

U.S. Army Corps of Engineers (USACE) TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE For use of this form, see ER 415-1-0; the proponent agency is CECW-CE					DATE 1/2/2025		TRANSMITTAL NO. 01 57 19.00 25-5.2			
SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (This section will be initiated by the contractor)										
TO: VANCOUVER RESIDENT OFFICE 4480 SE COLUMBIA WAY VANCOUVER, WA 98661-5570			FROM: Advanced American Construction, Inc. PO Box 83599/8444 NW Saint Helens Road Portland OR 97283		CONTRACT NO. W9127N22C0023		CHECK ONE: <input type="checkbox"/> THIS IS A NEW TRANSMITTAL <input checked="" type="checkbox"/> THIS IS A RESUBMITTAL OF TRANSMITTAL 01 57 19.00 25-5.1			
SPECIFICATION SEC. NO. (Covers only one section with each transmittal) 01 57 19.00 25-			PROJECT TITLE AND LOCATION MCR Sand Island Pile Dike Repairs ,Mouth Columbia River, Clatsop County, OR, Pacific County, WA			THIS TRANSMITTAL IS FOR: (Check one) <input type="checkbox"/> FIO <input checked="" type="checkbox"/> GA <input type="checkbox"/> DA <input type="checkbox"/> CR <input type="checkbox"/> DA/CR <input type="checkbox"/> DA/GA				
ITEM NO. (See Note 3)	DESCRIPTION OF SUBMITTAL ITEM (Type size, model number/etc)			SUBMITTAL TYPE CODE (See Note 8)	NO. OF COPIES	CONTRACT DOCUMENT REFERENCE		CONTRACTOR REVIEW CODE	VARIATION Enter "Y" if requesting a variation (See Note 6)	USACE ACTION CODE (Note 9)
a.	b.			c.	d.	SPEC. PARA. NO. e.	DRAWING SHEET NO. f.	g.	h.	i.
17	Marine Mammal Observation Sheet			TEST REPORTS	0	3.2.2		A	No	
REMARKS This submittal is meant to satisfy monitoring requirements for the 2024 season.										
					I certify that the above submitted items had been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated.					
					NAME OF CONTRACTOR		SIGNATURE OF CONTRACTOR <div>Travis Waggener</div> <div><small>Digitally signed by Travis Waggener DN: cn=US, e=travisw@calliac.com, o=Advanced American Construction, cn=Travis Waggener Reason: I agree to the terms defined by the placement of my signature on this document. Contact info: travisw@calliac.com Date: 2025.01.02 15:15:27-0800</small></div>			
SECTION II - APPROVAL ACTION										
ENCLOSURES RETURNED (List by Item No.)			NAME AND TITLE OF APPROVING AUTHORITY			SIGNATURE OF APPROVING AUTHORITY			DATE	



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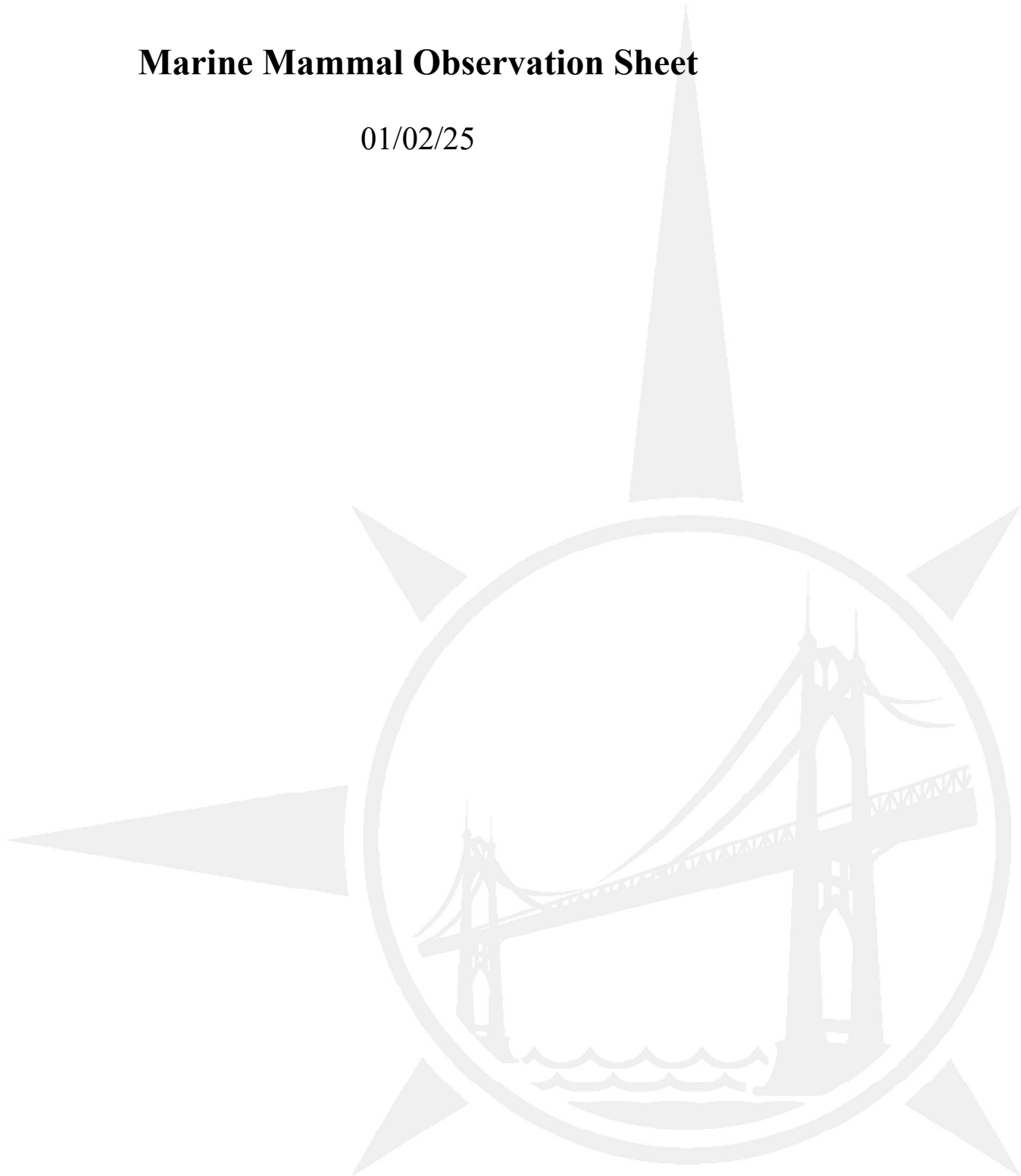
U.S. Army Corps of Engineers
Portland District
333 SW 1st Avenue
Portland, OR 97204

The Dalles Lock and Dam Miter Gate Repair
Contract: W9127N-22-C-0023

AAC Project: 1122-858

Marine Mammal Observation Sheet

01/02/25



Memorandum

December 5, 2024

To: Travis Waggner, Advanced American Construction

From: Caanan Cowles, CMC Consulting

cc: Jered Harvill, Advanced American Construction

Re: Mouth of the Columbia Sand Island Pile Dike Repair

This report provides the marine mammal monitoring results for Season 2 (Summer and Fall 2024) for the Mouth of the Columbia Sand Island Dike Repair Project located at Near East and West Sand Islands at the Mouth of the Columbia River, between Clatsop County, OR and Pacific County, WA. In compliance with the Endangered Species Act and the Marine Mammal Protection Act, marine mammal monitoring was conducted during all in-water pile driving activities for the Project. As part of the Marine Mammal Protection Act compliance, the National Marine Fisheries Service issued an Incidental Harassment Authorization (IHA) for in-water pile driving and removal, which allows take of marine mammals by harassment incidental to pile driving activities in the Mouth of the Columbia River.

Marine Mammal Monitoring Methods

Season 2 marine mammal monitoring methods and protocols were established per agency guidelines and permits, based on information in the following Project monitoring plan and permit documents:

- *Incidental Harassment Authorization: Mouth of the Columbia River Sand Island Dike Repair August 1, 2023, through July 31, 2024 (NOAA 2022)*
- *Marine Mammal Protection Act Incidental Harassment Authorization for the Mouth of the Columbia River Sand Island Dike Repair Project (NOAA 2022)*

Under the 2023 IHA, the Project is required to monitor 7 species (NOAA 2022). The 7 species are organized into the following five functional hearing groups:

- High-Frequency Cetaceans (Porpoises)
 - Harbor porpoise (*Phocoena phocoena*)
- Mid-Frequency Cetaceans (Dolphins and Whales)
 - West coast transient killer whales (*Orcinus orca*)
- Low-Frequency Cetaceans (Whales)
 - Humpback whale (*Megaptera novaeangliae*)
- Otariid Pinnipeds (Sea Lions/Eared)
 - California sea lion (*Zalophus californianus*)

- Steller sea lion *Eumetopias jubatus*
- Phocid Pinnipeds (Seals/Earless)
 - Elephant seal *Mirounga angustirostris*
 - Harbor seal *Phoca vitulina*

The monitoring area included a Level A Harassment Zone and a Level B Harassment Zone for each group. The two zones varied by the type of pile work and marine mammal functional hearing group (see Table 1 . The Shutdown Zone was composed of areas where a Stop Work Order was to be issued if species were present see Table 2 . Within the Level B Harassment Zones, marine mammals were closely monitored, and take was documented, and work allowed to continue; if the mammals were killer whales or humpback whales, a Stop/Change/Delay Work would be initiated. Level A Harassment Zones and Level B Harassment Zones were established for each hearing group based on the type of in-water pile driving construction activities, including the following:

- 24-inch steel pile installation via vibratory hammer
- 24-inch steel pile installation via impact hammer
- Sheet pile installation via impact hammer
- Sheet pile installation via vibratory hammer

During Season 2, a vibratory hammer and an impact hammer were used for steel pile installation. The Level A Harassment Zones and Level B Harassment Zones implemented during Season 2 are presented on Table 1 and Shutdown Zones are presented on Table 2.

Table 1: Level A Harassment and B Harassment Zones in meters

Pile Type and Method	Level A Harassment Zone (m)					Level B Harassment zone m
	LF Cetacean	MF Cetacean	HF Cetacean	Phocid Pinniped	Otariid Pinniped	
24-in Steel Pile Impact Installation	430	15.3	512.2	230.1	16.8	1000
24-in Steel Pile Vibratory installation	7.9	0.7	11.7	4.8	0.3	5412
Steel Sheet Pile Impact Installation	36.8	3.3	54.4	22.4	1.6	4642
Steel Sheet Pile Vibratory Installation	9.6	0.9	14.2	5.8	0.4	4642

Source: NOAA 2022

Table 2: Shutdown Zones by Hearing Groups

Pile Type and Method	Shutdown Zones by Hearing Group m					Shutdown Zones for Unauthorized Species m)
	LF Cetacean	MF Cetacean	HF Cetacean	Phocid Pinniped	Otariid Pinniped	
24-in Steel Pile Impact Installation	430	25	515	50a	25	1000
24-in Steel Pile Vibratory installation	25	25	25	25	25	5412
Steel Sheet Pile Impact Installation	40	25	55	25	25	4642
Steel Sheet Pile Vibratory Installation	25	25	25	25	25	4642

Source: NOAA 2022

Monitoring was performed by two monitors at opposite ends of the barge in which all pile driving activities occurred. One observer was located at the Project construction site during all vibratory and impact pile installation. One additional observer conducted monitoring at the opposite end of the working barge with an unobstructed view of the surrounding area.

Trained marine mammal monitors from CMC Consulting, used binoculars to search the monitoring zones for the presence of marine mammals during pile driving activities. Observations and positions of marine mammals were recorded on date collection sheets. The following data were collected:

- Date
- Time monitoring activity begins and ends.
- Construction activity during monitoring period.
- Weather conditions and environmental conditions that could deter or prevent marine mammal detections.
- Marine mammal species observed and number of species and sex and age class, if possible
- Time, duration, and location of marine mammals observed.
- Observable species behavior during pile driving and removal activities.
- Pile-related activities taking place during monitoring.
- Distances from pile activities to marine mammals.

Mouth of the Columbia Sand Island Dike Repair Season 2 Marine Mammal Monitoring Results

Marine mammal monitoring during vibratory installation of steel piles, and impact steel pile installation activities was performed by trained marine mammal monitors from CMC Consulting for

33 days between August 1st and October 24th of 2024. Vibratory and impact installations were the primary activities performed during Season 2.

Throughout Season 2, 5 of the 7 potential marine mammal species were observed during the monitoring period: California sea lion, Steller sea lion, harbor seal, harbor porpoise, and humpback whale. Five species were observed in the Level B Harassment Zone during pile vibratory driving activities. Total Level B takes documented during monitoring included 101 California sea lion, 32 harbor seal, 15 Steller sea lion, 3 harbor porpoise, and 7 humpback whale. Total Level A Harassment takes documented is zero, no species of marine mammal were observed during impact driving activities. Overall, no observable changes in behavior in the marine mammal species were noted during vibratory or impact installation of the 24" steel piles.

During Season 2 monitoring, the number of takes documented for California sea lions, harbor seals, harbor porpoise and Steller sea lions were considerably below the maximum number of Level B takes authorized for these species in the Project IHA for Season 2 (NOAA 2022). The total number of humpback whale takes were met and work in-water work was shut -down until the IHA was amended to increase the total number of Level B takes. There were no Level A takes for any observed species in Season 2. Table 3 compares documented take per species to the amount of authorized Level A and Level B takes.

Table 3: Season 2 Take Per Species

Species	Documented Level A Take	IHA-Authorized Level A Take	Documented Level B Take	IHA-Authorized Level B Take
California Sea Lion	0	0	101	3,781
Harbor Seal	0	38	32	15,780
Steller Sea Lion	0	0	15	19,176
Humpback Whale	0	0	7	28*
Killer Whale	0	0	0	10*
Harbor Porpoise	0	16	3	118
Northern Elephant Seal	0	0	0	6

* Revised IHA received by contractor 10-1-24.

Stop Work Initiation

In Season 2, shutdown occurred due to numerous humpback whale observations, a stop-work order was initiated on 9/11/24 to 9/12/24 to avoid surpassing the number of level B takes for that species. Work resumed once the once a revised number of takes were granted by NOAA.

California Sea Lions

In addition to the 101 California sea lion takes documented during the monitoring, 50 California sea lions were observed during the monitoring period that were not documented takes because they were observed more than 30 minutes outside of pile driving and removal activities, outside the Level B Harassment Zone, or were already documented as takes for the day. There were no observable changes in California sea lion behavior during vibratory or impact installation.

California sea lion information from the daily monitoring forms is presented in the tables in Attachment A.

Harbor Seals

In addition to the 32 harbor seal Level B takes documented during the monitoring, 59 harbor seals were observed during the monitoring period that were not documented takes because they were observed more than 30 minutes outside of pile driving and removal activities, outside the Level B Harassment Zone, or were already documented as takes for the day. There were no observable changes in harbor seal behavior during vibratory or impact installation.

Harbor seal information from the daily monitoring forms is presented in the tables in Attachment A.

Steller Sea Lion

In addition to the 15 Steller sea lion Level B take documented during the monitoring, 17 Steller sea lions were observed during the monitoring period that were not documented takes because they were observed more than 30 minutes outside of pile driving and removal activities, outside the Level B Harassment Zone, or were already documented as takes for the day. There were no observable changes in harbor seal behavior during vibratory or impact installation.

Steller sea lion information from the daily monitoring forms is presented in the tables in Attachment A.

Harbor Porpoise

In addition to the 3 harbor porpoise Level B take documented during the monitoring, 14 harbor porpoise were observed during the monitoring period that were not documented takes because they were observed more than 30 minutes outside of pile driving and removal activities, outside the Level B Harassment Zone, or were already documented as takes for the day. There were no observable changes in harbor seal behavior during vibratory or impact installation.

Harbor porpoise information from the daily monitoring forms is presented in the tables in Attachment A.

Killer Whales

No killer whales were observed during Season 2 pile driving activities.

Humpback Whales

In addition to the 7 humpback whale Level B takes documented during the monitoring, 15 humpback whale were observed during the monitoring period that were not documented takes because they were observed more than 30 minutes outside of pile driving and removal activities, outside the Level B Harassment Zone, or were already documented as takes for the day. There were no observable changes in humpback whale behavior during vibratory or impact installation.

Humpback whale information from the daily monitoring forms is presented in the tables in Attachment A.

Northern Elephant Seals

No northern elephant seals were observed during Season 2 pile driving activities.

Mouth of the Columbia River Sand Island Dike Repair Season 2 Supporting Details

Detailed data collected during Season 2 monitoring are presented in Attachment A, as follows:

- Table A-1 provides a summary of the daily log and total number of observations and takes kept by the lead Protected Species Observers located at the Project site.

References

NOAA 2022. *Request for Incidental Harassment Authorization: Waterfront Park Reconstruction Project 2022–2023*. Waterfront Park Reconstruction Project. 2021.

NMFS (National Marine Fisheries Service , 2018. *Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts*. U.S. Dept. of Commerce, NOAA. NOAA Technical Memorandum NMFS-OPR-59, 178 p.

NOAA (National Oceanic and Atmospheric Administration , 2022. *Marine Mammal Protection Act Incidental Harassment Authorization for the Pier 58 Reconstruction Project*. May 2022.

Attachment A

Monitoring Data

Attachment A-1: Daily log and Total Observation of All Species and Takes

Date	Observer	Observer Location	Species	Time	Number	Bearing	Distance to Pile	Behavior	Weather	Beaufort	Construction Activity	Take Level	Takes
8/1/2024	MP	Stern	HASE	15:49	2	NW	180	TRAVEL	CLEAR	1	NONE	N/A	0
8/1/2024	MP	Stern	HASE	16:04	1	S	15	TRAVEL	CLEAR	1	NONE	N/A	0
8/1/2024	CMC	Bow	STSL	13:47	1	SW	104	TRAVEL	CLEAR	1	NONE	N/A	0
8/1/2024	MP	Stern	STSL	13:42	1	NE	100	TRAVEL	CLEAR	1	NONE	N/A	0
8/1/2024	MP	Stern	STSL	13:51	1	SW	140	TRAVEL	CLEAR	1	NONE	N/A	0
8/1/2024	MP	Stern	STSL	15:53	1	SE	15	TRAVEL	CLEAR	1	NONE	N/A	0
8/1/2024	MP	Stern	STSL	16:04	1	SE	200	STATIONARY	CLEAR	1	VIBE	B	1
8/2/2024	CMC	Bow	CASL	13:48	3	N	209	TRAVEL	CLOUDY	1	VIBE	B	3
8/2/2024	MP	Stern	HAPO	14:19	1	SW	210	TRAVEL	CLOUDY	1	NONE	N/A	0
8/2/2024	CMC	Bow	HASE	10:42	1	E	115	TRAVEL	CLOUDY	1	NONE	N/A	0
8/2/2024	CMC	Bow	HASE	11:27	1	NE	128	TRAVEL	CLOUDY	1	NONE	N/A	0
8/2/2024	MP	Stern	HASE	10:42	1	SE	150	TRAVEL	CLOUDY	1	NONE	N/A	0
8/2/2024	MP	Stern	HASE	11:26	1	NE	150	STATIONARY	CLOUDY	1	NONE	N/A	0
8/2/2024	MP	Stern	HASE	13:06	1	SE	200	STATIONARY	CLOUDY	1	VIBE	B	1
8/2/2024	MP	Stern	HASE	13:26	1	SE	250	TRAVEL	CLOUDY	1	VIBE	B	1
8/2/2024	MP	Stern	HASE	16:33	1	SW	210	STATIONARY	CLOUDY	1	VIBE	B	1
8/2/2024	CMC	Bow	STSL	13:40	1	S	138	TRAVEL	CLOUDY	1	VIBE	B	1
8/2/2024	MP	Stern	STSL	10:51	1	SE	180	TRAVEL	CLOUDY	1	VIBE	B	1
8/2/2024	MP	Stern	STSL	11:31	1	SE	150	TRAVEL	CLOUDY	1	NONE	N/A	0
8/2/2024	MP	Stern	STSL	11:45	1	SE	180	TRAVEL	CLOUDY	1	NONE	N/A	0
8/3/2024	CMC	Bow	CASL	11:10	1	E	150	TRAVEL	CLOUDY	1	VIBE	B	1
8/3/2024	MP	Stern	CASL	10:15	1	NW	190	TRAVEL	CLOUDY	2	NONE	N/A	0
8/3/2024	MP	Stern	CASL	11:47	1	SE	330	TRAVEL	CLOUDY	2	VIBE	B	1
8/3/2024	MP	Stern	CASL	13:18	1	SE	250	FEEDING	PARTLY CLOUD	2	VIBE	B	1
8/3/2024	CMC	Bow	HAPO	9:01	3	E	950	TRAVEL	CLOUDY	1	NONE	N/A	0
8/3/2024	MP	Stern	HAPO	10:12	2	SSW	150	TRAVEL	CLOUDY	2	NONE	N/A	0
8/3/2024	MP	Stern	HAPO	10:56	1	W	120	TRAVEL	CLOUDY	2	NONE	N/A	0
8/3/2024	MP	Stern	HAPO	13:12	1	S	200	TRAVEL	PARTLY CLOUD	2	NONE	N/A	0
8/3/2024	CMC	Bow	HASE	9:07	1	E	700	DIVE	CLOUDY	1	NONE	N/A	0
8/3/2024	MP	Stern	HASE	9:02	1	SSW	90	STATIONARY	CLOUDY	2	NONE	N/A	0
8/3/2024	MP	Stern	HASE	9:27	1	SE	200	STATIONARY	CLOUDY	2	VIBE	B	1
8/3/2024	MP	Stern	HASE	10:14	1	W	180	STATIONARY	CLOUDY	2	NONE	N/A	0
8/3/2024	MP	Stern	HASE	11:03	1	W	160	STATIONARY	CLOUDY	2	VIBE	B	1
8/3/2024	MP	Stern	HASE	11:38	1	SE	220	STATIONARY	CLOUDY	2	NONE	N/A	0
8/3/2024	CMC	Bow	STSL	11:44	1	SE	410	TRAVEL	CLOUDY	2	VIBE	B	1
8/3/2024	MP	Stern	STSL	11:14	1	S	160	TRAVEL	CLOUDY	2	NONE	N/A	0
8/6/2024	CMC	Bow	CASL	14:58	2	N	246	DIVE	CLEAR	2	VIBE	B	2
8/6/2024	CMC	Bow	CASL	15:14	1	N	72	TRAVEL	CLEAR	2	NONE	N/A	0
8/6/2024	CMC	Bow	CASL	16:34	1	N	110	TRAVEL	CLEAR	2	VIBE	B	1
8/6/2024	MP	Stern	CASL	10:38	1	E	150	TRAVEL	CLOUDY	2	NONE	N/A	0
8/6/2024	CMC	Bow	HAPO	11:41	1	E	1100	TRAVEL	CLEAR	2	VIBE	B	1
8/6/2024	MP	Stern	HAPO	11:12	2	SSE	350	FEEDING	CLOUDY	2	VIBE	B	2
8/6/2024	CMC	Bow	HASE	8:14	1	E	88	DIVE	CLOUDY	1	NONE	N/A	0
8/6/2024	MP	Stern	HASE	8:12	1	SSW	150	STATIONARY	CLOUDY	2	NONE	N/A	0
8/6/2024	MP	Stern	HASE	9:02	1	S	310	STATIONARY	CLOUDY	2	NONE	N/A	0
8/6/2024	MP	Stern	HASE	10:32	1	NW	130	STATIONARY	CLOUDY	2	NONE	N/A	0
8/6/2024	MP	Stern	HASE	12:58	1	NE	70	STATIONARY	CLOUDY	2	VIBE	B	1
8/6/2024	CMC	Bow	STSL	12:54	1	N	44	TRAVEL	CLEAR	1	NONE	N/A	0
8/6/2024	CMC	Bow	STSL	14:44	1	N	49	TRAVEL	CLEAR	2	NONE	N/A	0
8/6/2024	CMC	Bow	STSL	14:48	1	NW	152	TRAVEL	CLEAR	2	VIBE	B	1
8/6/2024	MP	Stern	STSL	10:28	1	E	120	TRAVEL	CLOUDY	2	NONE	N/A	0
8/6/2024	MP	Stern	STSL	10:29	1	SE	80	TRAVEL	CLOUDY	2	NONE	N/A	0
8/6/2024	MP	Stern	STSL	12:54	1	N	45	TRAVEL	CLOUDY	2	NONE	N/A	0
8/6/2024	MP	Stern	STSL	12:59	1	N	120	FEEDING	CLOUDY	2	VIBE	B	1
8/7/2024	CMC	Bow	CASL	8:19	1	N	83	FEEDING	CLOUDY	1	NONE	N/A	0
8/7/2024	CMC	Bow	CASL	13:47	1	N	91	DIVE	CLOUDY	1	VIBE	B	1
8/7/2024	CMC	Bow	CASL	14:08	1	N	48	DIVE	CLOUDY	1	VIBE	B	1

Date	Observer	Observer Location	Species	Time	Number	Bearing	Distance to Pile	Behavior	Weather	Beaufort	Construction Activity	Take Level	Takes
8/7/2024	CMC	Bow	CASL	15:22	1	N	119	DIVE	CLOUDY	1	IMPACT	B	1
8/7/2024	CMC	Bow	CASL	15:23	1	SE	88	DIVE	CLOUDY	1	IMPACT	B	1
8/7/2024	MP	Stern	CASL	8:23	1	W	200	DIVE	CLOUDY	1	VIBE	B	1
8/7/2024	MP	Stern	HASE	11:14	1	W	140	TRAVEL	PARTLY CLOUD	1	VIBE	B	1
8/7/2024	MP	Stern	HASE	12:47	2	E	230	TRAVEL	CLEAR	1	NONE	N/A	0
8/7/2024	MP	Stern	HASE	13:01	2	E	230	STATIONARY	CLEAR	1	VIBE	B	2
8/7/2024	MP	Stern	MENO	15:32	1	S	4023	TRAVEL	CLEAR	1	IMPACT	N/A	0
8/7/2024	CMC	Bow	STSL	13:47	1	N	91	DIVE	CLOUDY	1	VIBE	B	1
8/7/2024	CMC	Bow	STSL	14:24	1	N	67	DIVE	CLOUDY	1	VIBE	B	1
8/7/2024	CMC	Bow	STSL	14:32	1	NE	225	TRAVEL	CLOUDY	1	VIBE	B	1
8/7/2024	MP	Stern	STSL	13:44	1	NE	60	FEEDING	CLEAR	1	NONE	N/A	0
8/7/2024	MP	Stern	STSL	13:49	1	SE	100	TRAVEL	CLEAR	1	NONE	N/A	0
8/7/2024	MP	Stern	STSL	14:18	1	NE	150	TRAVEL	CLEAR	1	VIBE	B	1
8/7/2024	MP	Stern	STSL	14:36	1	S	140	TRAVEL	CLEAR	1	VIBE	B	1
8/7/2024	MP	Stern	STSL	14:39	1	W	180	TRAVEL	CLEAR	1	VIBE	B	1
8/9/2024	CMC	Bow	CASL	13:55	2	N	65	DIVE	CLOUDY	2	NONE	N/A	0
8/9/2024	CMC	Bow	CASL	14:10	1	SE	110	DIVE	CLOUDY	2	VIBE	B	1
8/9/2024	CMC	Bow	CASL	14:17	1	NE	81	TRAVEL	CLOUDY	2	VIBE	B	1
8/9/2024	MP	Stern	CASL	9:41	1	W	80	TRAVEL	CLOUDY	2	NONE	N/A	0
8/9/2024	MP	Stern	CASL	12:47	1	W	100	TRAVEL	CLOUDY	2	VIBE	B	1
8/9/2024	MP	Stern	CASL	12:58	1	SW	110	TRAVEL	CLOUDY	2	VIBE	B	1
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8/9/2024	MP	Stern	CASL	14:15	1	E	120	TRAVEL	CLOUDY	2	VIBE	B	1
8/9/2024	MP	Stern	CASL	14:29	1	E	300	FEEDING	CLOUDY	2	VIBE	B	1
8/9/2024	CMC	Bow	HASE	11:15	1	E	198	TRAVEL	CLOUDY	2	NONE	N/A	0
8/9/2024	CMC	Bow	HASE	11:19	1	SE	175	TRAVEL	CLOUDY	2	VIBE	B	1
8/9/2024	MP	Stern	HASE	14:57	1	E	250	STATIONARY	CLOUDY	2	NONE	N/A	0
8/9/2024	CMC	Bow	STSL	13:55	1	N	72	DIVE	CLOUDY	2	NONE	N/A	0
8/9/2024	CMC	Bow	STSL	14:12	1	N	76	DIVE	CLOUDY	2	VIBE	B	1
8/12/2024	MP	Stern	MENO	14:02	1	SW	1700	TRAVEL	CLOUDY	2	NONE	N/A	0
8/12/2024	MP	Stern	MENO	14:26	1	SW	650	FEEDING	CLOUDY	2	NONE	N/A	0
8/12/2024	MP	Stern	MENO	15:05	1	S	2500	TRAVEL	CLOUDY	2	NONE	N/A	0
8/12/2024	MP	Stern	MENO	15:40	2	SSE	1500	FEEDING	CLOUDY	2	NONE	N/A	0
8/12/2024	MP	Stern	MENO	16:14	1	S	400	TRAVEL	CLOUDY	2	NONE	N/A	0
8/13/2024	CMC	Bow	CASL	11:15	1	E	53	DIVE	CLOUDY	1	NONE	N/A	0
8/13/2024	CMC	Bow	CASL	13:19	1	S	19	TRAVEL	CLOUDY	1	NONE	N/A	0
8/13/2024	MP	Stern	MENO	13:40	1	SW	450	TRAVEL	CLEAR	2	VIBE	B	1
8/13/2024	MP	Stern	MENO	14:11	1	S	1200	FEEDING	CLEAR	2	NONE	N/A	0
8/14/2024	MP	Stern	CASL	9:24	1	SSW	100	TRAVEL	PARTLY CLOUD	2	NONE	N/A	0
8/14/2024	MP	Stern	CASL	10:26	1	E	75	TRAVEL	PARTLY CLOUD	2	VIBE	B	1
8/14/2024	MP	Stern	CASL	11:50	1	S	130	TRAVEL	PARTLY CLOUD	2	VIBE	B	1
8/14/2024	MP	Stern	CASL	12:43	1	SSW	110	TRAVEL	PARTLY CLOUD	2	VIBE	B	1
8/14/2024	MP	Stern	CASL	13:01	1	SE	180	TRAVEL	PARTLY CLOUD	2	VIBE	B	1
8/14/2024	MP	Stern	CASL	13:16	1	E	200	PORPOISING	PARTLY CLOUD	2	VIBE	B	1
8/14/2024	CMC	Bow	CASL	8:12	1	N	167	TRAVEL	PARTLY CLOUD	0	VIBE	B	1
8/14/2024	CMC	Bow	CASL	9:10	2	N	38	DIVE	PARTLY CLOUD	0	NONE	N/A	0
8/14/2024	MP	Stern	HASE	8:08	1	W	130	TRAVEL	PARTLY CLOUD	2	NONE	N/A	0
8/14/2024	MP	Stern	HASE	8:11	1	S	320	TRAVEL	PARTLY CLOUD	2	VIBE	B	1
8/14/2024	MP	Stern	HASE	8:19	1	E	130	TRAVEL	PARTLY CLOUD	2	VIBE	B	1
8/14/2024	MP	Stern	HASE	9:21	1	SW	150	MILLING	PARTLY CLOUD	2	NONE	N/A	0
8/14/2024	MP	Stern	HASE	9:28	2	E	80	MILLING	PARTLY CLOUD	2	VIBE	B	1
8/14/2024	MP	Stern	HASE	11:46	1	SE	140	STATIONARY	PARTLY CLOUD	2	VIBE	B	1
8/14/2024	MP	Stern	HASE	11:50	1	D	120	TRAVEL	PARTLY CLOUD	2	NONE	N/A	0
8/14/2024	CMC	Bow	HASE	7:48	1	E	63	TRAVEL	PARTLY CLOUD	0	NONE	N/A	0
8/14/2024	CMC	Bow	HASE	8:08	1	E	51	DIVE	PARTLY CLOUD	0	NONE	N/A	0
8/14/2024	CMC	Bow	HASE	8:16	1	E	181	TRAVEL	PARTLY CLOUD	0	NONE	N/A	0
8/14/2024	CMC	Bow	HASE	8:18	1	SE	172	TRAVEL	PARTLY CLOUD	0	VIBE	B	1

Date	Observer	Observer Location	Species	Time	Number	Bearing	Distance to Pile	Behavior	Weather	Beaufort	Construction Activity	Take Level	Takes
8/14/2024	CMC	Bow	HASE	13:15	1	E	138	DIVE	PARTLY CLOUD	2	VIBE	B	1
8/14/2024	MP	Stern	MENO	14:46	1	SW	500	TRAVEL	CLOUDY	2	VIBE	B	1
8/14/2024	CMC	Bow	STSL	9:11	1	N	184	FEEDING	PARTLY CLOUD	0	NONE	N/A	0
8/14/2024	CMC	Bow	STSL	11:28	1	NE	63	DIVE	PARTLY CLOUD	1	NONE	N/A	0
8/14/2024	CMC	Bow	STSL	13:00	1	NE	237	TRAVEL	PARTLY CLOUD	2	VIBE	B	1
8/15/2024	CMC	Bow	CASL	8:46	1	NE	250	FEEDING	CLOUDY	0	VIBE	B	1
8/15/2024	MP	Stern	CASL	8:12	1	120	210	TRAVEL	CLOUDY	2	VIBE	B	1
8/15/2024	MP	Stern	CASL	8:15	1	80	85	TRAVEL	CLOUDY	2	VIBE	B	1
8/15/2024	MP	Stern	CASL	8:46	1	60	210	PORPOISING	CLOUDY	2	VIBE	B	1
8/15/2024	MP	Stern	CASL	12:47	1	150	80	TRAVEL	CLOUDY	2	NONE	N/A	0
8/15/2024	CMC	Bow	HASE	8:52	1	E	61	TRAVEL	CLOUDY	0	VIBE	B	1
8/15/2024	MP	Stern	HASE	7:53	1	240	180	MILLING	CLOUDY	2	NONE	N/A	0
8/15/2024	MP	Stern	HASE	8:04	1	130	140	TRAVEL	CLOUDY	2	NONE	N/A	0
8/15/2024	MP	Stern	HASE	8:18	1	120	280	TRAVEL	CLOUDY	2	VIBE	B	1
8/15/2024	MP	Stern	HASE	8:37	1	70	120	TRAVEL	CLOUDY	2	NONE	N/A	0
8/15/2024	MP	Stern	HASE	8:37	1	160	130	TRAVEL	CLOUDY	2	NONE	N/A	0
8/15/2024	MP	Stern	HASE	9:59	1	55	70	STATIONARY	CLOUDY	2	NONE	N/A	0
8/16/2024	MP	Stern	CASL	8:43	1	75	100	TRAVEL	CLEAR	1	VIBE	B	1
8/16/2024	MP	Stern	CASL	9:05	1	120	160	MILLING	CLEAR	1	VIBE	B	1
8/16/2024	MP	Stern	CASL	9:09	1	210	180	TRAVEL	CLEAR	1	VIBE	B	1
8/16/2024	MP	Stern	CASL	9:15	1	160	280	TRAVEL	CLEAR	1	VIBE	B	1
8/16/2024	MP	Stern	CASL	10:07	1	90	170	TRAVEL	CLEAR	1	VIBE	B	1
8/16/2024	MP	Stern	CASL	11:37	1	165	100	TRAVEL	CLEAR	1	NONE	N/A	0
8/16/2024	MP	Stern	CASL	13:03	1	180	70	TRAVEL	CLOUDY	1	NONE	N/A	0
8/16/2024	MP	Stern	CASL	13:05	1	210	60	TRAVEL	CLOUDY	1	NONE	N/A	0
8/16/2024	CMC	Bow	CASL	9:02	1	180	71	STATIONARY	CLEAR	0	NONE	N/A	0
8/16/2024	CMC	Bow	CASL	9:06	1	135	126	FEEDING	CLEAR	0	VIBE	B	1
8/16/2024	CMC	Bow	CASL	10:22	1	180	58	DIVE	CLEAR	0	VIBE	B	1
8/16/2024	CMC	Bow	CASL	11:03	1	90	110	DIVE	CLEAR	1	VIBE	B	1
8/16/2024	MP	Stern	HASE	7:54	1	270	80	MILLING	PARTLY CLOUD	1	NONE	N/A	0
8/16/2024	MP	Stern	HASE	10:16	1	160	235	TRAVEL	CLEAR	1	VIBE	B	1
8/16/2024	MP	Stern	HASE	11:39	1	200	200	TRAVEL	CLEAR	2	NONE	N/A	0
8/20/2024	MP	Stern	CASL	11:00	1	0	100	FEEDING	CLOUDY	3	NONE	N/A	0
8/20/2024	MP	Stern	CASL	11:32	1	320	90	TRAVEL	CLOUDY	3	NONE	N/A	0
8/20/2024	MP	Stern	CASL	13:30	1	210	140	TRAVEL	CLOUDY	2	VIBE	B	1
8/20/2024	MP	Stern	HAPO	13:01	2	85	500	MILLING	CLOUDY	2	NONE	N/A	0
8/20/2024	MP	Stern	HASE	16:18	1	180	240	FEEDING	CLOUDY	2	NONE	N/A	0
8/20/2024	MP	Stern	STSL	13:09	1	70	120	TRAVEL	RAIN	2	VIBE	B	1
8/21/2024	MP	Stern	CASL	10:39	1	230	160	PORPOISING	CLOUDY	2	VIBE	B	1
8/21/2024	MP	Stern	CASL	10:53	1	95	80	TRAVEL	CLOUDY	2	NONE	N/A	0
8/21/2024	MP	Stern	CASL	11:04	1	23	100	TRAVEL	CLOUDY	2	NONE	N/A	0
8/22/2024	CMC	Bow	CASL	13:06	3	15	250	TRAVEL	CLOUDY	0	VIBE	B	3
8/22/2024	MP	Stern	CASL	13:41	1	90	70	TRAVEL	CLOUDY	1	NONE	N/A	0
8/22/2024	CMC	Bow	HASE	13:14	1	45	91	STATIONARY	CLOUDY	0	VIBE	B	1
8/22/2024	MP	Stern	HASE	9:07	1	170	170	TRAVEL	CLOUDY	2	NONE	N/A	0
8/22/2024	MP	Stern	HASE	11:23	1	220	90	MILLING	CLOUDY	1	NONE	N/A	0
8/23/2024	CMC	Bow	CASL	8:39	1	10	125	PORPOISING	PARTLY CLOUD	0	VIBE	B	1
8/23/2024	CMC	Bow	CASL	13:27	1	80	55	FEEDING	PARTLY CLOUD	0	NONE	N/A	0
8/23/2024	CMC	Bow	HASE	13:18	1	90	125	TRAVEL	PARTLY CLOUD	0	VIBE	B	1
8/23/2024	MP	Stern	HASE	13:55	1	150	90	TRAVEL	CLOUDY	2	NONE	N/A	0
8/26/2024	CMC	Bow	CASL	9:03	1	90	250	PORPOISING	CLOUDY	1	NONE	N/A	0
8/26/2024	CMC	Bow	CASL	10:03	2	10	96	FEEDING	CLOUDY	1	VIBE	B	2
8/26/2024	CMC	Bow	CASL	11:06	3	15	300	TRAVEL	CLOUDY	1	VIBE	B	3
8/26/2024	MP	Stern	CASL	9:12	2	140	330	PORPOISING	PARTLY CLOUD	1	VIBE	B	2
8/26/2024	MP	Stern	CASL	10:48	3	140	200	TRAVEL	CLEAR	1	VIBE	B	3
8/26/2024	MP	Stern	CASL	11:00	1	155	270	TRAVEL	CLEAR	1	NONE	N/A	0
8/26/2024	MP	Stern	CASL	11:05	1	155	100	TRAVEL	CLEAR	1	VIBE	B	1

Date	Observer	Observer Location	Species	Time	Number	Bearing	Distance to Pile	Behavior	Weather	Beaufort	Construction Activity	Take Level	Takes
8/26/2024	MP	Stern	HAPO	9:53	1	190	90	TRAVEL	CLEAR	1	NONE	N/A	0
8/26/2024	MP	Stern	HASE	9:59	1	170	90	TRAVEL	CLEAR	1	VIBE	B	1
8/26/2024	MP	Stern	HASE	10:19	1	160	200	MILLING	CLEAR	1	NONE	N/A	0
8/26/2024	MP	Stern	HASE	10:31	2	125	130	MILLING	CLEAR	1	NONE	N/A	0
8/27/2024	CMC	Bow	CASL	10:22	1	90	85	MILLING	PARTLY CLOUDY	1	NONE	N/A	0
8/27/2024	MP	Stern	CASL	8:23	1	100	420	TRAVEL	CLEAR	1	VIBE	B	1
8/27/2024	MP	Stern	CASL	10:25	1	80	75	TRAVEL	CLEAR	1	VIBE	B	1
8/27/2024	MP	Stern	HAPO	7:53	2	160	90	TRAVEL	CLOUDY	1	NONE	N/A	0
8/27/2024	CMC	Bow	HASE	11:18	2	90	40	DIVE	PARTLY CLOUDY	1	NONE	N/A	0
8/27/2024	MP	Stern	HASE	10:09	1	140	85	TRAVEL	CLEAR	1	NONE	N/A	0
8/27/2024	MP	Stern	HASE	10:41	1	160	90	MILLING	PARTLY CLOUDY	1	NONE	N/A	0
8/27/2024	MP	Stern	HASE	13:35	2	180	120	TRAVEL	CLEAR	1	NONE	N/A	0
9/3/2024	MP	Stern	CASL	13:49	1	200	360	TRAVEL	CLOUDY	1	NONE	N/A	0
9/3/2024	MP	Stern	CASL	13:56	1	250	350	TRAVEL	CLOUDY	1	NONE	N/A	0
9/3/2024	MP	Stern	CASL	16:12	1	130	80	TRAVEL	CLEAR	1	VIBE	B	1
9/3/2024	CMC	Bow	HASE	16:43	1	45	339	TRAVEL	PARTLY CLOUDY	1	VIBE	B	1
9/3/2024	MP	Stern	HASE	13:46	1	315	90	MILLING	CLOUDY	1	NONE	N/A	0
9/4/2024	CMC	Bow	CASL	8:59	1	350	450	MILLING	FOGGY	0	VIBE	B	1
9/4/2024	CMC	Bow	CASL	9:22	1	10	225	TRAVEL	FOGGY	0	NONE	N/A	0
9/4/2024	CMC	Bow	CASL	10:33	3	10	331	MILLING	FOGGY	0	IMPACT	B	3
9/4/2024	CMC	Bow	CASL	11:25	1	90	46	TRAVEL	CLEAR	1	VIBE	B	1
9/4/2024	MP	Stern	CASL	8:56	1	140	300	TRAVEL	FOGGY	1	VIBE	B	1
9/4/2024	MP	Stern	CASL	9:01	1	265	275	MILLING	FOGGY	1	VIBE	B	1
9/4/2024	MP	Stern	CASL	9:24	1	130	250	TRAVEL	FOGGY	1	VIBE	B	1
9/4/2024	MP	Stern	CASL	12:12	3	260	150	FEEDING	CLEAR	1	NONE	N/A	0
9/4/2024	MP	Stern	CASL	12:32	7	230	250	FEEDING	CLEAR	2	VIBE	B	7
9/4/2024	MP	Stern	HASE	11:18	1	180	150	MILLING	CLEAR	1	VIBE	B	1
9/5/2024	CMC	Bow	CASL	8:04	4	0	335	MILLING	CLEAR	1	VIBE	B	4
9/5/2024	CMC	Bow	CASL	9:11	1	90	22	TRAVEL	CLEAR	1	NONE	N/A	0
9/5/2024	CMC	Bow	CASL	11:03	1	50	110	TRAVEL	CLEAR	1	VIBE	B	1
9/5/2024	CMC	Bow	CASL	11:44	1	150	75	TRAVEL	CLEAR	1	VIBE	B	1
9/5/2024	MP	Stern	CASL	8:01	2	285	280	MILLING	CLEAR	2	NONE	N/A	0
9/5/2024	MP	Stern	CASL	8:06	4	285	280	MILLING	CLEAR	2	VIBE	B	4
9/5/2024	MP	Stern	CASL	11:22	1	285	120	FEEDING	CLEAR	2	NONE	N/A	0
9/5/2024	MP	Stern	CASL	11:37	1	290	140	FEEDING	CLEAR	2	VIBE	B	1
9/5/2024	MP	Stern	CASL	13:20	3	275	280	MILLING	FOGGY	2	VIBE	B	3
9/5/2024	MP	Stern	CASL	14:56	2	270	200	MILLING	FOGGY	2	VIBE	N/A	0
9/5/2024	CMC	Bow	HASE	9:10	1	45	68	TRAVEL	CLEAR	1	NONE	N/A	0
9/5/2024	CMC	Bow	HASE	11:05	1	15	300	FEEDING	CLEAR	1	VIBE	B	1
9/5/2024	MP	Stern	HASE	11:35	1	260	220	MILLING	CLEAR	2	VIBE	B	1
9/5/2024	MP	Stern	HASE	13:54	1	250	110	MILLING	FOGGY	2	VIBE	B	1
9/5/2024	MP	Stern	HASE	15:47	1	160	160	TRAVEL	CLEAR	1	NONE	N/A	0
9/9/2024	CMC	Bow	CASL	10:29	1	190	175	TRAVEL	CLOUDY	2	VIBE	B	1
9/9/2024	CMC	Bow	CASL	14:26	1	20	79	FEEDING	CLOUDY	2	VIBE	B	1
9/9/2024	CMC	Bow	CASL	8:28	2	180	81	TRAVEL	CLOUDY	2	NONE	N/A	0
9/9/2024	CMC	Bow	CASL	8:57	1	180	62	TRAVEL	CLOUDY	2	NONE	N/A	0
9/9/2024	CMC	Bow	CASL	9:04	1	21	313	FEEDING	CLOUDY	2	NONE	N/A	0
9/9/2024	MP	Stern	CASL	8:57	2	110	80	TRAVEL	CLOUDY	1	NONE	N/A	0
9/9/2024	MP	Stern	CASL	9:29	1	145	100	TRAVEL	CLOUDY	1	VIBE	B	1
9/9/2024	MP	Stern	CASL	11:52	1	231	110	PORPOISING	PARTLY CLOUDY	1	VIBE	B	1
9/9/2024	MP	Stern	CASL	13:36	1	200	250	TRAVEL	PARTLY CLOUDY	1	NONE	N/A	0
9/9/2024	MP	Stern	CASL	14:05	2	240	200	MILLING	PARTLY CLOUDY	1	NONE	N/A	0
9/9/2024	CMC	Bow	HASE	11:50	1	75	185	MILLING	CLOUDY	2	VIBE	B	1
9/9/2024	CMC	Bow	HASE	14:07	1	80	73	DIVE	CLOUDY	2	NONE	N/A	0
9/9/2024	CMC	Bow	HASE	8:38	1	145	47	TRAVEL	CLOUDY	2	NONE	N/A	0
9/9/2024	MP	Stern	HASE	9:13	1	190	90	MILLING	CLOUDY	1	NONE	N/A	0
9/9/2024	MP	Stern	HASE	13:19	2	250	160	MILLING	PARTLY CLOUDY	1	NONE	N/A	0

Date	Observer	Observer Location	Species	Time	Number	Bearing	Distance to Pile	Behavior	Weather	Beaufort	Construction Activity	Take Level	Takes
9/9/2024	MP	Stern	MENO	9:00	1	260	300	TRAVEL	CLOUDY	1	NONE	N/A	0
9/9/2024	MP	Stern	MENO	9:06	1	260	800	TRAVEL	CLOUDY	1	VIBE	B	1
9/9/2024	MP	Stern	MENO	9:21	1	280	1000	TRAVEL	CLOUDY	1	NONE	N/A	0
9/9/2024	MP	Stern	MENO	1409	1	240	5600	TRAVEL	PARTLY CLOUD	1	VIBE	N/A	0
9/9/2024	MP	Stern	MENO	14:21	1	225	2800	TRAVEL	PARTLY CLOUD	1	VIBE	B	1
10/8/2024	MP	Stern	CASL	14:46	1	290	70	TRAVEL	RAIN	2	NONE	N/A	0
10/8/2024	MP	Stern	HASE	14:01	1	230	180	MILLING	RAIN	2	VIBE	B	1
10/8/2024	MP	Stern	HASE	14:26	2	45	130	MILLING	RAIN	2	IMPACT	B	2
10/8/2024	MP	Stern	HASE	14:56	1	0	90	MILLING	RAIN	2	VIBE	B	1
10/9/2024	MP	Stern	CASL	15:00	1	160	75	MILLING	CLEAR	2	VIBE	B	1
10/9/2024	CMC	Bow	HASE	14:34	1	90	71	TRAVEL	PARTLY CLOUD	1	NONE	N/A	0
10/9/2024	MP	Stern	HASE	9:18	1	175	200	MILLING	PARTLY CLOUD	2	NONE	N/A	0
10/10/2024	MP	Stern	CASL	10:54	1	200	200	MILLING	CLEAR	2	NONE	N/A	0
10/10/2024	MP	Stern	CASL	10:57	1	120	80	TRAVEL	CLEAR	2	VIBE	B	1
10/10/2024	MP	Stern	CASL	11:00	1	240	180	TRAVEL	CLEAR	2	VIBE	B	1
10/10/2024	MP	Stern	HAPO	8:56	1	150	100	TRAVEL	FOGGY	2	NONE	N/A	0
10/10/2024	MP	Stern	HASE	15:44	2	270	800	MILLING	CLEAR	2	NONE	N/A	0
10/11/2024	CMC	Bow	CASL	9:05	1	90	400	PORPOISING	PARTLY CLOUD	2	VIBE	B	1
10/11/2024	MP	Stern	CASL	12:55	3	220	1000	PORPOISING	CLOUDY	3	VIBE	B	3
10/11/2024	MP	Stern	HASE	8:29	1	130	65	TRAVEL	CLOUDY	2	NONE	N/A	0
10/11/2024	MP	Stern	MENO	8:12	1	200	800	TRAVEL	CLOUDY	2	NONE	N/A	0
10/11/2024	MP	Stern	MENO	8:12	1	220	3000	TRAVEL	CLOUDY	2	NONE	N/A	0
10/11/2024	MP	Stern	MENO	8:35	2	175	1500	TRAVEL	CLOUDY	2	NONE	N/A	0
10/11/2024	MP	Stern	MENO	8:40	2	150	1800	TRAVEL	CLOUDY	3	VIBE	B	2
10/11/2024	MP	Stern	MENO	10:41	1	220	4000	TRAVEL	CLOUDY	3	VIBE	B	1
10/22/2024	MP	Stern	CASL	15:01	1	200	200	FEEDING	CLEAR	1	VIBE	B	1
10/23/2024	CMC	Bow	CASL	16:35	1	14	201	PORPOISING	PARTLY CLOUD	2	VIBE	B	1
10/23/2024	MP	Stern	CASL	8:46	1	0	350	PORPOISING	CLEAR	1	VIBE	B	1

Attachment A-2: Daily Start and End Times for Marine Mammal Monitoring

Date	MMM Start Time	MMM End Time
8/1/2024	10:20	16:45
8/2/2024	10:15	17:15
8/3/2024	9:00	14:59
8/6/2024	7:39	17:07
8/7/2024	7:48	17:01
8/9/2024	8:36	15:48
8/12/2024	10:11	14:56
8/13/2024	7:29	14:45
8/14/2024	7:39	14:46
8/15/2024	7:30	15:39
8/16/2024	7:40	14:43
8/20/2024	10:17	17:02
8/21/2024	10:00	17:06
8/22/2024	8:30	16:11
8/23/2024	7:27	15:35
8/26/2024	8:26	15:48
8/27/2024	7:31	14:33
9/3/2024	13:30	17:31
9/4/2024	7:58	13:46
9/5/2024	7:31	16:32
9/9/2024	8:15	15:48
10/8/2024	12:00	16:33
10/9/2024	7:30	16:33
10/10/2024	8:00	16:46
10/11/2024	8:08	14:06
10/22/2024	8:15	16:36
10/23/2024	7:55	17:06
10/24/2024	7:30	16:51

Attachment A3: Pile Number and Drive Times (Vibratory)

Pile Number	Pile Type	Date	Time Start	Time End	Total Time (minutes)
A-01	18	8/1/2024	15:28	16:15	0:47
A-02	18	8/1/2024	14:11	14:38	0:27
A-03	24	8/2/2024	14:26	14:41	0:15
A-04	24	8/2/2024	10:42	11:03	0:21
A-05	24	8/2/2024	15:01	15:12	0:11
A-06	24	8/2/2024	11:33	11:44	0:11
A-07	24	8/2/2024	15:40	15:46	0:06
A-08	24	8/2/2024	12:54	13:06	0:12
A-10	24	8/2/2024	13:25	13:55	0:30
A-12	24	8/2/2024	16:19	16:46	0:27
A-09	24	8/3/2024	9:21	9:32	0:11
A-11	24	8/3/2024	10:25	10:32	0:07
A-14	24	8/3/2024	11:01	11:18	0:17
A-16	24	8/3/2024	11:38	12:03	0:25
A-18	24	8/3/2024	13:15	13:29	0:14
A-13	24	8/6/2024	8:17	8:24	0:07
A-15	24	8/6/2024	8:43	8:50	0:07
A-17	24	8/6/2024	9:10	9:17	0:07
A-20	24	8/6/2024	10:49	11:21	0:32
A-22	24	8/6/2024	11:39	11:55	0:16
A-24	24	8/6/2024	12:56	13:51	0:55
A-26	24	8/6/2024	14:46	15:22	0:36
A-26	24	8/6/2024	16:31	16:37	0:06
A-19	24	8/7/2024	9:10	9:19	0:09
A-21	24	8/7/2024	9:42	9:51	0:09
A-23	24	8/7/2024	10:40	10:49	0:09
A-25	24	8/7/2024	11:13	11:19	0:06
A-28	24	8/7/2024	8:19	8:40	0:21
A-28	24	8/7/2024	12:58	13:03	0:05
A-28	24	8/7/2024	13:47	13:51	0:04
A-30	24	8/7/2024	14:08	14:49	0:41
A-27	24	8/9/2024	11:18	11:23	0:05
A-29	24	8/9/2024	11:40	12:01	0:21
A-30	24	8/9/2024	9:18	9:59	0:41
A-30	24	8/9/2024	12:46	13:03	0:17
A-32	24	8/9/2024	14:10	14:40	0:30
A-32	24	8/9/2024	15:13	15:18	0:05

Pile Number	Pile Type	Date	Time Start	Time End	Total Time (minutes)
A-34	24	8/12/2024	13:09	13:49	0:40
A-31	24	8/13/2024	11:59	12:10	0:11
A-33	24	8/13/2024	13:09	13:19	0:10
A-34	24	8/13/2024	8:06	8:18	0:12
A-35	24	8/13/2024	13:37	14:18	0:41
A-36	24	8/13/2024	9:12	9:21	0:09
A-36	24	8/13/2024	10:27	10:33	0:06
A-38	24	8/13/2024	10:53	11:21	0:28
A-37	24	8/14/2024	8:08	8:19	0:11
A-40	24	8/14/2024	9:39	10:34	0:55
A-42	24	8/14/2024	11:38	11:54	0:16
A-44	24	8/14/2024	12:58	13:16	0:18
A-46	24	8/14/2024	13:58	14:13	0:15
A-48	24	8/14/2024	14:43	14:43	0:00
A-39	24	8/15/2024	10:06	10:14	0:08
A-41	24	8/15/2024	10:38	10:45	0:07
A-43	24	8/15/2024	11:07	11:16	0:09
A-45	24	8/15/2024	11:34	11:45	0:11
A-47	24	8/15/2024	13:06	13:36	0:30
A-48	25	8/15/2024	8:10	8:19	0:09
A-49	24	8/15/2024	14:22	14:30	0:08
A-50	24	8/15/2024	8:42	8:57	0:15
A-52	24	8/16/2024	8:24	8:45	0:21
A-54	24	8/16/2024	9:05	9:23	0:18
A-56	24	8/16/2024	10:04	10:32	0:28
A-58	24	8/16/2024	11:00	11:19	0:19
A-58	24	8/16/2024	11:53	12:01	0:08
A-60	24	8/16/2024	13:12	13:35	0:23
A-51	24	8/20/2024	11:06	11:13	0:07
A-53	24	8/20/2024	11:34	11:52	0:18
A-55	24	8/20/2024	12:55	13:08	0:13
A-57	24	8/20/2024	13:24	13:35	0:11
A-59	24	8/20/2024	13:50	13:59	0:09
A-62	24	8/20/2024	15:34	15:52	0:18
A-64	24	8/20/2024	16:25	16:41	0:16
A-61	24	8/21/2024	15:58	16:11	0:13
A-63	24	8/21/2024	13:40	13:50	0:10
A-65	24	8/21/2024	16:31	16:41	0:10
A-66	24	8/21/2024	10:30	10:45	0:15
A-66	24	8/21/2024	11:28	11:32	0:04
A-68	24	8/21/2024	12:03	12:29	0:26

Pile Number	Pile Type	Date	Time Start	Time End	Total Time (minutes)
A-68	24	8/21/2024	14:09	14:16	0:07
A-68	24	8/21/2024	14:55	15:11	0:16
A-70	24	8/22/2024	9:09	9:38	0:29
A-70	24	8/22/2024	11:23	11:29	0:06
A-72	24	8/22/2024	13:04	13:22	0:18
A-74	24	8/22/2024	13:50	14:10	0:20
A-76	24	8/22/2024	14:27	14:47	0:20
A-78	24	8/22/2024	15:05	15:46	0:41
A-67	24	8/23/2024	10:18	10:37	0:19
A-69	24	8/23/2024	10:57	11:08	0:11
A-71	24	8/23/2024	11:30	11:37	0:07
A-73	24	8/23/2024	13:17	13:33	0:16
A-75	24	8/23/2024	13:56	14:05	0:09
A-77	24	8/23/2024	14:32	14:39	0:07
A-79	24	8/23/2024	14:57	15:05	0:08
A-80	24	8/23/2024	8:09	8:48	0:39
A-81	24	8/26/2024	10:36	10:48	0:12
A-82	24	8/26/2024	9:09	9:22	0:13
A-83	24	8/26/2024	11:03	11:38	0:35
A-84	24	8/26/2024	9:58	10:19	0:21
A-86	24	8/26/2024	12:53	13:08	0:15
A-88	24	8/26/2024	13:22	13:51	0:29
A-88	24	8/26/2024	14:35	15:15	0:40
A-108	24	8/27/2024	9:16	9:25	0:09
A-109	24	8/27/2024	12:52	13:12	0:20
A-110	24	8/27/2024	10:11	10:25	0:14
A-111	24	8/27/2024	13:37	13:48	0:11
A-112	24	8/27/2024	10:42	10:53	0:11
A-113	24	8/27/2024	14:03	14:11	0:08
A-114	24	8/27/2024	11:10	11:20	0:10
A-116	24	8/27/2024	11:36	11:45	0:09
A-90	24	8/27/2024	8:05	8:27	0:22
A-85	24	9/3/2024	13:50	14:00	0:10
A-87	24	9/3/2024	14:20	14:32	0:12
A-89	24	9/3/2024	14:50	15:02	0:12
A-92	24	9/3/2024	16:02	16:22	0:20
A-94	24	9/3/2024	16:38	17:01	0:23
A-100	24	9/4/2024	11:04	11:26	0:22
A-91	24	9/4/2024	12:30	12:39	0:09
A-96	24	9/4/2024	8:41	9:05	0:24
A-98	24	9/4/2024	9:23	9:39	0:16

Pile Number	Pile Type	Date	Time Start	Time End	Total Time (minutes)
A-98	24	9/4/2024	10:44	10:49	0:05
A-101	24	9/5/2024	13:44	13:54	0:10
A-102	24	9/5/2024	10:57	11:10	0:13
A-103	24	9/5/2024	14:12	14:22	0:10
A-104	24	9/5/2024	11:25	12:02	0:37
A-105	24	9/5/2024	14:50	15:11	0:21
A-106	24	9/5/2024	13:05	13:20	0:15
A-107	24	9/5/2024	15:52	16:00	0:08
A-93	24	9/5/2024	8:03	8:11	0:08
A-95	24	9/5/2024	8:26	8:38	0:12
A-97	24	9/5/2024	8:54	9:12	0:18
A-99	24	9/5/2024	9:03	9:44	0:41
A-118	24	9/9/2024	9:06	9:12	0:06
A-120	24	9/9/2024	9:29	9:38	0:09
A-122	24	9/9/2024	10:27	10:38	0:11
A-124	24	9/9/2024	10:53	11:04	0:11
A-126	24	9/9/2024	11:43	12:05	0:22
A-128	24	9/9/2024	13:04	13:21	0:17
A-130	24	9/9/2024	13:37	13:52	0:15
A-132	24	9/9/2024	14:10	14:31	0:21
A-134	24	9/9/2024	14:50	15:00	0:10
B-05	24	10/8/2024	13:51	14:06	0:15
B-06	24	10/8/2024	13:18	13:28	0:10
B-08	24	10/8/2024	14:55	15:08	0:13
B-10	24	10/8/2024	15:26	15:34	0:08
B-12	24	10/8/2024	15:52	16:01	0:09
B-07	24	10/9/2024	9:19	9:27	0:08
B-09	24	10/9/2024	12:30	12:39	0:09
B-11	24	10/9/2024	12:56	13:25	0:29
B-14	24	10/9/2024	14:33	14:42	0:09
B-16	24	10/9/2024	14:59	15:08	0:09
B-18	24	10/9/2024	15:25	15:35	0:10
B-20	24	10/9/2024	15:52	16:04	0:12
B-46	24	10/10/2024	9:02	9:11	0:09
B-46	24	10/10/2024	10:19	10:35	0:16
B-47	24	10/10/2024	13:13	13:20	0:07
B-48	24	10/10/2024	9:59	10:16	0:17
B-49	24	10/10/2024	13:35	13:44	0:09
B-50	24	10/10/2024	10:57	11:24	0:27
B-51	24	10/10/2024	14:07	14:52	0:45
B-52	24	10/10/2024	11:56	12:06	0:10

Pile Number	Pile Type	Date	Time Start	Time End	Total Time (minutes)
B-54	24	10/10/2024	15:26	15:41	0:15
B-54	24	10/10/2024	16:10	16:11	0:01
B-53	24	10/11/2024	10:36	10:45	0:09
B-55	24	10/11/2024	11:04	11:12	0:08
B-56	24	10/11/2024	8:38	8:45	0:07
B-56	24	10/11/2024	13:01	13:14	0:13
B-57	24	10/11/2024	11:27	11:42	0:15
B-58	24	10/11/2024	9:03	9:11	0:08
B-59	24	10/11/2024	12:00	12:06	0:06
B-60	24	10/11/2024	9:30	9:38	0:08
B-60	24	10/11/2024	13:22	13:35	0:13
B-13	24	10/22/2024	9:02	9:09	0:07
B-15	24	10/22/2024	9:53	9:59	0:06
B-17	24	10/22/2024	10:27	10:32	0:05
B-19	24	10/22/2024	10:49	10:59	0:10
B-22	24	10/22/2024	11:25	11:33	0:08
B-24	24	10/22/2024	13:23	13:45	0:22
B-24	24	10/22/2024	14:20	14:40	0:20
B-26	24	10/22/2024	15:01	15:25	0:24
B-28	24	10/22/2024	15:28	15:36	0:08
B-30	24	10/22/2024	15:58	16:06	0:08
B-21	24	10/23/2024	10:43	10:52	0:09
B-23	24	10/23/2024	11:09	11:16	0:07
B-24	24	10/23/2024	9:04	9:06	0:02
B-24	24	10/23/2024	10:18	10:19	0:01
B-25	24	10/23/2024	12:47	12:54	0:07
B-26	24	10/23/2024	8:40	8:54	0:14
B-27	24	10/23/2024	11:33	11:40	0:07
B-29	24	10/23/2024	13:09	13:18	0:09
B-32	24	10/23/2024	8:13	8:21	0:08
B-34	24	10/23/2024	13:59	14:21	0:22
B-34	24	10/23/2024	14:49	14:54	0:05
B-36	24	10/23/2024	15:09	15:36	0:27
B-38	24	10/23/2024	15:54	16:04	0:10
B-40	24	10/23/2024	16:26	16:36	0:10
B-31	24	10/24/2024	8:12	8:19	0:07
B-33	24	10/25/2024	8:35	8:43	0:08
B-35	24	10/26/2024	9:05	9:12	0:07
B-37	24	10/27/2024	9:56	10:04	0:08
B-39	24	10/28/2024	10:37	10:44	0:07
B-42	24	10/29/2024	11:03	11:22	0:19

Pile Number	Pile Type	Date	Time Start	Time End	Total Time (minutes)
B-41	24	10/30/2024	11:47	11:52	0:05
B-62	24	10/31/2024	13:16	13:22	0:06
B-64	24	11/1/2024	13:36	14:13	0:37
B-64	24	11/2/2024	14:42	14:53	0:11
B-64	24	11/3/2024	15:35	16:21	0:46

Attachment A-4: Impact Pile Times and Strike Counts

Pile Number	Pile Type	Date	Time Start	Time End	Total Number of Strikes (approx)
A-26	24" Steel	8/6/2024	16:03	16:09	69
A-28	24" Steel	8/7/2024	13:21	13:26	48
A-30	24" Steel	8/7/2024	15:04	15:17	466
A-30	24" Steel	8/7/2024	15:21	15:26	230
A-32	24" Steel	8/9/2024	14:58	15:02	95
A-34	24" Steel	8/13/2024	8:35	8:52	428
A-36	24" Steel	8/13/2024	9:38	9:41	22
A-58	24" Steel	8/16/2024	11:39	11:54	54
A-60	24" Steel	8/16/2024	13:53	14:09	411
A-66	24" Steel	8/21/2024	11:14	11:18	91
A-68	24" Steel	8/21/2024	14:30	14:34	66
A-70	24" Steel	8/22/2024	11:09	11:12	48
A-80	24" Steel	8/23/2024	9:06	9:11	198
A-88	24" Steel	8/26/2024	14:03	14:15	167
A-98	24" Steel	9/4/2024	10:30	10:34	47
B-5	24" Steel	10/8/2024	14:24	14:30	192
B-54	24" Steel	10/10/2024	15:53	15:58	84
B-24	24" Steel	10/22/2024	14:03	14:32	438
B-26	24" Steel	10/23/2024	9:58	10:05	496
B-34	24" Steel	10/23/2024	14:37	14:54	123
B-64	24" Steel	10/24/2024	14:28	14:31	8
B-64	24" Steel	10/24/2024	15:05	15:15	154

Attachment B

Field Notes / Data

2024

Marine Mammal Observations

Sand Island Dike Repair

Date	Observer	Species	Time	Number of Individuals	Dirction/Bearing	Distance (Meters)	Behavior	Condition	Construction Activity
8/1/24	CML	STSL	1347	1	SW	104	Travel	Clear	None
8/2/24	CML	CASL	1348	3	N	209	Travel	Cloudy	Vibe
		HASE	1042	1	E	115	Travel	Cloudy	None
		HASE	1127	1	NE	128	Travel	Cloudy	None
		STSL	1340	1	S	138	Travel	Cloudy	V
8/3	CML	CASL	1110	1	E	150	Travel	Cloudy	V
		HAPD	901	3	E	950	Travel		N
		HASE	907	1	E	200	Dive		N
		STSL	1144	1	SE	410	Travel		V
8/6	CML	CASL	1458	2	N	246	Dive	Clear	V
		CASL	154	1	N	72	Travel	Clear	N
		CASL	1034	1	N	110	Travel	Clear	V
		HAPD	1141	1	E	1100	Travel	Clear	V
		HASE	814	1	E	88	Dive	Cloudy	N
		STSL	1254	1	N	44	Travel	Clear	N
		STSL	1444	1	N	49	Travel	Clear	N
		STSL	1448	1	NNW	152	Travel	Clear	V
8/7	CML	CASL	819	1	N	63	Feeding	Cloudy	N
		CASL	1347	1	N	91	Dive		V
		CASL	1408	1	N	48	Dive		V
		CASL	1522	1	N	119	Dive		I
		CASL	1523	1	SE	88	Dive		I
		STSL	1347	1	N	91	Dive		V
		STSL	1424	1	N	67	Dive		V
		STSL	1432	1	NE	225	Travel		V

I - Impact
 V - Vibe
 N - None

2024 Season 2

Marine Mammal Observations

Sand Island Dike Repair

Date	Observer	Species	Time	Number of Individuals	Direction/Bearing	Distance (Meters)	Behavior	Condition	Construction Activity
8/9	CML	CASL	1355	2	N	65	Dive	Cloudy	N
		CASL	1416	1	SE	110	Dive		V
		CASL	1417	1	NE	81	Travel		V
		HASE	1115	1	E	198	Travel		N
		HASE	1119	1	SE	175	Travel		V
		STSL	1355	1	N	72	Dive		N
		STSL	1412	1	N	76	Dive		V
8/13	CML	CASL	1115	1	E	53	Dive	Cloudy	N
8/13	CML	CASL	1319	1	S	19	Travel	Cloudy	N
8/14	CML	CASL	812	1	N	167	Travel	Partly Cloud	V
		CASL	910	2	N	38	Dive		N
		HASE	718	1	E	63	Travel		V
		HASE	808	1	E	51	Dive		N
		HASE	816	1	E	181	Travel		N
		HASE	818	1	SE	122	Travel		V
		HASE	1315	1	E	188	Dive		V
		STSL	911	1	N	184	Feeding		N
		STSL	1128	1	NE	63	Dive		N N
		STSL	1300	1	NE	237	Travel		V
8/15	CML	CASL	846	1	NE	250	Feeding	Cloudy	V
8/15	CML	HASE	852	1	E	61	Travel	Cloudy	V
8/16	CML	CASL	902	1	180	71	Stationary	Clear	N
		CASL	906	1	135	126	Feeding		V
		CASL	1022	1	180	58	Dive		V
		CASL	1103	1	90	110	Dive		V

I - Impact
 V - Vibe
 N - none

2021

Marine Mammal Observations

Sand Island Dike Repair

Date	Observer	Species	Time	Number of Individuals	Direction/Bearing	Distance (Meters)	Behavior	Condition	Construction Activity
8/22	CMC	CASL	1306	3	15	250	Travel	Cloudy	✓
8/22	CMC	HASE	1314	1	45	91	Stationary	Cloudy	✓
8/23	CMC	CASL	839	1	10	125	Porpoising	P. Cloudy	✓
↓	↓	CASL	1327	1	80	55	Feeding	↓	N
↓	↓	HASE	1318	1	90	125	Travel	↓	✓
8/26	CMC	CASL	903	1	90	250	Porpoising	Cloudy	N
↓	↓	CASL	1003	2	10	96	Feeding	↓	✓
↓	↓	CASL	1106	3	15	300	Travel	↓	✓
8/27	CMC	CASL	1022	1	90	85	Milking	Cloudy	N
8/27	CMC	HASE	1118	2	90	40	Dive	P. Cloudy	N
9/3	CMC	HASE	1643	1	45	339	Travel	P. Cloudy	✓
9/4	CMC	CASL	859	1	350	450	Mill	Fog	✓
↓	↓	CASL	922	1	10	225	Travel	Fog	N
↓	↓	CASL	1033	3	10	331	Mill	Fog	I
↓	↓	CASL	1125	1	90	46	Travel	Clear	✓
9/5	CMC	CASL	904	4	0	335	Mill	Clear	✓
↓	↓	CASL	911	1	90	22	Travel	↓	N
↓	↓	CASL	1103	1	50	110	Travel	↓	✓
↓	↓	CASL	1144	1	150	75	Travel	↓	✓
↓	↓	HASE	910	1	45	68	Travel	↓	N
↓	↓	HASE	1105	1	15	300	Feeding	↓	✓
9/9	CMC	CASL	1029	1	190	175	Travel	Cloudy	✓
↓	↓	CASL	1426	1	20	79	Feeding	↓	✓
↓	↓	CASL	828	2	180	81	Travel	↓	N
↓	↓	CASL	904	1	180	62	Travel	↓	N

V - Vibe
 I - Impact
 N - None

Sand Island Dike Repair

[illegible]

[illegible][illegible]

Marine Mammal Observations

[illegible]

[illegible]

1. HASE done when vibe started
2. STSE feeding in area before/after (1254-1357) no change in behavior during vibe

[illegible]

* First sighted during last 1 minute of impact. was outside of shutdown zone and pile driving stopped for the day.

[illegible][illegible]

[illegible]

1. shutdown immediately for rest of day to prevent more level B takes

[illegible]

1. gave clearance for impact @ 1525
2. called off impact, shut down for the day to prevent level B takes
3. shutdown immediately for the rest of day to prevent more level B takes

[illegible][illegible]

Marine Mammal Observations									
Date	Observer	Species	Time	Number of Individuals	Direction/Bearing	Distance (Meters)	Behavior	Condition	Construction Activity
8/16	Megan	HASE	0754	1	270°	80	milling	partly cloudy, bf2	none
		CASE	0843	1	75°	100	trav W	clear, bf1	vibe(B)
		CASE	0905	1	120°	160	milling		vibe(B)
		CASE	0909	1	210°	180	trav S		vibe(B)
		CASE	0915	1	160°	280	trav S		vibe(B)
		CASE	1007	1	190°	170	trav S		vibe(F)
		HASE	1016	1	160°	235	trav E		vibe(B)
		CASE	1137	1	165°	100	trav S	clear, bf2	none
		HASE	1139	1	200°	200	trav S		none
		CASE	1303	1	180°	70	trav W	cloudy, bf1	none
		CASE	1305	1	210°	60	trav W		none
8/20	Megan	CASE	1100	1	0°	100	feeding	cloudy, bf3	none
		CASE	1132	1	320°	90	trav W	rain	none
		STSE	1309	1	70°	120	trav S	cloudy, bf2	vibe(B)
		HAPO	1301	2	85°	500	milling		none
		CASE	1330	1	210°	140	trav E		vibe(B)
		HASE	1618	1	180°	240	feeding		none

Date	Observer	Species	Time	Number of Individuals	Direction/Bearing	Distance (Meters)	Behavior	Condition	Construction Activity
8/16	Megan	HASE	0754	1	270°	80	milling	partly cloudy, bf2	none
		CASE	0843	1	75°	100	trav W	clear, bf1	vibe (B)
		CASE	0905	1	120°	160	milling		vibe (B)
		CASE	0909	1	210°	180	trav S		vibe (B)
		CASE	0915	1	160°	280	trav S		vibe (B)
		CASE	1007	1	190°	170	trav S		vibe (F)
		HASE	1016	1	160°	235	trav E		vibe (B)
		CASE	1137	1	165°	100	trav S	clear, bf2	none
		HASE	1139	1	200°	200	trav S		none
		CASE	1303	1	180°	70	trav W	cloudy, bf1	none
		CASE	1305	1	210°	60	trav W		none
8/20	Megan	CASE	1100	1	0°	100	feeding	cloudy, bf3	none
		CASE	1132	1	320°	90	trav W	rain	none
		STSE	1309	1	70°	120	trav S	cloudy, bf2	vibe (B)
		HAPO	1301	2	85°	500	milling		none
		CASE	1330	1	210°	140	trav E		vibe (B)
		HASE	1618	1	180°	240	feeding		none

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Date	Observer	Species	Time	Number of Individuals	Dirction/Bearing	Distance (Meters)	Behavior	Condition	Construction Activity
8/27	Megan	HAP0	0753	2	160°	200m	trav W	cloudy bf1	none
		CASE	0823	1	100°	120m	trav W	clear bf1	vibe(B)
		HASE	1009	1	140°	85m	trav W	I	none
		CASE	1025	1	80°	75m	trav S	I	vibe B
		HASE	1041	1	160°	90m	milling	Partly cloudy bf2	none
		HASE	1335	1	180°	120m	trav W	clear bf2	none
9/3		HASE	1346	1	315°	90m	milling	cloudy bf1	none
		CASE	1349	1	200°	360m	trav S	I	none
		CASE	1356	1	250°	350m	trav N	I	none
		CASE	1612	1	130°	80m	trav W	clear bf1	vibe(B)
9/4		CASE	0856	1	140°	300m	trav N	Foggy bf1	vibe(B)
		CASE	0901	1	265°	275m	milling		vibe(B)
		CASE	0924	1	130°	250m	trav N		vibe(B)
		HASE	1118	1	180°	150m	milling	clear bf1	vibe(B)
		CASE	1212	3	260°	150m	Feeding		none
		CASE	1232	7	230°	250m	Feeding	clear bf2	vibe(B)x7

Date	Observer	Species	Time	Number of Individuals	Direction/Bearing	Distance (Meters)	Behavior	Condition	Construction Activity
8/27	Megan	HAPO	0753	2	160°	200 m	trav W	cloudy bf1	none
		CASE	0823	1	100°	120 m	trav W	clear bf1	vibe(B)
		HASE	1009	1	140°	85 m	trav W	I	none
		CASE	1025	1	80°	75 m	trav S	I	vibe B
		HASE	1041	1	160°	90 m	milling	Partly cloudy bf2	none
		HASE	1335	1	180°	120 m	trav W	clear bf2	none
9/3		HASE	1346	1	315°	90 m	milling	cloudy bf1	none
		CASE	1349	1	200°	360 m	trav S	I	none
		CASE	1356	1	250°	350 m	trav N	I	none
		CASE	1612	1	130°	80 m	trav W	clear bf1	vibe(B)
9/4		CASE	0856	1	140°	300 m	trav N	Foggy bf1	vibe(B)
		CASE	0901	1	265°	275 m	milling		vibe(B)
		CASE	0924	1	130°	250 m	trav N		vibe(B)
		HASE	1118	1	180°	150 m	milling	clear bf1	vibe(B)
		CASE	1212	3	260°	150 m	Feeding		none
		CASE	1232	7	230°	250 m	Feeding	clear bf2	vibe(B)x7

Marine Mammal Observations

Date	Observer	Species	Time	Number of Individuals	Direction/Bearing	Distance (Meters)	Behavior	Condition	Construction Activity
9/5	Megan	CASE	0801	2	285°	280m	milling	clear bf 2	none
		CASE	0806	4	285°	280m	milling		vibe (B) X 4
		CASE	1122	1	285°	120m	Feeding		none
		HASE	1135	1	260°	220m	milling		vibe (B)
		CASE	1137	1	290°	140m	Feeding		vibe (B)
		CASE	1320	3	275°	280m	milling	Foggy, bf 2	vibe (B) X 3
		HASE	1354	1	250°	110m	milling		vibe (B)
		CASE	1456	2	270°	280m	milling		vibe - already have B ₂
		HASE	1547	1	160°	160m	trav N	clear bf 1	none
9/9		CASE	0857	2	110°	80m	trav E	bf 1, cloudy	none
		humpback	0900	1	260°	300m	trav SE		none 1.
			0906	1	260°	800m	trav SE		vibe B 2.
			0921	1	280°	1000m	trav W		none 3.
		HASE	0913	1	190°	90m	milling		none
		CASE	0929	1	145°	100m	trav S		vibe (B)
		CASE	1152	1	231°	110m	porpoising	Partly cloudy, bf 1	vibe (B)
		HASE	1319	2	250°	160m	milling		none
		CASE	1336	1	200°	250m	trav SW		none
		CASE	1405	2	240°	200m	milling		none
		humpback	1409	1	240°	5600m	trav W		vibe: no level B outside zone
		humpback	1421	1	225°	2800m	trav SW		vibe (B)

1. delay vibe start for humpback to get further away
2. no behavior change when vibe started. continued trav same speed & direction
3. humpback travelling in area @ 1500-3000m away, last sighted 1052

Marine Mammal Observations

Date	Observer	Species	Time	Number of Individuals	Direction/Bearing	Distance (Meters)	Behavior	Condition	Construction Activity
10/8	Megan	HASE	1401	1	230°	180m	milling	rain, bf 2	vibe (B)
		HASE	1426	2	45°	130m	milling		impact (B)
		CASE	1446	1	290°	70m	trav S		none
		HASE	1456	1	0°	90m	milling		vibe (B)
10/9		HASE	0918	1	175°	200m	milling	Partly cloudy, bf 2	none
		CASE	1500	1	160°	75m	milling	clear, bf 2	vibe (B)
10/10		HAP0	0856	1	150°	100m	trav NE	Foggy, bf 2	none
		CASE	1054	1	200°	200m	milling	clear, bf 2	none
		CASE	1057	1	120°	80m	trav SE		vibe (B)
		CASE	1100	1	240°	180m	trav NW		vibe (B)
		HASE	1544	2	270°	800m	milling		none

Marine Mammal Observations									
Date	Observer	Species	Time	Number of Individuals	Direction/Bearing	Distance (Meters)	Behavior	Condition	Construction Activity
10/11	Megan	humpback	0812	1	200°	800m	trav NE	cloudy, #2	none
		humpback #2	0812	1	220°	3000m	trav NE		none
		HASE	0829	1	130°	65m	trav W		none
		humpback	0835	2	175°	1500m	trav NE		none
		humpback	0840	2	150°	1800m	trav NE	cloudy, #3	vibe (B) (B)
		humpback #3	1041	1	220°	4000m	trav SE		vibe (B)
		CASE	1255	3	220°	100m	porpoising E		vibe (B) x3
10/22		CASE	1501	1	200°	200m	feeding	clear, bf 1	vibe (B)
10/23		CASE	0846	1	0°	350m	porpoising	clear, bf 1	vibe (B)

1. delayed start of pile driving
2. gave clearance to start pile driving w/ humpbacks at least 1500 m away
3. no behavior change w/ start of vibe