



Marine Mammal Monitoring Annual Report - 2023 IHA Compliance

Chevron Point Orient Wharf Removal Project

Chevron Products Company

December 21, 2023

Prepared for:

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Acronyms and Abbreviations

The Bay	San Francisco Bay
CASL	California sea lion
CDFW	California Department of Fish and Wildlife
dB	decibels
°F	degrees Fahrenheit
HASE	Pacific harbor seal
IHA	Incidental Harassment Authorization
m	meters
NMFS	National Marine Fisheries Service
Project	Point Orient Wharf Removal Project
PSO	protected species observer
RMS	root mean square
SEL	sound exposure level
Wharf	Point Orient Wharf

1. Introduction

This 2023 Marine Mammal Monitoring Report is being submitted to the National Marine Fisheries Service (NMFS) in accordance with the 2023 Incidental Harassment Authorization (IHA) valid from June 1, 2023 through May 31, 2024.

Under the Point Orient Wharf Removal Project (Project), Chevron has removed the Point Orient Wharf (Wharf) in its entirety (as of November 15, 2023), and restored eelgrass to the subtidal habitat in areas under the Causeway suitable for eelgrass that were affected by the shading and scour imposed by the structure. Removing the Wharf provided the opportunity to increase the extent of eelgrass beds to areas currently covered by the Causeway, enhancing intertidal and subtidal habitat of San Francisco Bay. Monitored Project construction activities involving the use of a vibratory hammer (Covered Activities) for the 2023 monitoring year occurred in August 2023 at the Point Orient Wharf.

2. Project Area

The Point Orient Wharf is located in central San Francisco Bay (the Bay) on the western side of Point San Pablo, approximately 1.8 miles north of the eastern terminus of the Richmond-San Rafael Bridge in Contra Costa County. The Brothers Islands and Lighthouse lies approximately 800 meters (2,600 feet) to the North of the Wharf. Figure 1 illustrates the Project vicinity and specific location. The overall area of the Wharf was approximately 2 acres and extended approximately 1,300 feet into the Bay. Where the Wharf interfaced with the shoreline, the shoreline is primarily covered in local rock, likely from the cut slope east of the Wharf, and rock slope protection that protects the shore from wave action. East of the shoreline is Stenmark Drive and Chevron Richmond Refinery property east of Stenmark Drive. From shore, the first 485 feet of the structure was located on submerged land owned by Chevron; the remaining portion was on State-owned submerged land leased from the California State Lands Commission (Figure 2).

3. Methods

Marine mammal monitoring efforts consisted of a worker education program for all personnel and visual monitoring for marine mammal "Covered Species" during all work activities including vibratory pile extraction.

Those species include the following:

- Pacific harbor seal (*Phoca vitulina*)
- California sea lion (*Zalophus californianus*)
- Harbor porpoise (*Phocoena phocoena*)
- Gray Whale (*Eschrichtius robustus*)
- Humpback whale (*Megaptera novaeangliae*)
- Bottlenose dolphin (*Tursiops truncatus*)
- Northern elephant seal (*Mirounga angustirostris*)
- Northern fur seal (*Callorhinus ursinus*)

3.1 Worker Education Program

In accordance with permit conditions, on May 23, 2022, a worker education program was given to all personnel employed or otherwise working in the Project Area before performing any work on the project. Materials prepared by the Designated Biologist describing the biology and general behavior of the Covered Species, the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to human activities, Covered Species legal protection, recovery efforts, and penalties for violations were provided to all site workers remotely. A brochure and presentation containing this information was provided to all site workers. All trained site workers signed a form stating they completed the training and understand all protection measures. The training materials and signature forms can be found in Appendix A and B.



Figure 1 Project Location

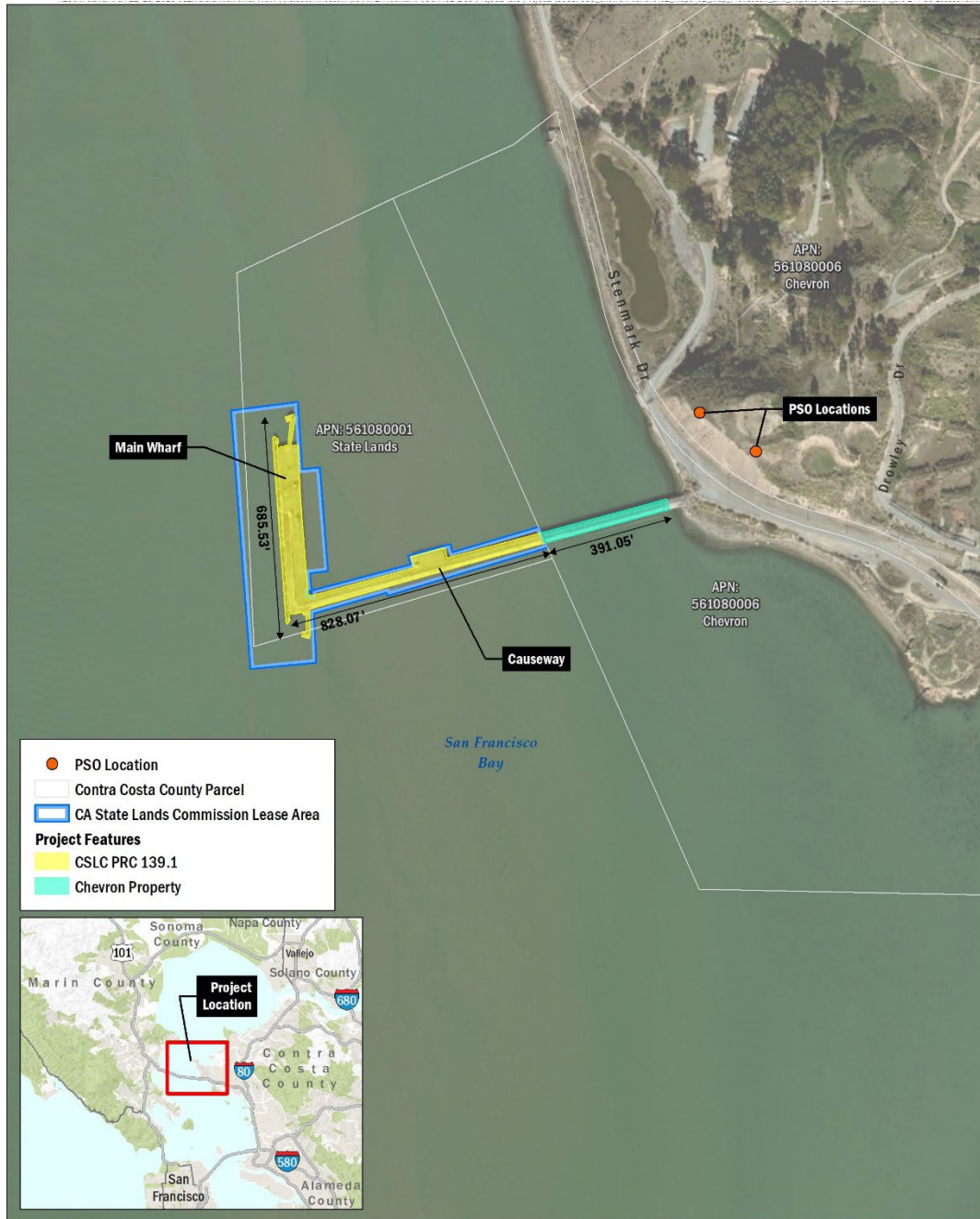


Figure 2 Point Orient Wharf and PSO Locations

3.2 Monitoring during Pile Extraction Activities

3.2.1 Marine Mammal Monitoring

Marine mammal monitoring was conducted in accordance with the Project Marine Mammal Monitoring Plan¹ and the Year 2 IHA. Pile extraction with the vibratory hammer took place on August 8, 2023, after all decking was removed from the wharf. Baseline monitoring took place one hour before the start of vibratory pile extraction on the first day that covered work activities took place and continued for 30 minutes after work was completed for the day. After it was determined that pile extraction using a vibratory hammer was deemed infeasible, no subsequent activities requiring monitoring took place.

Two qualified NMFS-approved protected species observers (PSOs) were on-site during vibratory extraction work, for a total of 1 days in the 2023 work window (August 8, 2023). Work during this time took place along the Point Orient Wharf Main Wharf (Figure 2). The causeway portion of the Wharf had been removed in 2022. The PSOs were stationed at monitoring locations atop a bluff, approximately 100 feet in elevation, just onshore of both the Wharf and Stenmark Drive (Figure 2). Cell phones were used to communicate among the PSOs and the construction team. PSOs used professional quality binoculars to continuously scan the monitoring zone for marine mammals. Field data sheets summarizing environmental conditions, pile-extraction activities, and observations of marine mammals were prepared daily by both PSOs (Appendix C).

4. Marine Mammal Monitoring Results

4.1 Monitoring Conditions and Monitored Activities

Conditions during observation periods were variable but favorable for marine mammal observations. Overall, PSOs were reliably able to observe the waters within 450+ meters of all active pile extraction activities. For a summary of daily work activities, see Table 1.

In August 2023, during the one-day work timespan, two 12-inch timber or concrete encased timber piles were attempted to be extracted with a vibratory hammer along the Point Orient Wharf causeway. The total vibratory time for the duration of covered work activities was not able to be determined due to the repeated failed attempts and early abandonment of the effort; however, the contractor estimates approximately 30 minutes of vibratory hammer operation. None of the piles removed in 2023 were successfully extracted in their entirety using the vibratory hammer. Due to the condition of the piles, the piles broke during the vibratory extraction process, leaving stubs that had to be cut below the mudline. Due to the low success rate of removing piles with the vibratory hammer, this method was abandoned on August 8th, 2023 and all subsequent piles removed in 2023 were cut below the mudline using methods that did not require marine mammal monitoring. Table 1 indicates the breakdown of 2023 covered work activities.

Table 1 Summary of 2023 Monitored Covered Activities

Date	Covered Activities
08/08/2023	Attempts were made to extract several 12" timber and concrete encased timber piles with a vibratory hammer. The total vibratory hammer operation time was approximately 30 minutes.

¹ AECOM (2022). Marine Mammal Monitoring Plan, Point Orient Wharf Removal Project. April 2022. 32 pp.

4.2 Marine Mammal Observations and Take

Marine Mammal Observations – The marine mammal Monitoring Period during construction activities was defined as 30 minutes prior to vibratory pile extraction initiation and ended 30 minutes after such work was completed for the day, or when there was a pause in the work of 2 hours or more.

No harbor seals (*Phoca vitulina*) or California sea lions (*Zalophus californianus*) – the most common species typically detected during normal work activities – nor any other marine mammal species, were observed during the covered work activities. No marine mammal individuals were recorded in the shutdown zone areas before or during hammer operation and no shut downs were required. No other species of marine mammals were observed during the construction season. Data sheets with routine observations are included in Appendix C for completeness.

Behavioral Changes Observed in Swimming Marine Mammals – No marine mammals were recorded in the shutdown or the estimated Level B zones before or during covered work activities; therefore, no behavioral changes were observed.

Estimated Take – No marine mammals were recorded in the shutdown or estimated Level B zones before or during covered work activities; therefore, no estimated take was recorded.

5. Discussion

As presented in the IHA application, harbor seals are the most likely species to occur in the vicinity of the Point Orient wharf and were the most common species observed during all pile extraction and work activities in 2022; no marine mammals were observed during the single day of work in 2023. No Level A or Level B takes of marine mammal species occurred.

The current avoidance and minimization measures, as required in permit conditions, have been demonstrated to effectively minimize take of marine mammals.

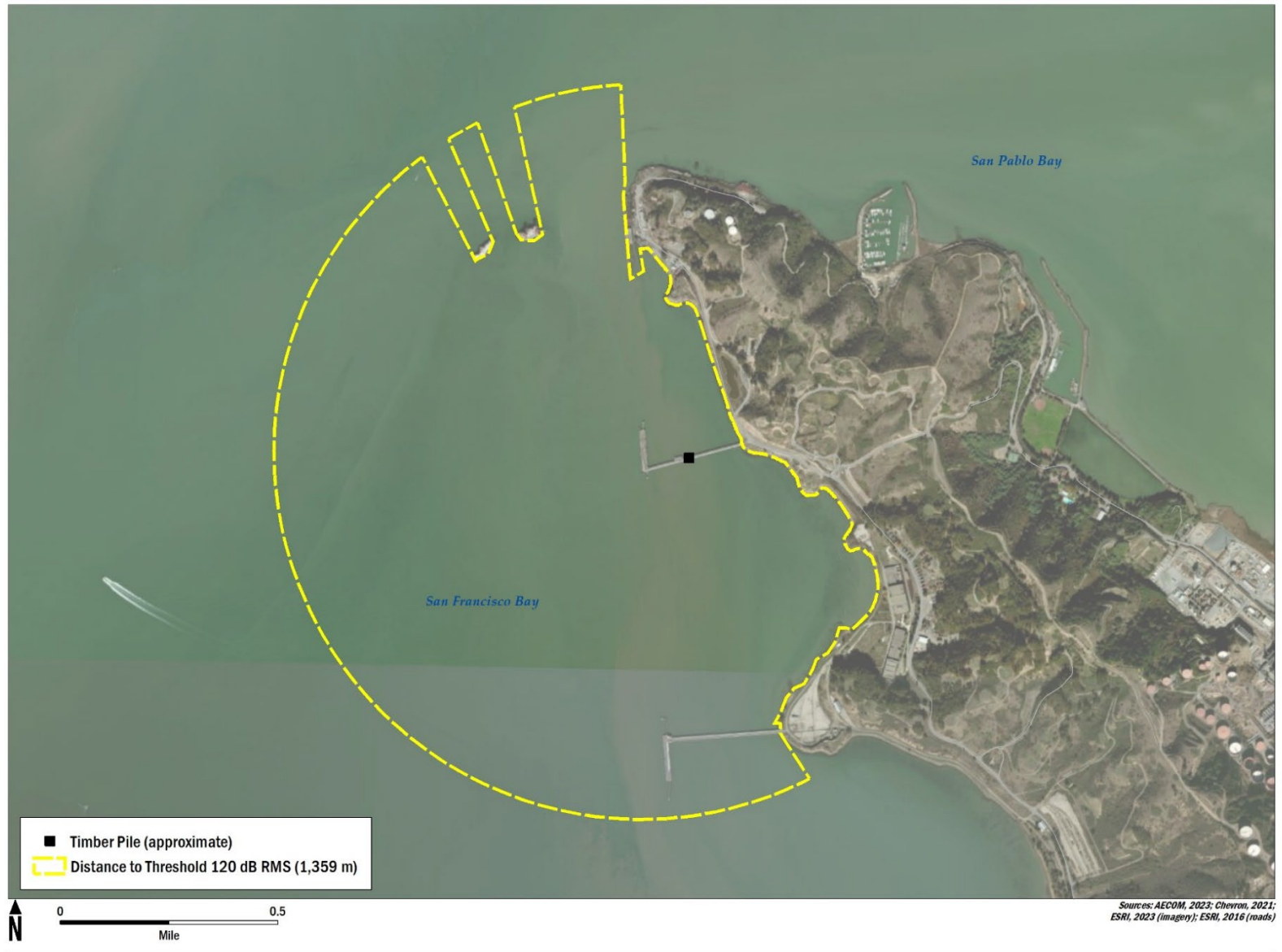


Figure 3 Level B Harassment Zone for Timber Pile Vibratory Extraction

Appendix A Worker Environmental Awareness Training

Environmental Awareness Training



Point Orient Wharf Removal Project 2022

May 23, 2022

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Regulatory Permits and Approvals



- **California State Lands Commission:** Environmental Analysis (Initial Study/Mitigated Negative Declaration; IS/MND)
- **California Regional Water Quality Control Board (RWQCB):** Water Quality Certification
- **U.S. Army Corps of Engineers:** Nationwide 27 (Restoration) and Nationwide 13 (Bank Stabilization)
- **National Marine Fisheries Service (NMFS):**
 - Letter of Concurrence (listed fish species)
 - Incidental Harassment Authorization (IHA; for marine mammals))
- **S.F. Bay Conservation & Development Commission (BCDC):** Minor Permit

Copies of the MMRP table and permits must be kept on-site.

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General Protective Measures



▪ Time Restrictions

- Conduct vibratory pile removal only during daylight hours; related in-water work between June 1 and November 30.

▪ Treated Wood Pile Extraction

- All piles shall be removed by direct pull or by vibratory methods. Should a pile break or cannot be removed, the pile shall be cut off, at a minimum, 2 feet below the mudline. No hydraulic jetting.
- Move piles directly to lined barge after pulling. Piles will not be washed, shaken, or otherwise be allowed to drain over Bay waters to remove sediment prior to placement on the debris barge. Do not wash barge decks in a manner that would allow wastewater to enter the Bay.
- Keep all vessels within the marked work area to avoid damage to eelgrass outside of the permitted disturbance area. Avoid excessive vessel thrust to minimize eelgrass damage.
- Accumulated sediment from pile removal is assumed to contain creosote and will be collected, tested and properly disposed.

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General Protective Measures



▪ Debris and Waste Management

- During demolition activities, install floating debris booms to capture floating surface debris to contain releases if they were to occur.
- When cutting materials above water, any debris generated will be contained and prevented from entering the Bay by using platforms or other devices below the work area to catch debris before it enters the Bay.
- If any solid materials or wastes are inadvertently released to the Bay, the contractor will immediately stop all work and use all available resources to assure containment and removal.
- Demolition waste will be collected and transported to an authorized upland disposal or recycle site by a properly licensed transporter (in accordance with the California Code of Regulations, Title 22, Division 4.5)

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General Protective Measures



▪ Spill Prevention and Control.

- Maintain spill cleanup material at the work site and follow the approved spill plan (SPCC).
- Store all hazardous materials (fuels, oils, grease solvents, coolants) according to the SPCC.
- Fuel equipment in accordance with Best Management Practices in the SPCC. Immediately clean up any spills.
- Inspect equipment regularly for leaks or spills; repair leaking equipment promptly.
- Containment booms will be deployed around areas of creosote treated pile removal to contain creosote oil sheen.
- In case of emergency, use contact tree in SPCC

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General Protective Measures



▪ Basic Air Quality and Dust Control Measures

- All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Watering during work on shoreline repair
- Haul trucks transporting loose materials (soil, fill materials) shall be covered
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications.
- Minimize idling times by shutting down or reducing the maximum idle time to 5 minutes (CA air toxics control measure, CCR Title 12, Section 2485).

▪ Additional Protective Measures for Cultural and Biological Resources

- Discussed later in this presentation

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Cultural Resources



- Cultural resources training is required for all persons working in the Project Area prior to the start of work
- Cultural resources and human remains are protected by state and federal law, including:
 - Antiquities Act of 1906
 - National Historic Preservation Act of 1966
 - California Public Resources Code § 5097.5
 - California Health and Safety Code § 7051 and § 7052

The unauthorized removal or intentional disturbance of cultural resources or human remains can result in up to \$100,000 in fines and 5 years imprisonment.

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Cultural Resources



- Cultural resources include precontact and historic-period artifacts and sites
- Precontact Sites
 - Artifacts made from natural materials, including stone, bone, and shells
 - Most common sites in the area are shell mounds, which are the locations of villages and ceremonial sites
 - Contain concentrations of shellfish remains, evidence of fire (ashes, charcoal, burnt earth, fire-cracked rocks), concentrations of bone, recognizable California Native American artifacts, and may contain human remains
 - Sites and artifacts in this area may also be Tribal cultural resources, which are important to the Ohlone and are protected by law

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Cultural Resources



- Indicators of a site could include obsidian (black, glassy stone); shell, bone, and stone artifacts; and concentrations of shell in dark soil



- Historic-period sites may also be present. These sites could include:
 - Concentration of bottles, broken dishes, shoes, buttons, cut animal bones, hardware such as horseshoes, household items, barrels, etc.
 - Remains of sunken ships, including wooden planks and hardware

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Cultural Resources



Cultural resources are nonrenewable and important for their scientific, cultural, and aesthetic values. Do your part in protecting these resources!

- If a potential site or artifacts are identified:
 - Stop work immediately within 100 feet of the find
 - Notify the Project Compliance Specialist who will contact a qualified archaeologist who will assess the find with an Ohlone representative
 - If it is significant, you will be asked to avoid the area and continue work in another area.
- If potential human remains are identified:
 - Stop work immediately within 100 feet of the find
 - **Immediately** notify the Project Compliance Specialist
 - No work can proceed in the discovery area until consultation is complete and procedures to avoid or recover the remains have been implemented.

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Biological Resources



- Biological resources training is required for all persons working in the Project Area before performing work.



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Regulatory Requirements



- **Federal Endangered Species Act (ESA)**
 - Prohibits the “take” of any listed species. “Take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”
- **California Endangered Species Act (CESA)**
- **Marine Mammal Protection Act** – protects all marine mammals.
 - Prohibits the “take” (injury or harassment) of marine mammals unless under incidental harassment permit.
 - Illegal to intentionally harass marine mammals
- **California Fish and Game Code §3511** – prohibits take of fully protected birds.

***Violation of federal and/or state environmental laws
may result in fines and/or jail.***

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Covered Species: Fish



- Chinook salmon



- Longfin smelt



- Green sturgeon



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Covered Species: Marine Mammals - Pinnipeds



- Pacific harbor seal and California sea lion
 - Sensitive to underwater noise
 - Exclusions zones will be monitored before and during driving



Harbor Seal



CA Sea Lion



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Covered Species: Marine Mammals - Cetaceans



- Harbor porpoise and gray whale
 - Very sensitive to underwater noise
 - Larger exclusion zones than seals and sea lions
 - Less likely to be seen in the vicinity of Point Orient Wharf



Harbor Porpoise



Gray Whale

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Biological Issues and Protected Species



- Acoustic Sensitivity
 - Marine mammals and fish are sensitive to underwater sounds
 - Pile Extraction
 - Vibratory hammer (continuous noise) can cause behavioral disruptions, include site avoidance and feeding behavior
 - Sound produced during work can:
 - Confuse and disorient animals
 - Cause physical harm – damage to fish tissues and hearing loss in mammals
 - Discourage natural behaviors like feeding and resting
 - Work window between June 1 and November 30 when fewer species are present

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Measures to Protect Marine Mammals



- Shutdown Zones: For all pile driving activities, NMFS will specify shutdown zones for marine mammals. 10 meter Shutdown zones for all species.
- Monitors will observe zones for 30 min prior to the start of driving and will give the all-clear to start. If animals approach too close, a temporary shutdown of hammer operation may be needed.
- Use of Ramp Up/ Soft Start not required in Draft IHA
- For in-water heavy machinery work other than pile driving (e.g., standard barges, tugboats, barge-mounted excavators, or clamshell equipment), if a marine mammal comes within 10 meters, operations shall cease and vessels shall reduce speed to the minimum level required to maintain steerage and safe working conditions.
- Visual marine mammal monitoring, observation, data collection, and reporting.

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Nesting Birds



- Nesting bird survey is required prior to the start of the nesting season April 1 – August 31
- Workers should be observant of possible nests throughout the year and during all construction activities
- Nests must be removed by a qualified biologist

Western gull



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California least tern
(Endangered)

Brown pelican (CFGC
Fully Protected)



Double-crested
cormorant

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Responsibilities



- All workers should always keep an eye open for these species.
- If dead or injured fish or marine mammals are observed, immediately notify the Project Compliance Specialist
- If a bird nest is observed, notify the Project Compliance Specialist
- Remember: it is illegal to intentionally harm or harass marine mammals or remove migratory bird nests



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Contacts during Construction



Environmental Contact	Phone number
Bill Martin (Compliance Specialist)	925-640-4806
Maureen Dunn (Refinery HES Water Specialist)	510-210-2483
Matthew Bettelheim (Designated Biologist)	510-874-3042

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Questions?



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Appendix B Training Attendance Record

Chevron Richmond Refinery Point Orient Wharf Removal Project 2022 In-water Work Training Acknowledgement

1.0 Introduction and Purpose

CEQA environmental clearance and permits issued by the resources agencies specify that environmental awareness training and education is required for the Point Orient Wharf Removal Project. To provide documentation that this training was conducted attendance must be acknowledged by every employee and contract worker involved with the field aspects of the project. This document specifies how the permits conditions will be complied with.

2.0 Acknowledgement

The person completing and signing the Training Session Sign-in Sheet acknowledges that they have attended and successfully completed the required training session and understand all protection measures imposed by the Point Orient Wharf regulatory conditions of approval and mitigation measures required by the environmental document and permits.

3.0 Employee and Contractor Worker Information and Certification

"By signing the Training Meeting Sign-in Sheet, I hereby acknowledge that I have attended the training and education program session that has been developed for the Chevron Richmond Refinery Point Orient Wharf Removal Project, and that I understand all protective measures required by the permits."

**Point Orient Wharf Removal Project
Environmental Awareness Training Meeting
Attendee Sign-In Sheet**

Date: May 23, 2022

The person completing and signing this Sign-in Sheet acknowledges that they have attend and successfully completed the required training session and understand all protection measures imposed by the Point Orient Wharf Project regulatory conditions of approval and mitigation measures required by the project permits.

Name	Company	Email
Lauren Rodriguez	PEC	LRodriguez@powereng construction.com
Jason Pleasants	PEC	JPleasants@powerengConstruction.com
Rafael Otero	PEC	Rafael.Otero11@Icloud.com
Jesus Meraz	PEC	Jesúsmeraz290@yahoo.com
Kristi Tuemmler	PEC	notion42@hotmail.com
Scott Kremer	PEC	S.Kremer@YAHOO.COM
Richard Foster	PEC	R.Foster@powereng.Construm.com
Diego Rodriguez	PEC	diego.rodriguez.cottoz@gmail.com
Arturo Ramirez	PEC	arturoramirez2100@icloud.com
Cedric Lea	PEC	CLea360@gmail.com
Jose Luis Coronei	PEC	CoroneiJ73@gmail.com
Eloy Valle Murillo	PEC	IonysRV@yahoo.com
RYAN HARDING	PEC	HARDINGRYAN90@gmail.com
Daniel Carrillo	PEC	yuppitsdanny24@gmail.com

**Point Orient Wharf Removal Project
 Environmental Awareness Training Meeting
 Attendee Sign-In Sheet**

Date: May 23, 2022

The person completing and signing this Sign-in Sheet acknowledges that they have attend and successfully completed the required training session and understand all protection measures imposed by the Point Orient Wharf Project regulatory conditions of approval and mitigation measures required by the project permits.

Name	Company	Email
VICENTE CORRAL	PEC	V.corral100@yahoo
Omar A Vega	PEC	theomarvega@gmail.com
Julio Catril	PEC	Jcatril70@gmail.com
Scott Williams	PEC	williams@powerengconstruction.com
Bennett Clegg	PEC	clegg@Power Eng Construction.com
Albert Apodaca	PEC	waterboy125@gmail.com

Appendix C Marine Mammal Monitoring Daily Field Datasheets

Rich (510) 267 3563

Date: 8/8/2023

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Daily Marine Mammal Monitoring Summary Log
Richmond Refinery Long Wharf Maintenance and Efficiency Project

Monitor Name:

MATTHEW BEITELHEIM

MONITOR #1

Weather/Visibility and Sea State - use Beaufort Scale on next page:

Beaufort scale = 4

Tidal Level at Start/End of Work - use Tides app or refer to Richmond Harbor at tidesandcurrents.noaa.gov):

START (7:41 AM) @ 3.77 feet / END (12:46 PM) @ 2.68ft

General Human Activity in the Area:

Typical shipping channel traffic

Monitoring Location(s) - show on diagram and take panoramic photo of field of view:

MONITOR #1

Are Castro Rocks visible (yes/no)? If yes, fill out page A-4:

Ø

Berth Number:

N/A

Pile Type - include size and material:

Steel
timber piles

Total Pile Count for the Day:

Ø

Equipment: Impact

Vibratory

Total Minutes of Pile Driving - enter total time here¹:

> 1 min

¹ Note the start and end times for each individual pile on page 7.

Date: 8/8/2023

Monitor Initials: MB

The Beaufort scale

No.	Knots	Mph	Description	Effects at sea	Effects on land
0	0	0	Calm	Sea like a mirror	Smoke rises vertically
1	1-3	1-3	Light air	Ripples but no foam crests	Smoke drifts in wind
2	4-6	4-7	Light breeze	Small wavelets	Leaves rustle, wind felt on face
3	7-10	8-12	Gentle breeze	Large wavelets; Crests not breaking	Small twigs in constant motion; Light flags extended
4	11-16	13-18	Moderate wind	Numerous whitecaps Waves 1-4ft high	Dust, leaves and loose paper raised. Small branches move.
5	17-21	19-24	Fresh wind	Many whitecaps, some spray; Waves 4-8 ft high	Small trees sway
6	22-27	25-31	Strong wind	Whitecaps everywhere; Larger waves 8-13 ft high	Large branches move; Difficult to use umbrellas
7	28-33	32-38	V. strong wind	White foam from waves is blown in streaks; waves 13-20ft high	Whole trees in motion
8	34-40	39-46	Gale	Edges of wave crests break into spindrift	Twigs break off trees; Difficult to walk
9	41-47	47-54	Severe gale	High waves; sea begins to roll Spray reduce visibility; 20ft waves	Chimney pots and slates removed
10	48-55	55-63	Storm	V. high waves 20-30 ft, blowing foam gives sea white appearance	Trees uprooted
11	56-63	64-72	Severe storm	Exceptionally high waves; 30-45 ft high Air filled with foam; visibility reduced	Structural damage Widespread damage
12	63	73	Hurricane	White sea; waves over 45ft high	Widespread damage; rare

Date: 9/8/2023

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Monitor Initials: MB

Daily Marine Mammal Monitoring Data Sheet
Richmond Refinery Long Wharf Maintenance and Efficiency Project

PHOTO LOG

upload photos to network, include date and monitoring position in file name

Table with 3 columns: Photo Number, Photo Taken Before (B), During (D), or After (A) Pile Driving, and Description. Contains handwritten entries for photo numbers 9204 and 9205.

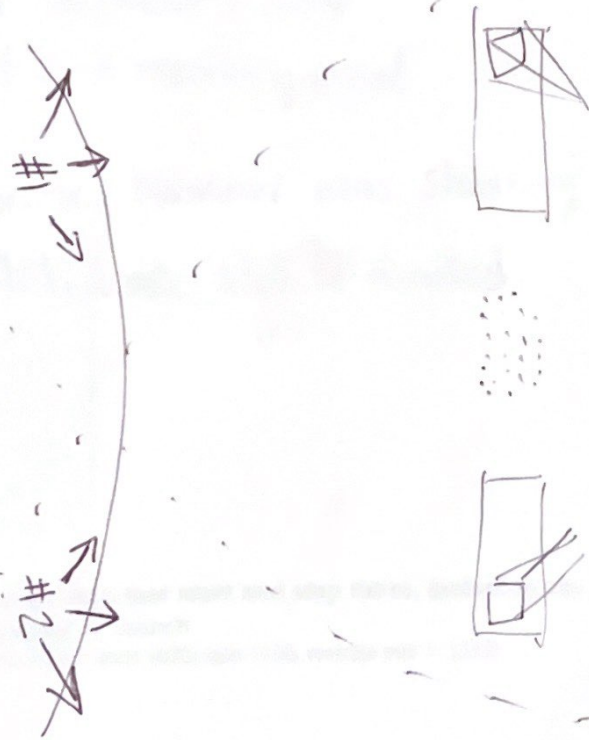
Date: 3/8/2023

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Monitor Initials: MB

Daily Marine Mammal Monitoring Data Sheet
Richmond Refinery Long Wharf Maintenance and Efficiency Project

Diagram



Biological Monitor: MATTHEW BETTELHEIM
Signature: [Handwritten Signature]



Date: 8/8/2023

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Monitor Initials: NR

Daily Marine Mammal Monitoring Data Sheet
Richmond Refinery Long Wharf Maintenance and Efficiency Project

Pile Driving Start and Stop Times³

1. Vibratory hammer start and stop times (include breaks):

(example: Pile 1: start 1030, stop 1035; start 1041, stop 1051; start 1055; stop 1101)

7:45 - start/stop setting vibratory hammer, switch to cutting wood piles

11:54 - Start monitoring period

12:51 End monitoring period

Vibratory hammer was shearing off pieces of metal, work was terminated.

2. Impact hammer start and stop times, including any restrikes (only note breaks of 30 minutes or more):

(example: Pile 1: start 1030, stop 1130; restrike pile 1: 1355)

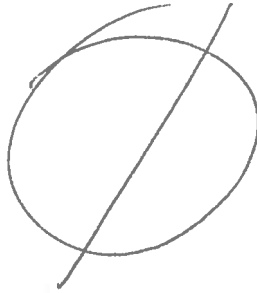


³ For vibratory pile driving, note each time the hammer starts and stops. For impact pile driving, note the start and end time for each pile, unless hammering ceases for ≥ 30 minutes) on that pile. Strike counts and times are included in a separate report.

Date: 8/8/11
Monitor Initials: MB

Daily Marine Mammal Monitoring Data Sheet
Richmond Refinery Long Wharf Maintenance and Efficiency Project

Additional Notes



(JB) #2
Date: 8/8/23

Page 1 of 8

Daily Marine Mammal Monitoring Summary Log
Richmond Refinery Long Wharf Maintenance and Efficiency Project

Monitor Name: Joe Bandel

Weather/Visibility and Sea State - use Beaufort Scale on next page:

Start: 4 - moderate wind End: 4 - moderate wind

Tidal Level at Start/End of Work - use Tides app or refer to Richmond Harbor at tidesandcurrents.noaa.gov:

Start: 7:41am at 3.77 ft End: 12:46 - 2.88 ft

General Human Activity in the Area:

typical boat activity - ferries, tugboats, and the like

Monitoring Location(s) - show on diagram and take panoramic photo of field of view:

See diagram

Are Castro Rocks visible (yes/no)? If yes, fill out page A-4: No

Berth Number: NA

Pile Type - include size and material:

Steel
Timber piles

Total Pile Count for the Day: 0

Equipment: Impact Vibratory

Total Minutes of Pile Driving - enter total time here¹:

1 minute

¹ Note the start and end times for each individual pile on page 7.

Date: 8/8/23

Monitor Initials: AB

The Beaufort scale

No.	Knots	Mph	Description	Effects at sea	Effects on land
0	0	0	Calm	Sea like a mirror	Smoke rises vertically
1	1-3	1-3	Light air	Ripples but no foam crests	Smoke drifts in wind
2	4-6	4-7	Light breeze	Small wavelets	Leaves rustle; wind felt on face
3	7-10	8-12	Gentle breeze	Large wavelets; Crests not breaking	Small twigs in constant motion; Light flags extended
4	11-16	13-18	Moderate wind	Numerous whitecaps Waves 1-4ft high	Dust, leaves and loose paper raised. Small branches move.
5	17-21	19-24	Fresh wind	Many whitecaps, some spray; Waves 4-8 ft high	Small trees sway
6	22-27	25-31	Strong wind	Whitecaps everywhere; Larger waves 8-13 ft high	Large branches move; Difficult to use umbrellas
7	28-33	32-38	V. strong wind	White foam from waves is blown in streaks; waves 13-20ft high	Whole trees in motion
8	34-40	39-46	Gale	Edges of wave crests break into spindrift	Twigs break off trees; Difficult to walk
9	41-47	47-54	Severe gale	High waves; sea begins to roll Spray reduce visibility; 20ft waves	Chimney pots and slates removed
10	48-55	55-63	Storm	V. high waves 20-30 ft, blowing foam gives sea white appearance	Trees uprooted
11	56-63	64-72	Severe storm	Exceptionally high waves; 30-45 ft high	Structural damage
12	63	73	Hurricane	Air filled with foam; visibility reduced White sea; waves over 45ft high	Widespread damage; rare

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Monitor Initials: JP

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PHOTO LOG

upload photos to network, include date and monitoring position in file name

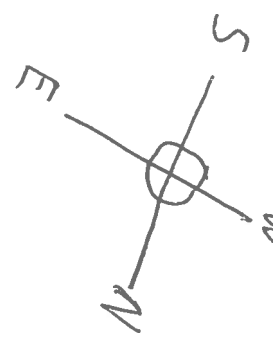
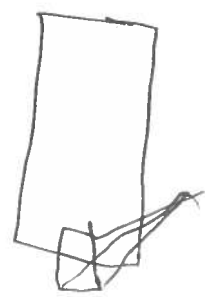
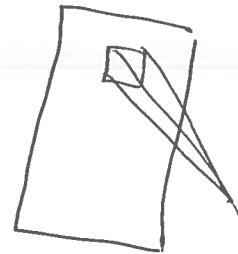
Photo Number	Photo Taken Before (B), During (D), or After (A) Pile Driving	Description
<hr/>		Panoramic photo from monitoring location
	B	
	D	
	A	

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Diagram



Biological Monitor: Joe Bardel

Signature: Joseph Bardel

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Monitor Initials: JAB

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Pile Driving Start and Stop Times³

1. Vibratory hammer start and stop times (include breaks):

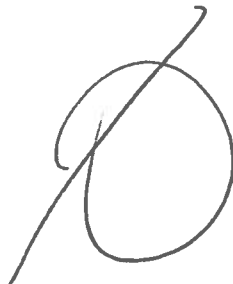
(example: Pile 1: start 1030, stop 1035; start 1041, stop 1051; start 1055; stop 1101)

- 7:45 Start/stop setting the vibratory hammer, switched to pulling wood piles
- 11:54 start monitoring period
- 12:51 stop monitoring period

started shearing of steel piles, because the piles were too corroded to pull out

2. Impact hammer start and stop times, including any restrikes (only note breaks of 30 minutes or more):

(example: Pile 1: start 1030, stop 1130; restrike pile 1: 1355)



³ For vibratory pile driving, note each time the hammer starts and stops. For impact pile driving, note the start and end time for each pile, unless hammering ceases for ≥ 30 minutes) on that pile. Strike counts and times are included in a separate report.

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Additional Notes