1002

Survey Monitoring and Mitigation Measures

During the data collection efforts, the MWM will use binoculars to observe the water surface in the general survey area while located at a high vantage point onboard the survey vessel. The MWM will have the authority to halt data collecting operations if marine wildlife is observed within the 130-m safety zone, or is reacting negatively to the survey-related activities. As noted above, a petition for a single MWM was submitted to the CSLC on July 26, 2019.

The MWM will also have the authority to recommend continuation or cessation of operations during periods of limited visibility based on the observed abundance of marine wildlife. Periodic reevaluation of weather conditions and reassessment of the continuation/cessation recommendation will be completed by the MWM. With the incorporation of these measures, and additional mitigation measures listed below, the

proposed survey activities have a low potential of injury and/or disturbance to marine wildlife. The following operation-related actions will be implemented in accordance with CSLC permit requirements:

1. Survey operator shall use a “soft start” technique at the beginning of survey activities each day (or following a shutdown) to allow any marine mammal or sea turtle that may be in the Project area to leave before the sound sources reach full energy. The survey operator will initiate each piece of equipment at the lowest practical sound level, increasing the output no greater than six decibels (dB) per five-minute period;
2. During operations, if an animal's actions are observed to be “irregular” the MWM will have the authority to recommend the cessation of data collection until the animal moves out of the survey Area. If the behavior is observed, the equipment will be shut-off and will be restarted and ramped-up to full power or will not be started until the animal(s) is/are outside of the survey area;
3. The MWM will have the authority to recommend halting data collecting operations if a large concentration of diving birds/sea birds is observed in the immediate vicinity;
4. Unless the safety of the vessel or crew would be in jeopardy, avoidance measures instituted during vessel transit will also be implemented during geophysical data collection; and
5. Survey operator shall follow, to the maximum extent possible, the guidelines of Zykov (2013) as they pertain to the use of side-scan sonar, including:
 - a) Using the shortest possible pulse length; and
 - b) Lowering the pulse rate (pings per second) as much as feasible.

Observation Recording

The MWM will record observations on pre-printed forms and will photo-document observations whenever possible. The completed forms will be used as the primary data sources for the post-survey report which will be provided to the CSLC and/or other agencies, if requested.

Collision Response

The Marine Mammal Protection Act (MMPA) requires that collisions with or other survey-related impacts to marine wildlife will be reported promptly to the National Marine Fisheries Service (NMFS) Stranding Coordinator.

If a collision or impacts to marine wildlife occurs, the vessel will stop, if safe to do so. However, the vessel is not obligated to stand by and may proceed after confirming that it will not further damage the animal by doing so. The vessel will then communicate by radio or telephone all details to MBC's office in California. Upon receiving notice of collision, MBC will notify the following Federal and State agencies:

- National Marine Fisheries Service, Long Beach, CA. Attention: Justin Viezbicke Stranding Coordinator. Telephone: (562) 980-3230.

Marine Wildlife Contingency Plan for Huntington Harbour Buried Pipeline Survey

- California Department of Fish and Wildlife Los Alamitos, CA. Attention: Enforcement Dispatch Desk. Telephone: (562) 598-1032.
- California State Lands Commission, Sacramento, CA. Attention: Division of Environmental Planning and Management. Telephone: (916) 574-1938.

The vessel operator, with guidance from the MWM, must document the conditions under which the accident occurred, including the following:

- Location (latitude and longitude) of the vessel when the collision occurred;
- Date and time of collision;
- Speed and heading of the vessel at the time of collision;
- Observation conditions (e.g., wind speed and direction, swell height, visibility in miles or kilometers, and presence of rain or fog) at the time of collision;
- Species of marine wildlife contacted (if known);
- Whether the MWM was observing for marine wildlife at the time of collision; and,
- Name of vessel, vessel owner/operator (the company), and captain or officer in charge of the vessel at time of collision.

It is unlikely that the vessel will be asked to stand by until NMFS or CDFW personnel arrive; however, this will be determined by the NMFS Stranding Coordinator. According to the MMPA, the vessel operator is not allowed to aid injured marine wildlife or recover the carcass unless requested to do so by the NMFS Stranding Coordinator.

Although NMFS has primary responsibility for marine mammals in both State and Federal waters, the CDFW will also be advised that an incident has occurred in State waters affecting a protected species.

BIBLIOGRAPHY

Zykov, M. 2013. Underwater Sound Modeling of Low Energy Geophysical Equipment Operations. JASCO document 00600, Version 2.0. Technical Report by JASCO Applied Sciences for CSA Ocean Sciences Inc.

APPENDIX 1

Resumes for Marine Wildlife Monitors

WAYNE DOSSETT

EXPERIENCE SUMMARY

Over thirteen years of experience conducting environmental monitoring in southern California. Proficient in data collecting and analysis of nearshore marine surveys. Experience in benthic infauna collection and laboratory sorting, fish and invertebrate taxonomic identification, otter trawl, plankton tows, beach seines, water quality, and kelp restoration. Team leader on freshwater fish and invertebrate collection projects. Received approval as MWM from National Marine Fisheries Services in 2011.

EDUCATION

B.A. Biology: Zoology concentration, Sonoma State University, 2003.
Stream and Wetland Assessment of Mitigation Protocol training workshop, May 2008.

PROFESSIONAL HISTORY

MBC Aquatic Sciences. Senior Technician, 2011-present; Technician, 2007-2011; Associate Technician, 2006-2007; Assistant Technician, 2005-2006.

PROJECT EXPERIENCE

Marine Wildlife Monitoring. Conducted shoreline and boat-based monitoring for projects at Catalina Island, Los Angeles and Long Beach Harbors, and San Diego county monitoring construction projects to ensure no impacts to marine wildlife as a result of construction activities and associated sound produced. Observations also conducted during all on-water and NPDES monitoring.

Prima Deshecha Landfill Bioassessment Monitoring. Performed a streambed biological assessment to comply with State Water Resources Control Board General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities. Sampling and analysis followed the protocols described in the California Stream Bioassessment Procedure (CSBP) and also incorporated Surface Water Ambient Monitoring Program (SWAMP) physical habitat assessment protocols.

Santa Clara River Fish Collection. Used a variety of techniques, collected fish from the mouth of the Santa Clara River for fish tissue bioaccumulation analysis. Sampling was conducted in coordination with State Parks, the manager of the collection area. Sampling was conducted so as to minimize impacts to sensitive fish species in the river.

Calleguas Creek Watershed Monitoring. Conducted water sampling and collection of sediment, fish and mussel tissue samples for analysis of nutrients, contaminants

and toxicity in Mugu Lagoon, at the mouth of the Calleguas Creek watershed. Conducts quarterly water sampling and water quality analysis in the lagoon, coordinating with the local environmental manager to reduce the potential for harassment of sensitive species during sampling.

Northern Elephant Seal Population Demographics. Participated as a research assistant working with principle investigators documenting the length and weight of young northern elephant seals (*Mirounga angustirostris*).

San Onofre Nuclear Generating Station Environmental Monitoring. Collect ocean water samples monthly for radiological monitoring. Field leader for 316(b) entrainment and impingement monitoring study in 2006-2007. Monitoring included use of plankton tow nets, data collection, length, weight, and sexing of fish and invertebrates when applicable. Lead biologist during Fish Chase and Heat Treatments, which include identifying and enumerating fish and invertebrates returned back to the ocean.

Coastal Generating Station NPDES Monitoring Studies. Staff biologist for quarterly and biannual NPDES monitoring studies at 11 coastal generating stations from Ventura County to San Diego County. Clients include the Los Angeles Department of Water and Power, Southern California Edison Company, AES Corporation, NRG Energy, Inc., and Reliant Energy. These studies, ongoing since 1977, include water quality measurements, kelp density, sediment sample collection and analysis, intertidal and subtidal surveys, fish and macroinvertebrate trawls, fish transects, and benthic infauna and macrobiota studies. The results of all analyses and trends are presented in annual monitoring reports to the regulatory agencies.

Dredge Sampling and Stormwater Surveys. Experience in water quality monitoring and sediment chemistry sampling for dredge projects for the City of Long Beach, Port of Los Angeles, Port of Long Beach, and in the Port of San Diego for the U.S. Navy and City of San Diego. Senior technician conducting non-point source stormwater surveys collecting samples from receiving waters, end-of-pipe outfalls, and automated water samplers for the Port of Long Beach.

Los Angeles Department of Water and Power. Provides technical support as well as field sampling throughout the Eastern Sierra. Field leader for bacteria sampling at various locations along Bishop Creek, as well as sediment sampling from the Owens valley as far north as Lee Vining.

Marina del Rey Harbor Toxics TMDL Studies. During the Ambient Monitoring phase of the project (2010 to 2013), MBC assisted Brown and Caldwell (B&C) with monthly water quality monitoring; quarterly collection of sediments for chemistry analysis, sediment toxicity collection and testing; annual collection of bioaccumulation organisms; and an inventory of fish species collected within the harbor.

Eelgrass and *Caulerpa*. Conducted eelgrass (*Zostera marina*) and *Caulerpa* surveys in Queensway Bay, Long Beach Harbor, Alamitos Bay, Newport Bay, Del Mar Boat Basin (Oceanside), and San Dieguito Lagoon. Conducted mitigation eelgrass transplant of over 50 acres in Mission Bay.

TATE A. VAN DUIVENBODE

EXPERIENCE SUMMARY

Experienced in benthic infauna collection and laboratory sorting, fish and invertebrate taxonomic identification, otter trawl, plankton tows, beach seines, water quality, and eelgrass restoration Completed National Marine Fisheries Services approved training at MBC and field supervised training in 2018.

EDUCATION

B.S. Environmental Science: San Diego State University 2017

Senior Thesis Project testing the effects of seagrass densities with varied copper concentrations on grazing rates of mesograzers in San Diego Bay, California.

Camp Emerald Bay Dive Master Internship.

PROFESSIONAL HISTORY

MBC Aquatic Sciences. Assistant Technician. 2017-present.

Dive California, San Diego, CA. Sales Representative / Dive Master. 2015-2016

Malibu Divers, Malibu, CA. Intern/Dive Master. 2015

Camp Emerald Bay, Avalon, CA. Camp Counselor. Summer 2009-2013.

PROJECT EXPERIENCE

Marine Wildlife Monitoring. National Marine Fisheries Service-certified MWM monitoring construction projects Huntington Harbour and in the Port Long Beach to ensure no impacts to marine wildlife as a result of construction activities and the associated sound produced. Observations also conducted during all on-water and NPDES monitoring.

Coastal Generating Station NPDES Monitoring Studies. Staff biologist for quarterly and biannual NPDES monitoring studies at 11 coastal generating stations from Ventura County to San Diego County. Tasks include identification & quantification of fish and macroinvertebrates captured in trawls & diver video transects. Conducts observations and identifications of marine birds and mammals during field surveys.

Los Angeles Department of Water and Power. Perform fecal indicator and microbial source tracking studies in freshwater environments.

Eelgrass. Assisted in transplant of over 50 acres of eelgrass (*Zostera marina*) in Mission Bay.

SHANNON M. EMINHIZER

EXPERIENCE SUMMARY

Experienced in benthic infauna collection and laboratory sorting, fish and invertebrate taxonomic identification, and water quality monitoring. Completed National Marine Fisheries Services approved training at MBC and field supervised training in February 2019.

EDUCATION

B.S. Marine Biology, University of California Los Angeles, 2018.

Minor in Conservation Biology, University of California Los Angeles, 2018.

Relevant Coursework: Quarter at UC Berkeley Gump Research Station in Mo'orea, French Polynesia in which two research projects were conducted evaluating the effect anthropogenic stressors have on coral reef ecosystems and community ecology of degraded fringing reefs. Both projects are currently in the process of publication. 2017.

PROFESSIONAL HISTORY

MBC Aquatic Sciences. Assistant Technician. July 2018 - Present.

Los Angeles County Sanitation Districts. Student Employee. June 2017 - June 2018.

Private yacht charters. Deckhand. June 2016 – November 2016.

Hilltop Shop. Customer Service Supervisor. Fall 2014 – March 2017.

PROJECT EXPERIENCE

Marine Wildlife Observer. National Marine Fisheries Service approved marine wildlife observer. Conducted observations for construction of the Middle Harbor Project in the Port of Long Beach. Observations also conducted during all on-water and NPDES monitoring.

Coastal Generating Station NPDES Monitoring Studies. Staff biologist for quarterly and biannual NPDES monitoring studies at 11 coastal generating stations from Ventura County to San Diego County. Tasks include identification & quantification of fish and macroinvertebrates captured in trawls & diver video transects. Conducts observations and identifications of marine birds and mammals during field surveys. The results of all analyses and trends are presented in annual monitoring reports to the regulatory agencies.

Dredge Sampling and Stormwater Surveys. Staff biologist for water quality monitoring and sediment chemistry sampling for dredge projects for the City of Long Beach, Port of Los Angeles, and the Port of Long Beach. Staff biologist for non-point source stormwater surveys collecting samples from receiving waters, end-of-pipe outfalls, and automated water samplers for the Port of Long Beach.

Impingement Studies. Technician for impingement studies at coastal generating stations in Los Angeles County. Responsibilities included fish and macroinvertebrate identification, weight and length measurements, and sex determination when applicable.

Los Angeles Department of Water and Power. Provide technical support as well as field sampling throughout the Eastern Sierra bacteria sampling at various locations along Bishop Creek, Horton Creek, and Lower Pine Creek.

San Onofre Nuclear Generating Station Environmental Monitoring. Participated in field monitoring via SCUBA methods and by collecting ocean water samples monthly for radiological monitoring. Conducted field observations of environmental conditions such as sea state, presence of red tide or petroleum slicks, and monitoring for wildlife activity such as seabirds and marine mammals.

LINDSAY R. HORNSBY

EXPERIENCE SUMMARY

Experienced in benthic infauna collection and laboratory sorting, fish and invertebrate taxonomic identification, and water quality monitoring. Completed National Marine Fisheries Services approved training at MBC and field supervised training in February 2019.

EDUCATION

B.S. Aquatic Biology, University of California Santa Barbara, 2016.

A.S. Biology, Santiago Canyon College 2014

PROFESSIONAL HISTORY

MBC Aquatic Sciences. Assistant Technician, 2019.

California Department of Fish and Wildlife. Scientific Aide: Coastal Pelagic Species and Highly Migratory Species projects and Ocean Resources Enhancement and Hatchery Program.

PROJECT EXPERIENCE

Marine Wildlife Observer. National Marine Fisheries Service approved marine wildlife observer. Conducted observations for construction of the Middle Harbor Project in the Port of Long Beach. Observations also conducted during all on-water and NPDES monitoring.

Los Angeles Department of Water and Power. Perform fecal indicator and microbial source tracking studies in freshwater environments.

Aquatic Toxicity Laboratory. Experience in monitoring and maintaining aquatic toxicity tests following EPA protocols. Acute and chronic biological assessment tests were performed with *Ceriodaphnia dubia*, and *Atherinops affinis*.

Los Angeles River Survey. Captured fish, measured, weighted, tagged fish and recorded data in the field.

APPENDIX 3

Marine Mammal & Reptile Collision Reporting Instructions & Data Form

MARINE MAMMAL AND REPTILE COLLISION REPORTING

If a collision with a marine mammal or reptile occurs, the Permittee shall document the conditions under which the accident occurred, including the following:

1. Vessel location (latitude, longitude) when the collision occurred;
2. Date and time of collision;
3. Speed and heading of the vessel at the time of collision;
4. Observation conditions (e.g., wind speed and direction, swell height, visibility in miles or kilometers, and presence of rain or fog) at the time of collision;
5. Species of marine wildlife contacted (if known);
6. Whether an observer was monitoring marine wildlife at the time of collision; and
7. Name of vessel, vessel owner/operator, and captain officer in charge of the vessel at time of collision.

After a collision, the vessel shall stop, if safe to do so; however, the vessel is not obligated to stand by and may proceed after confirming that it will not further damage the animal by doing so. The vessel will then immediately communicate by radio or telephone all details to the vessel's base of operations, and shall immediately report the incident. Consistent with Marine Mammal Protection Act requirements, the vessel's base of operations or, if an onboard telephone is available, the vessel captain him/herself, will then immediately call the National Oceanic and Atmospheric Administration (NOAA) Stranding Coordinator to report the collision and follow any subsequent instructions. From the report, the Stranding Coordinator will coordinate subsequent action, including enlisting the aid of marine mammal rescue organizations, if appropriate. From the vessel's base of operations, a telephone call will be placed to the Stranding Coordinator, NOAA National Marine Fisheries Service, Southwest Region, Long Beach, to obtain instructions. Although NOAA has primary responsibility for marine mammals in both State and Federal waters, the California Department of Fish and Wildlife will also be advised that an incident has occurred in State waters affecting a protected species.

INJURED ANIMAL OR SHIP STRIKE REPORTING LOG

Vessel _____ Marine Wildlife Monitor(s) _____

If an injured or sick individual is observed, complete items 1 - 4, and 11. Immediately notify NMFS, SCE, USCG.

If a ship strike occurs, complete items 1 - 11. Immediately notify NMFS, SCE, USCG, CDF&G.

1. Date _____

2. Time of observation/occurrence _____

3. Location (Lat/Long) _____

4. Species and approximate size (if known) _____

5. Speed of vessel causing impact _____

6. Size of vessel causing impact _____

7. Water depth at site of impact _____

8. Wind speed and direction _____

9. Fate of the animal, if known _____

10. Description of the impact: _____

11. Agencies notified: Date Time Agency Contact name

Contacts: MBC - Robert Moore 714-850-4830 ofc, 714-514-5652 cell

APPENDIX 4

Notice to Mariners and Other Notifications

Robert Moore

From: Robert Moore
Sent: Friday, July 26, 2019 4:38 PM
To: 'D11LNM@uscg.mil'
Subject: Local Notice to Mariners Notification
Attachments: LNM CSB Pipeline Survey Bathy-Subbot.pdf

MBC Aquatic Sciences will be conducting sonar surveys at two locations within Huntington Harbour. We are scheduled to work on August 21, with August 22 as a backup date, between the hours of 0700 to 1600. We will be using low energy sound sources. Attached is a map and description of the two survey areas. Attached is the LNM for publication.

Regards,

Bob Moore
Senior Scientist
MBC Aquatic Sciences
3000 Red Hill Avenue Costa Mesa, CA 92626
ofc 714-850-4830 x 226 fax 714-850-4840 cell 714-514-5652



Please consider the environment before printing this e-mail

Confidentiality Notice: This email, including any documents attached to this email, may contain information which is confidential and/or privileged. Therefore, if you are not the intended recipient of this email, any dissemination, copying or action taken in reliance on the contents of this email is strictly prohibited. If you have received this email in error, please delete it and notify the sender immediately. Views expressed in this email are those of the individual sender and are not necessarily those of MBC Aquatic Sciences.

Robert Moore

From: Robert Moore
Sent: Friday, July 26, 2019 4:41 PM
To: 'crandall@ocsdd.org'
Subject: Huntington Harbor Sonar Survey Notification
Attachments: NOTICE TO MARINERS and DIVERS.pdf

MBC Aquatic Sciences will be conducting sonar surveys at two locations within Huntington Harbour. We are scheduled to work on August 21, with August 22 as a backup date, between the hours of 0700 to 1600. We will be using low energy sound sources. Attached is a map and description of the two survey areas. Please notify officers in your office, and if possible, post in your public space to notify local mariners of our planned activity. Our vessel will have limited mobility while towing and will display 'day-shapes' indicating so while tows are underway. As can be seen from the map, one area will be in the main channel to enter/exit Huntington Harbor landward / upchannel of the PCH bridge.

If you have any questions, please contact me at the office number below.

Regards,

Bob Moore
Senior Scientist
MBC Aquatic Sciences
3000 Red Hill Avenue Costa Mesa, CA 92626
ofc 714-850-4830 x 226 fax 714-850-4840 cell 714-514-5652



Please consider the environment before printing this e-mail

Confidentiality Notice: This email, including any documents attached to this email, may contain information which is confidential and/or privileged. Therefore, if you are not the intended recipient of this email, any dissemination, copying or action taken in reliance on the contents of this email is strictly prohibited. If you have received this email in error, please delete it and notify the sender immediately. Views expressed in this email are those of the individual sender and are not necessarily those of MBC Aquatic Sciences.

Marine Wildlife Contingency Plan for Huntington Harbour Buried Pipeline Survey

Robert Moore

From: Robert Moore
Sent: Friday, July 26, 2019 4:41 PM
To: 'nwssbpao@navy.mil'
Subject: Huntington Harbor Sonar Survey Notification
Attachments: NOTICE TO MARINERS and DIVERS.pdf

MBC Aquatic Sciences will be conducting sonar surveys at two locations within Huntington Harbour. We are scheduled to work on August 21, with August 22 as a backup date, between the hours of 0700 to 1600. We will be using low energy sound sources. Attached is a map and description of the two survey areas.

If you have any questions, please contact me at the office number below.

Regards,

Bob Moore
Senior Scientist
MBC Aquatic Sciences
3000 Red Hill Avenue Costa Mesa, CA 92626
ofc 714-850-4830 x 226 fax 714-850-4840 cell 714-514-5652



Please consider the environment before printing this e-mail

Confidentiality Notice: This email, including any documents attached to this email, may contain information which is confidential and/or privileged. Therefore, if you are not the intended recipient of this email, any dissemination, copying or action taken in reliance on the contents of this email is strictly prohibited. If you have received this email in error, please delete it and notify the sender immediately. Views expressed in this email are those of the individual sender and are not necessarily those of MBC Aquatic Sciences.

Robert Moore

From: Robert Moore
Sent: Friday, July 26, 2019 4:44 PM
To: 'jeff@pacificwilderness.com'; 'Greg.moss@beachcitysscuba.com'; 'john@scubastuff.com'; 'beachcitysscubacenter@gmail.com'; 'classes@beachcitysscuba.com'
Subject: Dive Shop Sonar Survey Notification
Attachments: NOTICE TO MARINERS and DIVERS.pdf

All,

MBC Aquatic Sciences will be conducting sonar surveys at two locations within Huntington Harbour. We are scheduled to work on August 21, with August 22 as a backup date, between the hours of 0700 to 1600. We will be using low energy sound sources. Attached is a map and description of the survey area. Please post at your shops to notify local divers of our planned activity. Note we will be working in the channel access to the launch ramp as well as the main channel to enter/exit Huntington Harbour on the landward / upchannel side of PCH.

Regards,

Bob Moore
Senior Scientist
MBC Aquatic Sciences
3000 Red Hill Avenue Costa Mesa, CA 92626
ofc 714-850-4830 x 226 fax 714-850-4840 cell 714-514-5652



Please consider the environment before printing this e-mail

Confidentiality Notice: This email, including any documents attached to this email, may contain information which is confidential and/or privileged. Therefore, if you are not the intended recipient of this email, any dissemination, copying or action taken in reliance on the contents of this email is strictly prohibited. If you have received this email in error, please delete it and notify the sender immediately. Views expressed in this email are those of the individual sender and are not necessarily those of MBC Aquatic Sciences.

Marine Wildlife Contingency Plan for Huntington Harbour Buried Pipeline Survey

Robert Moore

From: Robert Moore
Sent: Friday, July 26, 2019 4:42 PM
To: 'Peterslandingmarina@gmail.com'; 'npfeifer@gkind.com'; 'clubmanager@hhyc.org'
Subject: Huntington Harbor Marinas Sonar Survey Notification
Attachments: NOTICE TO MARINERS and DIVERS.pdf

MBC Aquatic Sciences will be conducting sonar surveys at two locations within Huntington Harbour. We are scheduled to work on August 21, with August 22 as a backup date, between the hours of 0700 to 1600. We will be using low energy sound sources. Attached is a map and description of the two survey areas. Please post at your offices and other public spaces to notify local mariners of our planned activity. Our vessel will have limited mobility while towing and will display 'day-shapes' indicating so while tows are underway. As can be seen from the map, one area will be in the main channel to enter/exit Huntington Harbor, landward / upchannel of the PCH bridge.

If you have any questions, please contact me at the office number below.

Regards,

Bob Moore
Senior Scientist
MBC Aquatic Sciences
3000 Red Hill Avenue Costa Mesa, CA 92626
ofc 714-850-4830 x 226 fax 714-850-4840 cell 714-514-5652



Please consider the environment before printing this e-mail

Confidentiality Notice: This email, including any documents attached to this email, may contain information which is confidential and/or privileged. Therefore, if you are not the intended recipient of this email, any dissemination, copying or action taken in reliance on the contents of this email is strictly prohibited. If you have received this email in error, please delete it and notify the sender immediately. Views expressed in this email are those of the individual sender and are not necessarily those of MBC Aquatic Sciences.

Robert Moore

From: Robert Moore
Sent: Tuesday, July 30, 2019 10:45 AM
To: 'mickhermes@gmail.com'
Subject: Huntington Harbor Marinas Sonar Survey Notification
Attachments: NOTICE TO MARINERS and DIVERS.pdf

MBC Aquatic Sciences will be conducting sonar surveys at two locations within Huntington Harbour. We are scheduled to work on August 21, with August 22 as a backup date, between the hours of 0700 to 1600. We will be using low energy sound sources. Attached is a map and description of the two survey areas. Please post at your offices and other public spaces to notify local mariners of our planned activity. Our vessel will have limited mobility while towing and will display 'day-shapes' indicating so while tows are underway. As can be seen from the map, one area will be in the main channel to enter/exit Huntington Harbor, landward / upchannel of the PCH bridge.

If you have any questions, please contact me at the office number below.

Regards,

Bob Moore
Senior Scientist
MBC Aquatic Sciences
3000 Red Hill Avenue Costa Mesa, CA 92626
ofc 714-850-4830 x 226 fax 714-850-4840 cell 714-514-5652



Please consider the environment before printing this e-mail

Confidentiality Notice: This email, including any documents attached to this email, may contain information which is confidential and/or privileged. Therefore, if you are not the intended recipient of this email, any dissemination, copying or action taken in reliance on the contents of this email is strictly prohibited. If you have received this email in error, please delete it and notify the sender immediately. Views expressed in this email are those of the individual sender and are not necessarily those of MBC Aquatic Sciences.
