

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Land Division  
Honolulu, Hawaii 96813

May 12, 2023

Board of Land and Natural Resources  
State of Hawaii  
Honolulu, Hawaii

ROE-2023  
  
Oahu

Issuance of Right-of-Entry Permit to Hawaii Explosives & Pyrotechnics, Inc. for Aerial Fireworks Display at Duke Kahanamoku Beach Every Friday From May 26, 2023 to May 24, 2024, Waikiki, Honolulu, Oahu, TMK: (1) 2-3-037: portion of 021.

APPLICANT:

Hawaii Explosives & Pyrotechnics, Inc., a Hawaii profit corporation.

LEGAL REFERENCE:

Section 171-55, and Chapter 343, Hawaii Revised Statutes (HRS), as amended. Chapter 11-200.1, Hawaii Administrative Rules, as amended.

LOCATION:

Portion of Government lands situated at Waikiki, Honolulu, Oahu, identified by Tax Map Key: (1) 2-3-037: portion of 021, as shown on the map attached as **Exhibit A**.

AREA:

Staging area (approximate)	500	square feet
Safety zone (approximate)	<u>173,494</u>	<u>square feet</u>
Total area	173,994	square feet

ZONING:

State Land Use District: Urban  
City and County of Honolulu LUO: Public Precinct

TRUST LAND STATUS:

Section 5(a) lands of the Hawaii Admission Act  
DHHL 30% entitlement lands pursuant to the Hawaii State Constitution: No

CURRENT USE STATUS:

Requested area is vacant and unencumbered.

CHARACTER OF USE:

Set up and conducting aerial fireworks display.

TERM:

Between 4:00 p.m. and 9:00 p.m. on 53 successive Fridays, May 26, 2023 – May 24, 2024, shown in **Exhibit B**.

RENTAL:

\$250.00 per event day – Set-up, Firing site area, and Safety Zone.

At its meeting on June 9, 2017, agenda item D-14, the Board approved a charge of \$250 to cover the exclusive use of the firing site and safety zone as shown in **Exhibit A**. Therefore, the total cost for this right-of-entry, covering 53 dates at \$250 per event date, amounts to \$13,250.

COLLATERAL SECURITY DEPOSIT:

None.

CHAPTER 343 - ENVIRONMENTAL ASSESSMENT:

In accordance with Hawaii Administrative Rules (“HAR”) §§11-200.1-15 and -16, and the Exemption List for the Department of Land and Natural Resources, reviewed and concurred on by the Environmental Council on November 10, 2020, the subject request is exempt from the preparation of an environmental assessment pursuant to General Exemption Type 1, which applies to “[o]perations, repairs or maintenance of existing structures, facilities, equipment, or topographical features, involving minor expansion or minor change of use beyond that previously existing.” Specifically, the subject request is exempt under Part 1, Item 44, which exempts “[p]ermits, licenses, registrations, and rights-of-entry issued by the Department that are routine in nature, involving negligible impacts beyond that previously existing.” The subject request is expected to have minimal or no significant effect on the environment and should be declared exempt from the preparation of an environmental assessment and the requirements of §11-200.1-17, HAR. See **Exhibit C**.

DCCA VERIFICATION:

Place of business registration confirmed: YES X NO     
Registered business name confirmed: YES X NO

Applicant in good standing confirmed:      YES X      NO   

REMARKS:

Hawaii Explosives & Pyrotechnics, Inc. (HE) has been contracted by the Hilton Hawaiian Village (HHV) to continue conducting aerial fireworks displays every Friday evening for a period of 12 months from May 26, 2023, to May 24, 2024, at Duke Kahanamoku Beach. The subject request is for a continuance of the same firework display held at the same location since 1991, with the exception of the statewide Covid shutdown from March 2020 to March 2022.

By its letter dated March 22, 2023, HE is requesting the issuance of a right-of-entry permit (ROE) for aerial fireworks display at Duke Kahanamoku Beach occurring every Friday from May 26, 2023, through May 24, 2024, with the dates shown in **Exhibit B**.

At its meeting of May 13, 2022, under agenda item D-4, the Board considered the Applicant's similar renewal request covering the period from May 2022 to May 2023. At that time, several Board members expressed concerns about the weekly fireworks shows and the use of fireworks on the shoreline in general. The Board approved the 2022-2023 renewal request with an amendment requiring, "at or before the next annual renewal of [HE's] fireworks ROE, HE shall provide to the Board a status report on a sustainability plan and its participation in reducing waste in the ocean and the Ala Wai area other than cleanups after firework shows." Through this amendment, the Board made it clear that provision of a sustainability plan was a required condition of approval for the Applicant's next annual renewal, which is the present submission.

In discussion, various Board members stated that the sustainability plan should encompass certain elements including a five-to-ten-year plan that considers the use of alternative media such as drones<sup>1</sup> or lights instead of fireworks, tracking and reduction of emissions, reduction of noise, reduction of solid waste litter, a "30 by 30" plan to reduce waste and emissions, and participation in local efforts to reduce waste in the Waikiki/ Ala Wai area other than post-show site cleanup. The Board rejected a proposed amendment that would have required the Applicant to formalize a carbon offset credit purchase program and found that purchase of carbon offset credits was insufficient to address local environmental concerns.

In response to a staff request, the Applicant provided a document titled "Hawaii Explosives & Pyrotechnics 2023 SUSTAINABILITY PROGRAM" (Sustainability Program) to staff on April 6, 2023. Staff reviewed this document and has concerns that it may not be responsive to the issues raised by Board in its prior discussions and found that it contained certain information that staff was unable to verify. Staff conducted a meeting via Zoom on

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<sup>1</sup> Please note that pursuant to Hawaii Administrative Rules 13-221-10, the Department has prohibited the use without a permit of drones on unencumbered public land, which includes the subject area. Further, since the subject area is along or near the route to Daniel K. Inouye International Airport, an applicant for a drone permit would be required to consult with and/ or obtain the approval of the Federal Aviation Administration and the Department of Transportation, Airports Division.

April 17, 2023, to inform the Applicant about these concerns and to give the Applicant with an opportunity to provide additional information to supplement the Sustainability Program. Based on that meeting, on April 24, 2023, the Applicant submitted to staff a revised Sustainability Program document (**Exhibit D**) as well as a new document titled “Impact Mitigation Report For the Friday Night Fireworks Display” (Impact Mitigation Report) (**Exhibit E**), a memorandum from Sea Engineers, Inc. (**Exhibit F**), a letter from the Department of Health (**Exhibit G**), a letter from the Division of Aquatic Resources (**Exhibit H**), and written responses to questions from staff (**Exhibit I**).

Staff has reviewed the revised Sustainability Program, the Impact Mitigation Report, and the additional documents and still has concerns that these documents still may not be responsive to the Board’s previously expressed concerns and contain certain information that staff was not able to verify. After review of the Applicant’s new document submissions, staff notes that the Sustainability Program and Impact Mitigation Report does not provide any commitment to modify the Applicant’s operations that would result in a reduction of emissions or debris created by the fireworks display. Additionally, the documents contain much information that is speculative or not relevant to the use of the subject State lands for fireworks displays, such as the Applicant’s future plans to incorporate solar energy use into its own offices and base yards, to encourage employees to carpool to launch sites, and to eventually provide water coolers and reusable drink containers to its employees. While laudable in their own right, these actions have nothing to do with the conduct of fireworks shows and do not directly address the concerns raised by the Board. Staff had specific concerns with certain statements in the Applicant’s Sustainability Program and Impact Mitigation Report as follows.

On pages 2-3 of the Sustainability Program, the Applicant discusses the fact that it sells its services to clients in the Meetings, Conventions, and Incentives(MCI) sector of the Hawaii tourism market and cites the Malama Hawaii program, presumably as an example of sustainability efforts. (**Exhibit D**) Malama Hawaii is a discount program among certain hotels that provides a discount, usually a percentage off one night of a multi-night stay, in exchange for guests’ donation to or participation in an activity at certain local partner organizations. Staff was unable to find any mention of Applicant as a partner or participant in the program on Malama Hawaii’s website. The Applicant confirmed to staff via email that the Applicant is not a direct participant in this program but included the reference to demonstrate “that the MCI industry has a unique and important role to play in effectively delivering the initiative’s message.” (**Exhibit I**) The existence of such a program in the general industry sector with which the Applicant does business is not relevant to this application and does not respond to the Board’s directive to the Applicant.

On page 4 of the Sustainability Program document, Applicant discusses pyrotechnic compositions and particulate matter and states that the Applicant is “where possible” integrating lower smoke and lower perchlorate compounds. (**Exhibit D**) However, at the May 13, 2022, Board meeting, the Applicant stated that it was not using low perchlorate products as the cost was prohibitive.

In the Applicant’s written responses to staff questions, the Applicant stated that HE is

“already utilizing these products in numerous displays we produce” but “[a] large-scale incorporation into the weekly display is currently impractical.” (**Exhibit I**) Staff reiterates that the weekly Hilton fireworks display is the sole subject of the present submittal and that HE’s use of low-perchlorate fireworks elsewhere is not relevant to the present submittal. HE states that its plans to reduce the use of perchlorates consist of continuing “to apply pressure to our manufacturers.” (**Exhibit I**) While efforts to effect industry-wide change are laudable, they are not relevant to the present submittal.

On pages 4 and 5, the Sustainability Plan includes HE’s Fireworks Best Management Practices Policy (reprinted on pages 10 – 11 as Appendix A). (**Exhibit D**) This appears to be a current procedure of unknown duration for on-site work and does not reflect any changes to the Applicant’s operations, long-term planning strategies, or any actual mitigation work outside of post-show clean up. In this section, as in other places throughout the document, the Applicant mentions certain federal, state, and county laws and regulations but does not cite to any specific laws or regulations and does not provide any information as to the Applicant’s record of compliance or to the agencies providing oversight or monitoring of Applicant’s compliance. In the Impact Mitigation Report and its written responses, the Applicant states that it is regulated by “multiple entities” but does not provide further specifics. (**Exhibits E and I**) The applicant states that because intermittent fireworks displays are exempt from United States Environmental Protection Agency clean air standards and because the Applicant has received guidance from the State Department of Health Clean Water Branch and Division of Aquatic Resources, the Applicant does not utilize “any third-party monitoring or verification entities at this time, other than the underwater surveys.” Finally, this Best Management Practices Policy does not reflect any verifiable new actions or concrete future planning for strengthening HE’s mitigation activities.

The Monitoring, Feedback, and Auditing section and Tools and Techniques sections found on pages 5 through 6 of the Sustainability Program state that the Applicant uses various planning and data collection software, collects information post-display, and compiles reports. However, the document does not include any information about the data collected or the use of the reports. There is no indication, for example, of trends relating to waste or emissions reduction and no indication of how the information has been used to inform concrete actions to achieve improved outcomes or formulate actionable policy, either now or in the future. (**Exhibit D**)

The Impact Mitigation Report addresses similar concerns in a section titled “Emission and Particulates” (see pages 6-8) which presents information on the components of fireworks and the byproducts created by combustion, including a table of “Combustion by-products produced by a typical 57 kg aerial fireworks display.” This section discusses the chemical compounds that are attributable to a fireworks show and seems to demonstrate that the quantities of such compounds and their effects on human and marine health are negligible. Therefore, the Report concludes that the best means of mitigating emission and particulate matter concerns is to focus on reducing carbon emissions generated by transporting people and goods for fireworks displays. The Applicant does not give a timeline or specific actions to this end because “technology in regards to freight hauling is nascent.” (**Exhibit E**)

Staff was not able to verify the accuracy of some of the data representation in this section. Specifically, the Impact Mitigation Report cites to a “[r]eview of 10 years of testing data from the DOH Clean Water Branch” which “indicates no significant cumulative changes to water quality that can be attributed to fireworks.” (**Exhibit E**) Staff was unable to locate this DOH review in the materials provided by the Applicant. Rather, the Applicant has included a 2016 letter from Clean Water Branch stating only that neither a National Pollutant Discharge Elimination System permit nor other approvals from that office are required for fireworks shows. (**Exhibit G**) The Applicant did include a 2015 memorandum from the Division of Aquatic Resources in response to testimony on a prior Board hearing on the issuance of a right-of-entry permit to the Applicant for a one-time fireworks show at the Kahala Hotel. This memorandum cites to a 1992 study prepared for the Walt Disney Corporation on the effects of 10 years of key chemical levels on a small lake. (**Exhibit H**)

Under the Site Surveys heading on page 5 of the Sustainability Program (**Exhibit D**), the Applicant states that it performs “periodic” dive surveys of the ocean near the Duke Kahanamoku Beach launch site. The Applicant has submitted a supplemental document titled “12932 HiPyro Hilton Beach Debris Inspection – Findings Memo.” (**Exhibit F**) This document states that Sea Engineering, Inc. conducted in-water inspections and debris cleanup in the near-shore ocean area next to the launch site on March 30, 2023, and in 2017, approximately 5 years earlier. The Applicant did not state anywhere in the Sustainability Program or Impact Mitigation Report that any other in-water work was done by any other contractors during that period. In its written responses, the Applicant states “I believe we have conducted 5 *independent* dive assessments at several locations over the past five years” and has “performed multiple internal surveys within the last permit period.” Unfortunately, these independent dive assessments and internal surveys have not been documented and are, therefore, not part of the record to be considered with the present application. The Applicant also states that the March 30, 2023 survey was not performed in the regular course of business but rather “specifically to respond to former Board member Downing’s contention at the last meeting that our inert debris accumulates outside of the breakwall.” (**Exhibit I**) Staff is concerned that the applicant’s program of “periodic surveys” may not provide enough reliable data on the amount of debris that regularly enters the ocean at the Duke Kahanamoku Beach site.

The Sustainability Program contains Debris Collection Goals on pages 7 through 8. This section reflects an extensive list of vague goals including “100% collection of waste debris,” implementation of recycling for cardboard and copper wire, use of reusable hardware, integration of solar energy and upgraded office equipment into the Applicant’s own properties, encouragement for employees to carpool to job sites, upgrades to the Applicant’s own vehicle fleet, and plans to provide employees with reusable beverage containers. As stated above, these goals may be laudable but HE’s investment in upgrading its own properties, fleet, and equipment is not relevant to the impact of its operations at Duke Kahanamoku Beach and stands to benefit the Applicant itself over any other interests. This section does not contain timelines for implementing most of these goals. Similarly, the “Our 30 by 30 Initiative” section on page 8 lists several general goals for reducing operational impacts by 2030 but does not provide any more details on how these goals will be achieved or measured. (**Exhibit D**)

The Impact Mitigation Report provides more detail on the Applicant's beach debris cleaning process in its "Firing Range Selection and Inert Debris" section. It states that "several crew members" focus on land-based debris and "at least two" enter the shallow, nearshore water to collect floating debris and "periodically and as needed" retrieve debris from the deeper outer sections of the bay." It seems that these crews do not perform dives or other underwater activities but that "periodic cleanups" of the deepest, central section of the bay are performed. Based on the Sea Engineering, Inc. memo (**Exhibit F**) cited above, it appears that these "periodic cleanups" have occurred twice in the past five years. The Impact Mitigation Report also states that the Applicant's current assessments indicate that "outer-bay underwater surveys need to be conducted every 30 days, and more frequently if there are a number of Kona winds during firing." (**Exhibit E**) Unfortunately, neither the Sustainability Plan nor the Impact Mitigation Report contain any information on plans to conduct such surveys.

Under the Carbon Offset Initiatives section on page 8 of the Sustainability Project, the Applicant states that it has "recently become involved with" beach cleanup activities coordinated with HHV and Waikiki Ohana, Terrapass Carbon Offset program, and Hawaiian Legacy Reforestation Initiative. (**Exhibit D**) The Applicant's participation in beach cleanup activities is a positive step. However, the Board clearly articulated at its May 13, 2022 meeting that the purchase of carbon offset credits, which is the service offered by Terrapass, is not an acceptable mitigation activity for purposes of the required sustainability plan. The Hawaiian Legacy Reforestation Initiative (Hawaiian Legacy) is a type of carbon offset program in which donors may pay to have a tree planted within reforestation projects. It does appear to be a locally-based initiative, but is essentially a type of purchasable carbon offset credit which the Board has said is not sufficient. The Applicant's written answers state that the Applicant is in the initiation phase with Hawaiian Legacy and is working to partner on tree planting activities. Currently, neither HE in its corporate capacity nor any member of HE's key personnel as listed on page 1 of the Sustainability Program are listed as Partners or Members on Hawaiian Legacy's website. The Applicant also states its position that it is "appropriate for the board to consider the *sponsor's* actions when considering stewardship, sustainability and accountability to the shoreline, neighborhood and state." The Applicant asserts that HHV's resources and efforts should be evaluated in the context of the present submittal. (**Exhibit I**) Staff notes that HHV, although it does fund the Friday night fireworks, is not the applicant in this instance and is not a party to this proceeding.

The Applicant states on page 8 of the Sustainability Program that it is "collaborating with other display companies to reduce the impacts that our shows have on the environment." (**Exhibit D**) In its written answers, the Applicant states that it is working directly with other industry members to "promote these ideals" of adopting sustainable practices and endorsing and promoting products that are better for the environment across the supply chain. (**Exhibit I**) These are positive statements, but Applicant does not provide any information on any actual work that is being or has been done with other industry partners to actually produce real, measurable, mitigation measures for the show that the Applicant seeks to perform under the present application. The Applicant does not cite any specific products or methods that it has actually adopted in its own operations as a result of industry

partnerships.

The Impact Mitigation Report reiterates that the Applicant is, in fact, a fireworks display provider which is contracted to provide a fireworks display show. The Impact Mitigation Report does include discussion of alternate media consisting of drone shows, laser shows, moving light shows, and video projection. The Applicant states that these options are not feasible at this time due to the Applicant's capacity, lack of consumer demand, high energy consumption, regulatory constraints, and unavailability of appropriate sites. The Impact Mitigation Report also contains a number of steps that the Applicant is taking to reduce noise impacts which are eliminating aerial salute shells that only make noise and do not contain visual effects, designing shows so that noise volume increases gradually to reduce the shock of higher intensity sound, and providing public notice of fireworks schedules and potentially useful personal mitigation tactics. **(Exhibit E)** Staff notes that these noise mitigation elements are responsive to the Board's request.

The Applicant does address site selection issues in its Impact Mitigation Report. The Report states that the Duke Kahanamoku Beach firing range "is selected primarily to protect spectators from the hazards of a possible malfunction" and asserts that the adjacent Duke Kahanamoku lagoon site is not a suitable alternative. "Unfortunately, concerns about safety, viewability and limits to public access indicated this location wasn't viable for the weekly show." **(Exhibit E)**

Despite concerns, Staff acknowledges that the Applicant has complied with the Board's requirement that it submit a sustainability plan as part of its current request.<sup>2</sup> Staff further notes that the Applicant has responded that the information provided represent the maximum extent to which the Applicant can address the Board's concerns given their business model, contractual obligations and industry technologies. Therefore, despite concerns, Staff defers to the Board to determine whether the information submitted by the Applicant is sufficient to address its concerns, and whether the continuing use of State lands for the fireworks shows is appropriate. If the Board makes such a finding, staff recommends that the Applicant's request for the right of entry be approved.

Applicant has not had a lease, permit, easement, or other disposition of State lands terminated within the past five years due to non-compliance with such terms and conditions.

The Office of Conservation and Coastal Lands (OCCL) commented on an earlier draft of the present application that was written before the Applicant submitted its Sustainability Program to staff. OCCL stated at that time that it did not concur with staff's recommendation for approval and request for exemption to the environmental assessment requirement pursuant to Chapter 343, HRS. Because of the time required to review the Applicant's Sustainability Program, Impact Report, and other documents, OCCL was not able to comment on the present submittal. Staff will endeavor to obtain OCCL's

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<sup>2</sup> Staff notes that although the Board did identify issues that the sustainability plan should address, these were not adopted as actual criteria pursuant to the Board's decision making.

comments on the present submittal and will forward them to the Board before the scheduled Board meeting that considers this application.

RECOMMENDATION: That the Board:

1. Declare that, after considering the potential effects of the proposed disposition as provided by Chapter 343, HRS, and section 11-200.1-15, HAR, this project is expected to have minimal or no significant effect on the environment and is therefore exempt from the preparation of an environmental assessment.
2. Authorize the issuance of a right-of-entry permit to Hawaii Explosives & Pyrotechnics, Inc. on specified dates mentioned above covering the subject area for aerial fireworks display purposes under the terms and conditions cited above, which are by this reference incorporated herein and further subject to the following:
  - A. The standard terms and conditions of the most current right-of-entry permit form for regular Friday fireworks show, as may be amended from time to time; and
  - B. Such other terms and conditions as may be prescribed by the Chairperson to best serve the interests of the State.

Respectfully Submitted,



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Rebecca L. Anderson  
Shoreline Specialist



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Ian Hirokawa  
Special Project Coordinator

APPROVED FOR SUBMITTAL:



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Dawn N. S. Chang, Chairperson



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Exhibit A

## Hawaii Explosives & Pyrotechnics, Inc.

P.O. Box 1244  
Keaau, HI 96749-1244  
[hepinc@hipyro.com](mailto:hepinc@hipyro.com)  
(808) 968-0600



March 22, 2023

Dawn N. S. Chang, Esq.  
BLNR Chairperson  
Department of Land & Natural Resources  
P.O. Box 621  
Honolulu, HI 96809

Dear Ms. Chang,

Hawaii Explosives & Pyrotechnics, Inc. (HEP) is requesting renewal of a Right-of-Entry for Duke Kahanamoku Beach to provide fireworks display services in conjunction with the weekly Hilton Hawaiian Village Friday Night Fireworks. Details are as follows:

Event: Hilton Hawaiian Village Friday Night Fireworks, Duke Kahanamoku Beach  
Dates: Friday Nights May 26, 2023 through May 24, 2024 = 53 Fridays

MONTH	2023 - 2024 FRIDAYS				
May				26	
June	2	9	16	23	30
July	7	14	21	28	
August	4	11	18	25	
September	1	8	15	22	29
October	6	13	20	27	
November	3	10	17	24	
December	1	8	15	22	29
January	5	12	19	26	
February	2	9	16	23	
March	1	8	15	22	29
April	5	12	19	26	
May	3	10	17	24	



**Exhibit B**

Display Firing Time: 8:00 p.m. (approximately) – June through August  
7:45 p.m. (approximately) – September through May  
Hours of Operation: Between 4:00 p.m. and 9:00 p.m. (each date)

We are requesting authorization to conduct all procedures associated with display operations to include:

- Closure, security, and monitoring of the work zones, fireworks discharge site and adjacent safety fallout zone.
- Access to the firing site via small box truck carrying pyrotechnics and equipment.
- Positioning of mortar racks and firing equipment on the beach.
- Setup and wiring of pyrotechnics; display ignition from the specified area.
- Completion of all post-display operations as related to each pyrotechnic display.

#### Plan of Action

Prior to unloading equipment and pyrotechnics, at approximately 4:00 p.m., HEP personnel will close and secure the area marked on Exhibit A with a green line and labeled "work zone". This area will be closed from 4:00 p.m. to 8:15 p.m. or until the Operator and/or HFD Inspector deems it safe to re-open.

Once the "work zone" is secured, a small box truck carrying pyrotechnics and equipment will proceed to the area marked on Exhibit A with red x's and labeled as "fireworks discharge site". Here, we will begin display setup procedures which involves positioning racks containing 2.5" and 3" mortars, loading and wiring pyrotechnics into mortars, and all other applicable display operations.

For public safety and in keeping with best practices, the truck will be locked and serve as a protected temporary storage for pyrotechnic articles until it is time to fully install into our firing equipment. The box truck will remain on the beach during set up, firing, and throughout post display procedures.

Approximately 15 minutes prior to firing the display, the "work zone" will be expanded into a "safety fallout zone" as defined in Exhibit A with a yellow line. This buffer zone is in compliance with the requirements of the HFD fire permit as well as our insurance policy and conforms to industry standards. The "safety fallout zone" will be monitored by HEP personnel to be sure there are no breaches of security prior to, during, and immediately after firing of the display. Once show has fired and upon clearance from display operator and/or HFD Fire Inspector, the "safety fallout zone" will be reopened and the work zone will be reduced to a much smaller area defined as the "post display work zone" and marked with a purple line on Exhibit A.

#### Standard Safety & Security Procedures

We feel the measures mentioned above will ensure a buffer between the public and the firing site in the event an incident should occur. Hawaii Explosives & Pyrotechnics, Inc. practices safety and security procedures within industry standards to do our very best to minimize risk to the general public, tourists and hotel guests as we prepare for, fire, and clean up after our displays. This includes any COVID-19 mandates enacted by the State of Hawaii and/or City & County of Honolulu throughout the approved permit period. Our personnel are trained to be courteous to everyone while being firm in preventing entry into any potentially hazardous area and adhering to mandates. It is our ultimate goal to present each display in a manner that is absolutely safe, spectacular and enjoyable by everyone.

#### Post Display Clean Up

Following the firing of the fireworks display and upon clearance from the Operator and/or HFD Fire Inspector, HEP personnel will begin post display clean up efforts. This is to include recovering debris from shoreline and water.

Personnel is divided into 4 teams:

##### 1. Discharge Firing Site Breakdown Team

This team is responsible for breaking down the discharge site where the fireworks were launched from. This includes loading the truck up with the firing system and the wooden racks that had contained the pyrotechnics. Once this team is done, they join either the Shoreline Team or the Water Team.

##### 2. Shoreline Clean Up Team

This team is responsible for collecting all fireworks debris that have returned to land. Clean up tools specifically engineered for the purpose of cleaning up in the sand are used throughout the process. Headlamps and/or flashlights are also used to further assist with visual clarity and identification of debris. This team will continue the clean up process until the beach and shoreline is clear of debris. A note worth mentioning, personnel have been trained to also collect trash left behind from beachgoers.

##### 3. Water Clean Up team

This team is solely responsible for entering into the water and retrieving any debris as a result of the fireworks display. A scoop net, headlamp, and a netted bag to hold debris is used for these efforts. They are equipped with chest waders to allow them to go in as deep as necessary. Personnel continue clean up efforts until water is visually clear of debris. This process typically takes 60 minutes.

##### 4. AM Shoreline and Water Clean Up Team

This team arrives on the beach at daylight (usually between 5:00 a.m.-5:30 a.m.) to continue cleaning efforts on the beach, shoreline, and in the water. We will also dive, checking the bottom of the ocean floor for any possible sinking debris that may have occurred. It is also fair to note that this team also collects trash found in water, on the ocean floor, and/or on the beach and shorelines.

Request for Right of Entry

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Our clean up efforts have been effective and we will continue to strive towards doing our best and above not only as part of the permit conditions, but also our company policy.

All other required permits will be obtained from the appropriate agencies. In addition to our plan of action, attached is "Exhibit A" which details our firing site location map and the closure points and times.

Should you have any questions, please feel free to contact me at [REDACTED] or my office at (808) 968-0600.

Sincerely,



Stephanie Pascual  
Vice President

Enclosures

### EXEMPTION NOTIFICATION

Regarding the preparation of an environmental assessment pursuant to Chapter 343, HRS and Chapter 11-200.1, HAR

**Project Title:** Issuance of Right-of-Entry Permit to Hawaii Explosives & Pyrotechnics, Inc. for Aerial Fireworks Display at Duke Kahanamoku Beach Every Friday From May 26, 2023 to May 24, 2024, Waikiki, Honolulu, Oahu, TMK: (1) 2-3-037: portion of 021.

**Reference No.:** PSF# ROE 2023

**Project Locations:** Waikiki, Honolulu, Oahu, Tax Map Key: (1) 2-3-037: portion of 021.

**Project Description:** Aerial Fireworks Display every Friday night from May 26, 2023 to May 24, 2024.

**Chap. 343 Trigger(s):** Use of State Land

**Exemption Class No.:** In accordance with Hawaii Administrative Rules (“HAR”) §§11-200.1-15 and -16, and the Exemption List for the Department of Land and Natural Resources, reviewed and concurred on by the Environmental Council on November 10, 2020, the subject request is exempt from the preparation of an environmental assessment pursuant to General Exemption Type 1, which applies to “[o]perations, repairs or maintenance of existing structures, facilities, equipment, or topographical features, involving minor expansion or minor change of use beyond that previously existing.” Specifically, the subject request is exempt under Part 1, Item 44, which exempts “[p]ermits, licenses, registrations, and rights-of-entry issued by the Department that are routine in nature, involving negligible impacts beyond that previously existing.” The subject request is expected to have minimal or no significant effect on the environment and should be declared exempt from the preparation of an environmental assessment and the requirements of §11-200.1-17, HAR.

**Cumulative Impact of Planned Successive Actions in Same Place Significant?** Yes, the events occur each Friday night at the same location and there will be successive actions in the same place on a weekly basis. However, based on the applicant’s record of conducting multiple environmental cleanups after each display to remove debris from the beach, shoreline, and offshore areas, staff believes that there will be no significant cumulative impact.

**Action May Have** The requested area is a portion of State beach visited by tourists

Significant Impact on  
Particularly Sensitive  
Environment?

and residents and already heavily impacted by human activity. Public access across the requested area is maintained by the Hilton Hawaiian Village staff. In addition, based on the analysis below, staff believes there will be no significant impact to sensitive environmental or ecological receptors.

Consulted Parties:

Agencies as noted in the submittal.

Analysis:

The Board has approved similar ROE permits in the past, most recently on May 13, 2022, under agenda item D-4. The proposed activity is of a similar type and scope of beach activities that have periodically occurred for over two decades and continue to occur on this and other beach areas across the State. Such activities have resulted in no known significant impacts, whether immediate or cumulative, to the natural, environmental and/or cultural resources in the area. Staff also believes that the request will involve negligible or no expansion or change in use of the subject area beyond that previously existing.

Recommendation:

It is recommended that the Board find that this project is likely to have minimal or no significant effect on the environment and is presumed to be exempt from the preparation of an environmental assessment.

# Hawaii Explosives & Pyrotechnics 2023 SUSTAINABILITY PROGRAM



## Company Background

Hawaii Explosives and Pyrotechnics (HIPYRO) was incorporated in 1991 by Donald and Charlene Pascual, who were both born and raised in Hawaii. Mr. Pascual previously worked for Fireworks Hawaii, a provider of professional display fireworks based on Oahu. Mrs. Pascual worked as an EA for Waiakea High and Hilo Intermediate School. Shortly after the incorporation of Hawaii Explosives & Pyrotechnics, Inc., the Pascual's relocated their operations to Kea'au, Hawaii outside of Hilo. In 1997, the corporate headquarters were relocated to Mountain View, Hawaii where it remains today. Our company has been providing aerial fireworks displays and other pyrotechnic productions for over 31 years to a wide array of clientele. In addition to the traditional Fourth of July and New Year's Eve celebrations, our company also produces shows year-round for corporate groups, weddings and other special events. As of 1991, HIPYRO has been producing the Friday Night Fireworks display for the Hilton Hawaiian Village every week with only a few interruptions. The show has become one of the top-rated attractions in Hawaii and remains enormously popular with tourists and locals alike. It is completely free to attend, and typical evenings see hundreds of spectators congregating on Duke Kahanamoku Beach to enjoy the show. Hundreds of other spectators enjoy the show from many restaurants, bars, sailboats and dinner cruises, apartment and hotel lanais, and nearby parks. Indeed, many commercial entities have taken advantage of the display to sell services to their customers that take advantage of the show. It has become an important economic element of the Waikiki scene. Over the years, our company has grown significantly and now produces well over 100 displays every year throughout Hawaii and as far away as Guam and the Marshall Islands. In 2019, Donald retired from the company and day-to-day operations are now handled by a core staff located in Mountain View and Kapolei. There are currently 6 full time staff members, 10 licensed show producers and approximately 20 technicians who are regularly employed by the company. As a Hawaii-based corporation, revenue generated circulates within and benefits the local community.

## Key Participants

Our core team members are the entities responsible for initiating, evaluating and managing this plan:

- Charlene Pascual as President, Secretary, Treasurer,
- Stephanie Pascual as Vice President, Director of Customer Relations
- Bruce Albrecht as Overall Operations Manager, Lead Design Technician
- Pulelehua Pascual as Account Clerk and Expense Manager
- Samuel Kamelamela Jr. as Oahu Operations Supervisor

**EXHIBIT D**

### **Clientele and Economic Considerations**

Our customer base consists of community organizations, corporate incentive groups, resorts and individuals. Many of our clients are referred or booked through various event planners and destination management companies who act as the liaison. Many of the functions they support are corporate incentive groups. We are a part of a larger ecosystem that caters to these groups on a regular basis, such as musicians, dance companies, lighting and audio technicians. We see many of the same faces at events throughout the state as most of these entities are also Hawaii-based organizations.

The groups we service represent a particularly profitable sector of the Hawaii tourism market known as MCI—Meetings, Conventions and Incentives. This sector accounted for almost \$1 billion in revenue in 2019. Additionally, MCI visitors spend on average 21% more than other visitors. MCI visitors spend a substantial amount of their time in resort areas, and when they visit attractions, it is more likely to be as part of an organized group. This allows opportunities for educational initiatives like Malama Hawaii to be imparted. It is also our experience that many of these groups become repeat customers, demonstrating they enjoyed a quality experience while providing a stable revenue stream for the entities that support these activities. Some of the groups also bring in attractions or entertainment such as musical acts that use the opportunity to offer their services to Hawaii residents. As part of the ongoing discussion regarding “responsible tourism” in Hawaii, the MCI sector has a lot of positives going for it.

The key drivers of MCI tourism are the Destination Management companies, or DMC's. As the entities that organize many of the activities and amenities for the MCI groups, the DMC's play a critical role in “selling Hawaii” as a premiere destination. This requires the DMC's to offer cutting-edge entertainment and attractions to compete with other popular MCI destinations like Las Vegas, Orlando, Mexico and the Caribbean. One of our primary focuses is on offering productions that can deliver on that experience. Similarly, we receive feedback from our resort customers that fund fireworks displays for holiday events (such as New Years) that many customers rebook at their property specifically to enjoy the fireworks show we produce. While these displays are funded by the resort and its clientele, their public nature provides opportunity for local revelers to enjoy as well. Fireworks displays have a proven track record of enhancing attendance at public events.

The revenue gained from providing displays to corporate and incentive groups allows our company to better support community-based events. They typically rely heavily on fundraising and sponsorship to finance their activities and the addition of a professional fireworks display can substantially improve interest and attendance. This benefits the other vendors and fundraising organizations involved.

Some examples of community events we have supported are Fourth of July celebrations for Kailua-Kona, Hilo, Kailua and Haleiwa, New Years shows for Hana and Hawi, the Sunset on The Beach series, Kapolei Christmas Parade, Ark of Safety Church and many others.

The Friday Night Fireworks show is a key element of this strategy. It enhances the status of Walkiki as a world-class resort destination and helps to attract visitors. It provides the community with free

entertainment that enhances Waikiki as a social gathering space. It provides local businesses with a highlight they can utilize to enhance their revenue. It helps our company cover the many compliance costs associated with our industry, which in turn provides us greater flexibility and opportunity to support other community-based events. Looking forward, our objective to provide quality entertainment options for the community at large at a reasonable price-point is reliant on offsetting some of the high compliance costs with other sources.

It is also important to note that some of the initiatives in this plan provide positive economic benefits for the company. Many of the choices in reusability, waste reduction and energy efficiency save money, and can help offset some of the inevitable expense of increased labor and innovative products.

### **Environmental Impact**

Our company has long been concerned with the effects of our operations on the local environment. As a Hawaii-based organization, our displays are conducted in the same place that our team lives, works and plays. We recognize the need to leave the area in which we work in an as-good-or-better condition than how we found it. Our displays have traditionally been held on some of Hawaii's most iconic and popular public beaches and leaving them in a degraded condition has never been a viable option. We have long recognized that a lack of diligence in the cleanup and restoration process can lead to an inability to obtain permission to utilize the affected spaces in the future.

Over the years, this philosophy has led to the adoption of an informal set of practices focused on the preservation and restoration process. In determining the suitability of the sites we can use for fireworks displays, post-display cleanup has always been a factor alongside public safety and access considerations. We have always emphasized to our technicians the importance of minimizing waste generation and the need for a thorough post-display restoration.

One of the key components of this program is to initiate a reliable measurement and analysis process into our operations so we can more accurately analyze our progress and implement continual improvements.

Our company has always positioned safety and compliance as the primary objectives of our productions, even above aesthetical considerations. With this plan, we are placing environmental and sustainability considerations on an equal footing within our company culture.

### **Past Milestones**

While it has been informal, our company has made significant and incremental improvements over the years that have decreased our environmental impact. Some of these improvements include:

- **Trusted Suppliers.** We work with a limited number of manufacturers who share the same philosophies regarding safety, quality control and consistency to make devices that are safer and that reduce their by-products.
- **Product Biodegradability.** We collaborate with our manufacturers to ensure that all inert aerial components of our devices are biodegradable (e.g., paper-based).

- **Improved functionality.** We have specified design changes to the aerial devices to reduce the amount of debris that travels beyond the immediate launch zone.
- **Improved processes.** We have developed and invested in equipment and implemented production methods that improve reusability and reduce waste.

### **Pyrotechnic Compositions and Particulate Matter**

Since our company does not manufacture the pyrotechnic devices we utilize, we are reliant on our manufacturing partners to use formulations that avoid and/or minimize the use of environmentally sensitive materials. Most toxic substances have already been banned by regulatory authorities to protect both employees and users of the devices. Our team regularly monitors industry news to find new products and compositions that produce less smoke and particulate matter. Of particular interest is low perchlorate compositions; however, these are still limited in their functionality and applicability. Where possible, our company is integrating the use of newer formulations into our displays. An issue we face in this area is a limited number of manufacturers and a reliable supply chain. As improvements are made these products can be integrated to a larger extent.

### **Fireworks Best Management Practices Policy**

Our company has adopted a Best Management Practices policy in order to minimize the discharge of any debris or pollutants into the environment. These practices inform the planning, operation and cleanup elements of every display conducted. By creating a formal policy, we can ensure employees receive the proper training and ensure they plan, execute and perform post-display cleaning in a consistent and effective manner. In requiring a site design assessment and a post display report, the company ensures accountability from every team member involved in the planning and execution of a display. The Best Management Practices also establish a monitoring program that evaluates efficacy and allows for policy review and improvement on an ongoing basis:

1. Whenever possible, the use of pyrotechnic formulations that replace perchlorate mixtures with other oxidizers that burn cleaner, produce less smoke, and reduce residual particulate matter shall be considered.
2. The firing site shall be evaluated and the firing range designed to minimize the introduction of debris into the water.
3. A written pre-site assessment of the firing range shall be conducted to determine supplies, equipment and staffing necessary to conduct a thorough and effective post-display cleanup.
4. All plastic and aluminum wrappings, labels and plastic components shall be removed from the pyrotechnic devices prior to launch.
5. All equipment used to hold and launch the fireworks shall be secured properly in accordance with applicable laws and regulations and in such a way as to minimize the risk that equipment and fireworks would fall in the water and facilitate removal of such debris.
6. The area shall be monitored for the presence of wildlife, particularly threatened or endangered species. If any are detected in the firing range, we shall postpone, cancel or otherwise mitigate

- the impact of the display appropriately and in consultation with the authorities having jurisdiction.
7. Immediately following a display of fireworks, all hazardous fireworks materials (including duds) and pyrotechnics resulting from the set-up, firing, and breakdown of the display shall be handled and managed in accordance with applicable fireworks and hazardous waste management laws and regulations.
  8. As soon as practicable, feasible, and safe, but in no case after 3 calendar days, all debris shall be collected and removed from ignited and un-ignited pyrotechnic material including aerial shells, stars, paper, cardboard, wires and fuses found during the inspection of the entire firing range.
  9. All non-hazardous solid waste resulting from the set-up, firing, and breakdown of the display, including wires, boxes, and packaging, shall be collected to the extent practicable and properly disposed of. Any other non-fireworks trash found in the area should be collected and disposed of.
  10. Fireworks shall be packaged, transported, stored, set-up, and handled in accordance with Federal, State, and County laws and regulations to prevent or minimize firework pollutants from entering or remaining in surface waters.
  11. All personnel implementing these Best Management Practices shall be properly trained regarding implementation. The provider shall identify the personnel to be trained, their responsibilities, and the type of training they are to receive.
  12. The amount of debris collected shall be documented upon completion of the cleanup process. Where practical, photographs shall be taken of the debris. An estimate of the total amount of as well as the proportion of fireworks vs. non-fireworks debris shall be made, either by weight or by volume.
  13. The condition of the firing range shall be documented by taking photographs after the cleaning process has been completed. The photographs shall contain recoverable geographic and time data and shall be retained.
  14. If required by the pre-display site assessment, the property owner or their representative shall affirm in writing that the display area has been restored to its original condition.
  15. A post-display report shall be completed that includes the information collected by the clean-up crew and retained for review and assessment.

### **Monitoring, Feedback and Auditing**

Feedback from staff is a critical component of the overall success of the program. It is important that staff members and leadership report on the success and/or limitations so that this program can be continually refined. Additionally, it is important to assess the progress of the program through the implementation of a collection report. The refinement of cleaning techniques and adoption of new equipment can potentially increase the efficiency, thereby reducing costs. A comprehensive

post-display report to be completed by team leadership that is comprehensive is a crucial element.

The report includes:

- Information on the environmental conditions (weather, moonlight, wind, etc.),
- Number of personnel involved in the cleanup and the amount of time spent on cleanup activities,
- The amount of debris collected, either by volume or by weight,
- A description of the type of debris, particularly if there is anything unusual spotted,
- Photographs of the debris collected,
- Any feedback collected from our crewmembers.

The report is combined with a display report discussing other production-related topics. It is retained and utilized to create future assessments at that particular venue. A 5 business-day deadline for submission is required to ensure completion and accuracy. An audit of the report by management shall be performed that will inform future procedures and policy adjustments.

### **Tools and Techniques**

Our company has recently invested in planning software that can inform the site assessment process. These include,

- Ballistic trajectory plotting to better predict the likely debris field on a display. The trajectory plot can be adjusted based on wind speed and direction.
- Environmental by-product assessments of the particulate matter produced by a given display.
- An audio intensity impact calculator to assess the potential sonic impact of a given display.

We also continue to experiment and refine the tools we utilize to facilitate post-display cleanup, including,

- Custom-built collection devices,
- Leaf sweepers,
- Firing range lighting equipment,
- Collection nets for in-water use
- Snorkel and dive gear,
- Employee PPE (gloves, glasses and waders)

### **Site Surveys**

For shoreline display sites used repeatedly, we are performing periodic dive surveys to monitor the condition of the bay and ensure we are retrieving all debris entering the water. The survey is analyzed to determine efficacy of the program and to adapt our techniques to maximize retrieval.

### **Beach Stewardship**

As a regular user of Duke Kahanamoku beach, we feel an obligation to aid in the management of the shoreline and water areas, ensuring a high quality recreational experience for residents and visitors alike. This extends well beyond the best management practices by collaborating with other regular

users in the area such as the canoe clubs, the Hilton resort staff, the surfers, and the beach boys to keep the entire area clean and maximize public access. Our crews are instructed to routinely collect and dispose of other beachgoer trash in the area as part of their post-display operations. Additionally, the Hilton Resort provides and manages numerous trash receptacles and provides beach cleaning and sifting on a daily basis. We also have a long track record of collaborating with other users to ensure everyone can enjoy their particular activities with as little disruption as safety allows..

### **Debris Collection Goals**

Our company is pledging to attain 100% collection of waste debris by either reducing the amount of non-combustible components in the devices used or through improvements in the retrieval process by the next renewal period. We will also increase the utilization of low-debris, low smoke devices as product development advances and availability improves.

### **Source Waste Reduction Policies and Goals**

Our company has identified a number of areas in which we can significantly reduce our environmental footprint.

- **Single use plastics.** Identify sources of single-use items such as plastic water bottles. Our goal is to provide water jugs on every display site and reusable water flasks to all of our crewmembers to eliminate single use bottles.
- **Cardboard recycling initiatives.** Our goal is to implement a recycling program for all of our cardboard packing cartons.
- **Reusable hardware.** Identify areas where fixture and fastening options can be made reusable. We have already had success by implementing rack strapping in place of screws and wood for fixture securement, and we want to continue to build on these practices.
- **Copper recycling initiative.** Our company utilizes a significant amount of small-gauge copper wire, which is difficult to recycle. Our goal is to invest in a separator machine to segregate the copper from the insulation to facilitate the recycling process. In the interim, we are storing the used wiring in anticipation of the acquisition.
- **Renewable energy and conservation initiatives.** Our company is investing in solar technology for our offices and baseyard supplies. We hope to have the project completed by the end of 2024. We are also in the process of upgrading our office equipment and fixtures with more energy efficient models and should be able to complete the process by the end of 2023.
- **Fuel use reduction.** In the long term, we would like to be able to replace our transport vehicles with an electric option, once these become available and suitable for our needs. In the short term, we have implemented a carpool support program for our crewmembers to reduce the number of vehicles used to commute.

### **Our 30 by 30 Initiative**

Borrowing the title of the seminal land and water conservation pledge made by the Federal and several State Governments, our company is pledging to reduce the impacts of our operations across the board by a minimum of 30% by the year 2030. This includes:

- A 30% reduction in the emissions and combustion by-products produced through product selection and innovations in chemistry,
- A 30% reduction in the inert debris generated by the aerial fireworks we use,
- A 30% reduction in the subsidiary waste generated by our operations such as packing materials and production supplies,
- A 30% increase in our recycling initiatives,
- A 30% decrease in energy use at our baseyard and office locations,
- A 30% decrease in emissions related to transportation of equipment and crew.

### **Carbon Offset Initiatives**

Pyrotechnic devices produce their spectacular color and sound effects through a combustion process. While our industry as a whole can continue to make improvements that reduce emissions through quality control measures and product innovations, it is impossible to entirely eliminate the production of greenhouse gasses from a fireworks display. This means it is important for us to find meaningful projects that can offset our operational footprint to achieve the goal of becoming a carbon neutral organization. Likewise, we can reduce any other impacts we may have engaging in programs that improve water quality and remove non-degradable trash. Our partnership with our sponsor, the Hilton Hawaiian Village, helps influence the choices and adds. Some of the programs we have recently become involved with are:

- Beach Cleanup activities coordinated with Hilton Hawaiian Village and Waikiki Ohana Workforce
- Terrapass Carbon Offset program
- Hawaiian Legacy Reforestation Initiative

### **Industry Partnerships**

We recognize our sustainability goals will be more easily attained if we work together as an entire industry to reduce our impact. Through our affiliation with the American Pyrotechnic Association, we are collaborating with other display companies to reduce the impacts that our shows have on the environment. As a collective we can more effectively challenge manufacturers to innovate and invest in products and methods that are safer for the environment. We are also collaborating on operational methods that reduce waste and improve safety and efficiency, accelerating the timeline to reach our goals.

### **Conclusion**

As the only locally-based fireworks display company in Hawaii, we feel we have a special obligation to set the standard for sustainability amongst our industry partners. It is vitally important that we model best practices that reduce our impact to the maximum extent possible. As a component of both the local live event and visitor industry, it is important we work together to sustain the places and principles that define our islands and make our home so appealing. As residents ourselves, it is important we continue to support community events that increase engagement and enhance entertainment opportunities. As regulatory, compliance, labor and materials costs continue to escalate, it is critical we maintain a minimum threshold of productions that can cover our baseline overhead costs while allowing us opportunities to support community events. We feel very strongly that our professional displays provide an effective alternative to the unregulated, unsafe, inappropriate and downright illegal use of fireworks in neighborhoods. Given the cultural significance of fireworks within the community at large, it is unlikely Hawaii will ever be able to eliminate the problem entirely. However, we do feel we have a role to play as a way to safely continue the tradition. As a licensed provider, we can offer the community and visitors alike the means to enjoy the excitement, spectacle and artistry of these wondrous devices while offering a measure of safety and accountability to their use. By collaborating with the various regulatory agencies, industry partners, and environmental stakeholders, we can strive to achieve a model that continues to reduce their impact and preserves this cultural heritage. The goals set herein provide a scaffold to build upon well into the future.

## **Appendices**

### **Appendix A: Best Practices training document for employees**

#### **Best Practices for Fireworks Display Cleanup**

All crewmembers shall follow these Best Practices to minimize the discharge of any debris or pollutants into waters in and adjacent to the firing site and facilitate the removal of debris that does enter those waters. The plan should include, at a minimum, the elements described below and should be specific to that site.

1. The crew shall remove all plastic and aluminum wrappings, labels and components from pyrotechnic devices prior to launch.
2. All equipment used to hold and launch the fireworks shall be secured properly in accordance with applicable laws and regulations and in such a way as to minimize the risk that equipment and fireworks would fall in the water and facilitate removal of such debris.
3. After completion of display and upon all-clear notice from display operator, all hazardous fireworks materials (including misfires) and pyrotechnics resulting from the set-up, firing, and strike of the display, shall be handled and managed in accordance with applicable fireworks and hazardous waste management laws and regulations.
4. All non-hazardous solid waste resulting from the set-up, firing, and strike of the display, including wires, boxes, and packaging, shall be collected to the extent practicable and properly disposed of.
5. Fireworks shall be packaged, transported, stored, set-up, and handled in accordance with Federal, State, and County laws and regulations to prevent or minimize firework pollutants from entering or remaining in surface waters.
6. All personnel shall be properly trained regarding the implementation of these practices.
7. The crew shall document the amount of debris collected upon completion of the cleanup process. Where practical, photographs shall be taken of the debris. An estimate of the total amount of as well as the proportion of fireworks vs. non-fireworks debris shall be made, either by weight or by volume.
8. The crew shall document the condition of the firing range by taking photographs after the cleaning process has been completed. The photographs shall contain recoverable geographic and time data and shall be retained. A post display report shall be filed within 5 days of the completion of production.
9. A post-display production crew meeting shall be conducted following the display to evaluate the success of the cleanup, identify any other measures to be taken, and collect feedback on the process.

10. A first-light inspection shall be performed. Any debris subsequently found shall be disposed of properly.
11. A post-display report shall be completed by the Fireworks Provider that includes the information collected by the clean-up crew and retained for review and assessment.

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I HAVE READ AND I UNDERSTAND THESE BEST PRACTICES:

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SIGN

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DATE

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PRINT NAME

### Appendix B: Post Display Report

## Post Display Report



Display Date \_\_\_\_\_ Control No. \_\_\_\_\_  
Event Name \_\_\_\_\_ Start Time \_\_\_\_\_  
County \_\_\_\_\_ End Time \_\_\_\_\_  
Firing Site \_\_\_\_\_  
Firing Range  Land  
 Water  
Operator \_\_\_\_\_ License No. \_\_\_\_\_  
Supervisor \_\_\_\_\_ No. on Crew \_\_\_\_\_  
Fire Inspector?  Present GWT \_\_\_\_\_  
Inspector Name: \_\_\_\_\_ NEQ \_\_\_\_\_

**ISSUES** *Check if yes, and attach statement, description or list describing the issues if necessary*

Misfires?  \_\_\_\_\_  
Post-display Launches?  \_\_\_\_\_  
Property Damage?  \_\_\_\_\_  
Fire?  \_\_\_\_\_  
Injuries?  \_\_\_\_\_

**Debris**

Amount of Debris collected from Firing Range: \_\_\_\_\_ Gallons ▾  
Amount of non-fireworks debris collected: \_\_\_\_\_ Gallons ▾  
In-water Cleanup performed?   
Time spent on cleanup \_\_\_\_\_ Hours  
First Light Inspection?  No. of People \_\_\_\_\_ Hours spent

*Describe any issues, challenges, suggestions, and/or improvements to be made to cleanup process:*

\_\_\_\_\_

\_\_\_\_\_

*Describe any issues, challenges, suggestions, and/or improvements to be made to display:*

\_\_\_\_\_

\_\_\_\_\_

Completed By: \_\_\_\_\_ Date: \_\_\_\_\_

## Impact Mitigation Report For the Friday Night Fireworks Display



### Abstract

This report is an analysis of the impacts that occur to both Duke Kahanamoku beach and the surrounding neighborhoods from the production of the Friday Night Fireworks. It primarily addresses the areas of debris, emissions, noise and public access. It examines the significance of those impacts, mitigation efforts undertaken by the sponsor and the producer, and evaluates various options and methods of reducing those impacts in the future. The primary concern for adverse cumulative impact in the area is cardboard debris from the aerial firework shell casings. Cleanup from this debris is more challenging in the submerged sections of the firing range. Particulate and gaseous emissions, while present, pose relatively minor adverse cumulative impacts. Noise is a feature of the medium, though there are several mitigations that can reduce the intensity and area affected. Limitations to public access is primarily a safety consideration and neither the producer nor the sponsor are aware of any specific complaints regarding access during the productions.

### History

The Friday Night Fireworks display has been held on the shoreline fronting Duke Kahanamoku Beach starting in the late 1980's. Since its inception, the display has been exclusively sponsored by The Hilton Hawaiian Village Resort and Spa. It has traditionally been the culminating element of a showcase of Hawaiian and Polynesian history told through dance and narrative located at the resort's main pool deck. Initially, the program centered around the story of King David Kalakaua and his love for entertainment, including fireworks displays. Though the production has gone through several programmatic changes throughout the years, the two constants have been the Tihati polynesian dance revue and the fireworks finale. The production has been nearly a continuous feature of the Waikiki experience since its inception, with the significant exception of the 2 year pause during the COVID-19 pandemic. Since the resumption of the fireworks in June 2022, the production has yet to restore the other entertainment medium.

**EXHIBIT E**

## Production Data

The fireworks production is currently 3 minutes and 51 seconds in length, and is held at 7:45 p.m. every Friday. The start is moved up to 8:00 p.m. for approximately 3 months in the summer in order to provide surfers in the area more time to access the nearby surf areas. The launch point for the show is roughly the midpoint of Duke Kahanamoku (DK) Beach between the Rainbow Tower and the public parking area. The location has been selected primarily to comply with County regulations regarding safe distances as adopted from the NFPA 1123, Code for Fireworks Displays. The area secured during firing is to provide safe distances in the rare event of a misfire or other failure and to protect the public from any hazardous falling debris. In any aerial fireworks display, there is a chance of a misfire preventing a shell from deploying its contents, thereby falling back to the ground. There is also the risk of a shell actuating close to the ground that could project burning pyrotechnic compounds. For these reasons, the producers close the safety zone to public access for several minutes prior to the display and for several minutes thereafter, when the lead technician evaluates the site to ensure no further hazards exist.

The show itself is composed of multiple types of pyrotechnic devices of various sizes up to 3 inches in diameter. The trajectory of the largest shells carries them to an apex of approximately 275 feet. The typical burst for the largest shell is approximately 200 feet in diameter. There is approximately 57 kilograms (125 lbs.) of pyrotechnic content in each display, most of which is black powder (potassium nitrate, charcoal, and sulfur). Black powder provides the lifting propellant as well as the charge that causes the aerial shells to break open at their apex. The colors are produced by a combination of an oxidizer such as potassium perchlorate and a fuel which is generally a metal salt. When the fuel oxidizes, or burns, at a specific temperature it emits wavelengths of light at certain frequencies on the electromagnetic spectrum and produces the various colors one sees.

The display is fired electronically using a specialized computer. The lead technician retains the ability to suspend the display nearly instantly should a hazard arise during operations. The entire production typically requires 5 to 6 hours to produce from arrival to final cleanup operations. Additional cleaning operations and debris retrieval is conducted early the following morning, and periodically throughout the week if needed.

## Firing Range Selection and Inert Debris

### Current status

The aerial components of the shells are encased in a cardboard container or casing. The casing on a 3 inch diameter spherical shell is typically approximately 3 millimeters thick and weighs approximately 51 grams. There are no plastic components utilized in the shell casing. During

deflagration, a portion of the casing is consumed in the reaction, while the remainder is fractured into small pieces of various sizes that fall back to earth within the firing range. The Friday show currently produces approximately 10 kg of this retrievable cardboard litter<sub>1</sub>. Shortly after the conclusion of the display and as soon as it is safe, our technicians enter the firing range and begin collecting the resultant debris.

The firing range is selected primarily to protect the spectators from the hazards of a possible malfunction. The ballistic trajectory of the aerial shells is chosen to contain the inert debris within the zone. Figure 1 is a diagram of the firing range showing the predicted trajectory of the aerial devices. The majority of the debris-producing devices (approximately 66%) are currently oriented to keep the debris field on the non-submerged beach area or in the nearshore submerged area<sub>2</sub>. This will vary depending on the environmental conditions at the time of firing, primarily wind speed and direction. However the majority of debris will fall either on land or within 15 feet of the water's edge.



**Figure 1.** Ballistic Trajectory of the weekly display. The green x indicates the launch site, and the green arrow indicates wind direction. The blue lines indicate aerial shell trajectories, the orange dots the expected break point and yellow dotted lines the burst radius. The dotted red lines indicate the maximum expected debris fallout range.

For the debris that falls into the water, the majority will float for a number of hours after landing. The light wave action in the bay will tend to push the debris back onto the shoreline, making debris retrieval more effective. Additionally, the section of the bay that is a part of the fallout zone has relatively slow circulation, keeping the debris concentrated within that area. Our cleanup operation consists of several crewmembers who focus on land-based debris retrieval and at least two that enter into the water to focus on nearshore areas. These crewmembers are trained on our best management practices to ensure consistency and thoroughness. Recent measurements indicate we routinely retrieve approximately 10 gallons of inert fireworks debris after the display. The crew is instructed to collect any other trash found in the area, no matter the source. Recent measurements indicate the non-fireworks waste is typically an additional 5 gallons of material, and consists of a variety of objects such as bottle caps, plastic cups and straws, cigarette butts, hair ties, beach toys and snorkeling gear. At first light the next morning following the display, we resume our cleaning operations and retrieve any debris that was not missed. This typically consists of an additional 3 gallons of waste, of which half is typically non-fireworks trash. This is in addition and complementary to the Hilton Hawaiian Village staff's daily maintenance of the DK beach area with their trash receptacles, sand grooming tractor, and beach cleaning. The amount of debris collected after each production is recorded in order to inform about differentials related to environmental conditions or product variations.

Our studies of the firing range indicate that the inert casing debris is contained within the bay area as defined by the breakwall and the pier. Under normal tradewind weather conditions, the water in this area circulates in a counterclockwise fashion. This tends to push any underwater debris against the breakwall and away from the pier. In instances where the prevailing wind comes from a southerly direction, i.e., Kona winds, this circulation can reverse. In those instances additional manpower and time is provided towards the cleanup efforts. Periodically and as needed, the cleanup crew surveys and retrieves debris from the deeper, outer sections of the bay. Dive studies have indicated that a small amount of debris can collect in the deepest, central section of the bay in the center of the vortex, necessitating periodic cleanups of this area. The frequency varies depending on the weather conditions and whether surveys indicate debris presence. At no time have we ever discovered any debris in the submerged area beyond the breakwall, and analysis of the range of debris on the nearby non-submerged areas supports this position. Furthermore, if inclement weather conditions push debris outside of the firing range, the display will be suspended and/or canceled for safety purposes.

#### Potential future mitigations

- **Relocation or repositioning of the Firing Range.** Several years ago, a study was performed to determine whether the display could potentially be relocated to use the adjacent lagoon. Unfortunately, concerns about safety, viewability and limits to public access indicated this location wasn't viable for the weekly show. Reorientation of the display is also difficult as the objective is to maximize the level of safety for spectators while minimizing the introduction of debris into the water.
- **Changes in product size and type.** There has been significant experimentation in this direction. By reducing the size and/or type of devices that require the greatest angle, we can further limit the amount of inert debris that falls into the water. However, the supply chain for commercial pyrotechnics is heavily regulated and of limited availability. This means that the period of time between placing an order with the factory and the time of receipt currently stands at a full year. Indeed, the product utilized for the weekly show in the 2022-2023 ROE permit period was actually ordered in 2019 and received in mid-2020. We have a new order of pyrotechnics that is anticipated to arrive in mid-May 2023, which was placed in June 2022. The current order includes device designs that should reduce the introduction of inert debris into the water. We continue to research new devices that will reduce debris as well as finding new resources that would expedite the order cycle.
- **Reduction in the number of displays.** As the sponsor, the Hilton Hawaiian Village is ultimately responsible for determining the number of displays they would like to conduct. The current weekly interval is based upon a visitors' average stay. With a show conducted every week, most of their guests will have an opportunity to enjoy the fireworks at some point during their visit. By holding the production on Fridays, local residents are attracted to Waikiki for their Aloha Friday festivities and find it easier to attend. While the Hilton recognizes and celebrates the community benefit of the display, ultimately it is the revenue generated by their guests that finances the production.
- **Increased Surveying.** Studies imply that paper-cardboard debris should decompose within 30-360 days in a marine environment<sub>s</sub>. With displays conducted weekly, it can be reasonably predicted that inert debris will accumulate in a significant and noticeable manner if not collected. Our current assessments indicate that outer-bay underwater surveys need to be conducted at least every 30 days, and more frequently if there are a number of Kona wind events during firing. We will continue to use the results of previous surveys to determine and adjust the interval period.

#### Actionable Target

- Improve inert debris collection to 100% compliance through product changes and increased monitoring/surveying/retrieval efforts within the next permit period.
- Document dive survey findings and establish criteria for survey frequency.

## Emissions and Particulates

#### Overview

The chemical reactions that produce the light and sound in pyrotechnics are by their very nature emissions of greenhouse gasses. Pyrotechnic compositions contain a fuel, such as carbon, and an oxidizer, such as potassium nitrate. When the components are combined and heat is added, an exothermic reaction occurs. Energy is released as heat and light and the resultant waves of energy are perceived as sound. Elements that were originally trapped within solid compounds are converted into gasses.

When we consider the impact of these materials in use at a fireworks display, it is important to focus on the by-products of those reactions. For example, the potassium nitrate, charcoal and sulfur components of black powder convert into carbon dioxide, carbon monoxide, nitrogen, potassium carbonate, potassium sulfate, and water. There are a multitude of different compounds in use on the Friday night show in order to produce the various effects the spectators see. However, the proportions of the source chemicals remain similar enough to generalize the expected output of a typical display. For example, since black powder is used as the propellant for aerial shells, we can predict that 80% of the pyrotechnic substances on any given display consist of this compound. We can therefore utilize simple calculators to reliably predict the amount and composition of the by-products based on the overall weight of the source materials.

#### Current Status

The typical weight of the pyrotechnic components is 57 kg. Using a calculator, we can therefore predict the amount of gasses produced by a display of this size would be approximately 16.5 kg<sub>6</sub>. Table 2 illustrates the various by-products resulting from the weekly show. The compounds released would consist primarily of carbon dioxide and carbon monoxide, and much smaller amounts of Nitrogen Oxides and Sulfur Dioxide. For comparison, a diesel tractor trailer carrying a load produces approximately 2 kg per mile traveled<sub>7</sub>. The carbon equivalent of the use of a 60kVA diesel generator at events like carnivals and concerts is released approximately every 24 minutes of operation<sub>8</sub>. Due to their intermittent nature, commercial fireworks displays are currently exempt from clean air standards like those set by the EPA.

Carbon Dioxide	11.98	kg	
Carbon Monoxide	3.50	kg	
Sulphur Dioxide	0.19	kg	
Nitrogen Oxides	0.86	kg	
Nitrogen	2.96	kg	
Barium Carbonate	3.65	kg	medium solubility
Barium Sulphate	0.80	kg	medium solubility
Potassium Sulphide	8.09	kg	Soluble
Potassium Carbonate	7.07	kg	Soluble
Potassium Sulphate	6.50	kg	Soluble
Potassium Chloride	1.25	kg	Soluble
Barium Oxide	0.34	kg	Low solubility
Aluminium Oxide	10.37	kg	Low solubility
Potassium Oxide	0.46	kg	medium solubility
Carbon (as soot)	0.03	kg	Low solubility
Metal salts	6.50	kg	Low solubility
<b>TOTAL</b>	<b>64.56</b>	<b>kg</b>	
Carbon output: (as CO2/CO)	15.48	kg	
Nitrogen oxides (NOx)	0.86	kg	
Sulphur dioxide (SO2)	0.19	kg	
Total solids	48.02	kg	
Total solids (insolubles)	17.24	kg	Only insoluble by-products are considered to pose health concerns for inhalation.
PM10 (insolubles)	1.72	kg	
PM2.5 (insolubles)	0.86	kg	

**Table 2.** Combustion by-products produced by a typical 57 kg aerial fireworks display

It is important for all industries to evaluate the amount of carbon emissions produced by their operations and to identify and implement appropriate source reduction methods. In examining our operations, it is clear we can achieve greater reductions by focusing on the transportation modes utilized to move equipment and personnel, which currently produces approximately 91.5 kg of these gasses. Unfortunately, it is difficult to place a specific timeline on upgrades in this area as the technology in regards to freight hauling is nascent.

The other area of study is the particulate by-products produced by the pyrotechnic reaction as summarized in Figure 2. There is a small inhalation hazard presented by some of these particulates to populations with sensitivities, but the limited exposure time and broad disbursement negates most of the concern. An examination of the hazards posed by these substances indicate their risk is principally at the occupational exposure level. Some examples are aluminum oxide, which is an ingredient in some sunscreens and sandpapers, and barium sulfate, which is routinely ingested as a radiographic contrast agent. A number of the substances, particularly the potassium compounds, are commonly used in fertilizers. However, without the presence of phosphorus (which is not an element used in any fireworks) and nitrogen (which is only released in gaseous form), the potassium remains unavailable and has

not been found to promote vegetative or algal growth. Review of 10 years of testing data from the DOH Clean Water Branch indicates no significant cumulative changes to water quality that can be attributed to fireworks. Other by-products such as barium carbonate can become toxic under certain circumstances—it will combine with hydrochloric acid in the stomach to produce barium chloride, which can be absorbed into the bloodstream. However, the subject would have to ingest the barium carbonate in significant quantities to cause significant harm. Some studies have indicated the presence of residual amounts of perchlorates following fireworks displays<sup>10</sup>. Perchlorates are identified by the NIH as an Iodine Uptake Inhibitor in humans, which can pose adverse health impacts to certain populations. The vector of introduction is through ingesting contaminated drinking water over a period of time. Perchlorates are highly soluble in water and can be expected to dilute rapidly. Since perchlorates are a source compound and not a by-product, their presence post-display would be negligible. Most concerns with perchlorates focus on occupational exposures and municipal water supply contamination resulting from large scale manufacturing operations.

In general, the insoluble by-products produced by the weekly show will settle into the sediment after the display, while the soluble compounds will dissolve in the water and be diluted. Studies on the cumulative effects of fireworks displays in near-shore environments indicate that the soluble by-products dissipate below measurable levels shortly after the production<sup>11,12</sup>. The studies indicate that some insoluble compounds can accumulate in the bathic sedimentary layer over time. However, these compounds are not biologically available and do not pose any significant risk to aquatic biota or humans.

It can be challenging to attribute causation since many of these compounds are presented environmentally through other vectors, including dissolved minerals in seawater itself.

#### **Potential future mitigations**

- **Hazardous chemical elimination.** Some of the compounds present in pyrotechnic devices can be hazardous at an occupational level. It is therefore meaningful to promote the discontinuance of materials that have significant toxic concerns within the manufacturing process. This is a primary reason to reduce the use of perchlorates as an oxidizer. We are also always looking at methods to reduce the amount of particulate matter—smoke—released for both environmental and aesthetic reasons. We will continue to research products that reduce and eliminate the risk of toxicity throughout the supply chain. Additionally, we will continue to monitor for studies and other resources that inform us of unknown hazards or methods of reduction that are applicable to our operations.

- **Greenhouse gas reduction.** Focusing on the transportation segments of our supply chain is the most effective method of reducing our carbon footprint. Unfortunately, at this time, there is no foreseeable method to reduce greenhouse gas emission from the pyrotechnics themselves, as their release is a feature of the reaction.
- **Product quantity/frequency reduction.** As with the debris mitigation, another method of reducing the emissions is to reduce the amount of pyrotechnics used and/or reducing the frequency of the displays. This is an area we continue to experiment with in order to reach the reduction targets set out in our sustainability plan.

**Actionable Target**

- Reduce smoke and particulate matter through design changes and device selection by 10% during the next permit period.

## Noise Mitigation

**Current Status**

Noise from the burst of aerial shells is a feature many spectators enjoy. Indeed, there are some devices known as salutes whose primary function is a loud bang. Salutes are traditionally used at the end of a display, as a crescendo. Sound levels from a particular display are notoriously difficult to predict, as there are many factors that can affect intensity at a given location level, including topography, frequency range, reflections, humidity, cloud cover, wind speed and direction. Sound intensity can be predicted to vary significantly from week to week based on these conditions. It is generally held that intensity levels above 120dB are considered dangerous to hearing<sup>13</sup>. Sound levels between 80dB and 120dB can be harmful with sustained exposure. A hair dryer measures approximately 85dB. A lawn mower measures approximately 105 dB. A loud concert is approximately 115dB. Sirens and aircraft measure 120dB and above. Figure 3 predicts the approximate ground area where a subject might be exposed to 120dB intensities. The area affected has an approximate radius of 100m downwind from the display. This area roughly coincides with the firing range, so most spectators would not be expected to be exposed to these levels. Since the sonic wave created by salute breaks are instantaneous, actual risk to hearing can be predicted to be minimal.



**Figure 3.** Predicted area of sound intensity of 120dB when using salute shells

The other significant area of concern with the sound intensity of fireworks is surprise and/or fear to humans and animals. In an open, clear space, the sound intensity of 90dB from salute shells could be predicted to reach up to 5km<sup>14</sup>. This will vary substantially depending upon the location and environmental conditions. Studies have indicated that reactions to the noise are related to the transition from quiet to loud—it is the sudden increase in intensity that creates distress amongst vulnerable subjects. Studies on the impacts on wildlife have been mixed. Observations of wildlife near fireworks displays demonstrate initial agitation at the beginning, such as a flock of birds flying away when the display begins. However, it has been observed that often the same flock will return to their original location a few minutes later, even while the show is still going on. Similar observations have been made with seals—they may swim away at the beginning of the display but typically return<sup>15</sup>. Additionally, analysis demonstrates that the noise from aerial fireworks does not conduct well beneath the surface of water, therefore aquatic life should remain largely unaffected<sup>16,17</sup>. Surveys of reductions in stress to domestic animals from loud noises suggest the most effective means of minimizing impact are adequate preparation and conditioning. Since it is generally the surprise of the sudden

unexpected loud noise that can cause the most distress, it is important to provide adequate notice to the population within the area potentially affected so that appropriate preparations can be made. Additionally, keeping display operations within the scheduled period of time is also important to minimize the impact and inconvenience. For these reasons, it is sensible for communities to promote organized professional displays while deterring illicit private use.

#### Potential future mitigations

- **Reductions in noise intensity.** Since salutes are by far the loudest devices, their use should be minimized or eliminated. We are eliminating all aerial salute shells in the weekly show starting in June 2023. The change will coincide with the arrival of our new order sometime in Mid-May, and should relieve some of the stress on sensitive populations.
- **Transition to the crescendo.** By designing the display to place lower intensity devices at the beginning, we can potentially reduce some of the shock of the transition to higher intensity sound.
- **Public education and notification.** It is important to notify the public in advance so sensitive subjects can prepare accordingly. If changes are made to the schedule, adequate notice should be given. We intend to provide public information and notice about potentially useful mitigation tactics.

#### Actionable Targets

- Eliminate high intensity salute shells from the program.
- Modify show design to reduce the loudest noises, particularly in the beginning segment of the display
- Provide appropriate public notification of any changes to the display time through press releases.
- Support regulatory initiatives to reduce the illicit use of aerial fireworks within the community.

## Alternative Media

#### Current Status

Hawaii Explosives & Pyrotechnics is a fireworks display provider. Our sponsor, the Hilton Hawaiian Village, has contracted us to produce their weekly fireworks display as a part of a multimedia production. Any modification to the program that involves other forms of media is ultimately a decision to be made at the sponsor level, as is their choice of the provider. Our company does provide a limited number of other services beyond pyrotechnics, and the number and type of services offered is based upon factors including potential and or/realized

demand, budgetary constraints, manpower, market saturation and barriers to entry. In the current post-pandemic recovery environment of both limited revenue and labor resources, our ability to invest in new technologies is hindered. We are continually in discussions with the Hilton Hawaiian Village and our other customers to gauge interest in alternative live entertainment options we may be able to provide.

#### **Potential future mitigations**

- **Drone shows.** While these shows have enjoyed significant public interest recently, drone light shows are expensive and complex to produce. A typical drone light show requires approximately 200 vehicles to create the intricate patterns and animations, as well as communication, network support systems and software. Drones face many of the same issues as fireworks: they are more sensitive to inclement weather conditions, they need a lot of open space for launch and landing, they require separation from spectators for safety and any interference with other aerial objects can create a significant hazard. Due to the high production cost and the relatively high risk of cancellation, the sponsor has ruled out the use of drones at this time. It should be noted that drones are not a low carbon footprint option, given the amount of electricity required. Having said that, it would be possible to offset the impact by utilizing renewable energy generation sources. That is not a particularly viable option at present, especially as drone shows are performed after sunset and the power source for the network would likely need to be portable internal combustion generators. As technology improves in this field, our company will evaluate the viability of incorporating drones into our programs as a means to reduce impacts. Market research is demonstrating that their most popular use is in conjunction with fireworks and not as a standalone medium.
- **Laser Shows.** Outdoor laser light displays are challenging to produce as the light beams are quite dangerous to humans, animals and aerial vehicles. Very powerful laser generators are required for outdoor displays and the beams must be terminated on non-moving inanimate objects well away from spectators. This limits their use in outdoor environments considerably. The beam generators also require considerable power, so the carbon footprint issue remains. We have also seen a waning of interest in the devices by the general public, so their adoption is unlikely.
- **Moving Light Shows.** With the introduction of LED entertainment lighting fixtures and sophisticated software controls, light shows have become fairly impressive in recent years. Due to high acquisition costs and market saturation, this is not an area where we see a viable entry path. Like other entertainment options in this list, the relatively high power usage required for outdoor fixtures is a carbon impact consideration.

- **Video projection.** Disney Entertainment in particular is producing remarkable performances that incorporate video projection at their theme parks. Large projectors are pointed at a building or other large neutral surface and various animations and other visuals are projected. These are highly technical and generally permanent installations that require substantial resources. The Hilton Hawaiian Village does not currently have an available surface that would be particularly effective for this medium. There are already other providers in the market that are a better resource match. Once again, there is the issue of power requirements and sourcing.

## Public Access

### Current Status

All company operations on DK beach are evaluated and adjusted to maximize public safety and minimize public impact. Operations for the display currently begin at 4:00 p.m. on Fridays. The primary authority having jurisdiction is an official from the Honolulu Fire Department. Our crews begin by establishing a safe work zone through the use of a rope barrier and security personnel. Any beachgoers within the zone are asked to relocate to other areas of the beach for their own safety. Our technicians and security personnel are trained to allow beachgoers plenty of time to relocate. We also ask swimmers to avoid the area adjacent to our work zone for their safety. Actual deployment of the pyrotechnics typically occurs at approximately 5:00 p.m. after the area is secured and safe. Loading operations are performed according to County, State and Federal Regulations. Allowances are made during setup to ensure continued access for the beach concession personnel and their surf lessons as well as the canoe clubs. If a member of the public enters the secured area, either security or a technician will approach, explain the safety concerns, and escort them outside the perimeter.

Setup of the pyrotechnic devices is typically completed by 6:30 pm. After sunset but at least 30 minutes prior to the display, we begin to expand the perimeter to encompass the entire firing range. Technicians assume security responsibilities and inform and escort the public through the area. The pathway between the lagoon and the beachwalk is kept open until approximately 5 minutes prior to the start of the display to allow thoroughfare. At this time the walkway is closed until after the display is completed and the lead technician determines it is once again safe for public use. This is typically about 10 minutes after the show is completed, but can be longer if a potential hazard is identified. Once the all clear is given the perimeter is removed and full public access is once again allowed, though we generally discourage beach users from traversing the actual firing site until the crew has removed the launch fixtures and other equipment. Debris retrieval by the technicians and security personnel commences as soon as practicable, feasible and safe. Retrieval continues until all visible debris has been retrieved, which is typically sometime between 9:00 and 10:00 pm.

### **Potential Future Mitigation**

The length of time used for the production is optimized to balance safety and public access. Our company works closely with other entities such as the beach concessions and canoe clubs to ensure their safety and continued access. When we encounter a beach use that conflicts with our operations, our lead technician endeavors to seek compromises. Neither the producer nor the sponsor are aware of any specific complaints related to public access to date. If circumstances change or we discover new techniques or methods of ensuring safety that improve access, we will implement them.

### **Notes:**

1. This figure is based upon both the overall casing weight of the aerial shells prior to firing and on the average volume of cardboard debris collected post display.
2. The devices given the largest angles from vertical are generally ones that produce the least debris, such as comets and mines.
3. Collection measurements taken post-display are given by volume, as any wet cardboard would skew the results. Measurements on dry cardboard debris collected and weighed post-display indicates a conversion of approximately 1.5 gallons per kilogram.
4. Data from dive analysis conducted by Sea Engineering on March 30, 2023 and submitted separately.
5. From "Pocket Guide to Marine Debris," The Ocean Conservancy, 2004.Sources: U.S National Park Service; Mote Marine Lab, FL
6. Table and calculator produced by CarnDu Ltd. explosives consultancy.
7. Data from CarbonCare.org.  
<https://www.carboncare.org/en/co2-emissions-calculator/co2-emissions-values.html>
8. Data from CarnDu Ltd. explosives consultancy.
9. Ibid.
10. Perchlorate Behavior in a Municipal Lake Following Fireworks Displays, R. Wilkin, D. Fione, N. Burnett. 2007
11. Environmental Effects Of Fireworks On Bodies Of Water, Thomas A. DeBusk, Jeffrey J. Keaffaber, Benedict R. Schwegler, Jr., John Repoff, 1992
12. California Regional Water Quality Control Board, San Diego Region, Order No. R9-2022-0002
13. Centers for Disease Control and Prevention,  
[https://www.cdc.gov/nceh/hearing\\_loss/what\\_noises\\_cause\\_hearing\\_loss.htm](https://www.cdc.gov/nceh/hearing_loss/what_noises_cause_hearing_loss.htm)

14. Data from CarnDu, Ltd.
15. California Regional Water Quality Control Board, San Diego Region, Order No. R9-2022-0002
16. Information presented to BLNR from DAR 150D-154 resp to testimony DAR.doc in 2015 and submitted separately.
17. "Because sound attenuates rapidly across the air-water interface, these animals would likely not encounter the effects of fireworks except when surfacing for air. NMFS does not anticipate the take (defined by the Marine Mammal Protection Act as "to hunt, harass, capture, or kill" any marine mammal or attempt to do so.") of any cetacean (due to the fireworks) and they are not addressed further in this document." Fed Reg. Vo. 77, No. 13093 pg. 31537. (May 29, 2012).



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## MEMORANDUM

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DATE: March 30, 2023  
TO: Stephanie Pascual, VP Hawaii Explosives and Pyrotechnic, Inc.  
FROM: Sea Engineering, Inc.  
PROJECT: 12932 HiPyro Hilton Beach Debris Inspection – Findings Memo

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### Introduction:

On March 30, 2023, Sea Engineering, Inc. (SEI) conducted in-water inspection and debris clean up outside Hilton hotel in Waikiki, Honolulu, HI. This inspection was completed previously, in 2017, roughly 5 years ago. The main task was to document and recover debris from fireworks, with a secondary task to recover non-firework related debris. The area outlined in yellow shown below was the specified boundary for the debris inspection work.



Figure 1: Debris inspection boundary shown in yellow.

SEI utilized a three (3) man dive team to accomplish the inspection work. Dive method was surface swimming using mask and snorkel. Divers were equipped with lobster bags to recover found debris and one diver was equipped with an underwater camera for photo documentation.

Visibility was approximately 6-8ft at the time of inspection.

**Inspection findings:**

In general, most debris were found inside the orange boundary shown in Figure 1. Debris found outside of the orange boundary was mostly non-firework related debris. The highest concentration of firework related debris was found in the red circle shown in Figure 1. This area also appeared to be the deepest inside the orange boundary.

Firework related debris were mostly cardboard remnants, many of which were beginning to decay. SEI divers did not observe or recover any plastic T-connection parts.

The dive team conducted the inspection for four (4) hours and determined that the majority of found debris was recovered.

In terms of debris breakdown, it was similar to the 2017 inspection, with approximately 15% firework related and the majority non-firework related. Then divers recovered a significant amount of beachgoer related garbage, including water bottles, sunscreen, bottle caps and snorkel masks.

**Photos:**



Photo 1: Typical cardboard debris found inside orange boundary.



Photo 4: Total debris recovered during 4-hour inspection.



Photo 5: Majority of firework related debris was made of cardboard.



**Photo 2: Typical bottom condition.**



**Photo 3: Cardboard debris found in high concentration area.**

DAVID Y. IGE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 3378  
HONOLULU, HI 96801-3378

VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH

In reply, please refer to  
EMDCWB

04002PDCL.16

April 1, 2016

Mr. Russell Tsuji  
Administrator  
Land Division  
Department of Land and Natural Resources  
P.O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Tsuji:

**Subject: Comments on Residual Debris and Chemicals Deposited in Offshore Marine Waters Resulting from Explosion of Fireworks**

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter, dated March 24, 2016, requesting a determination as to whether residual debris and chemicals deposited in the offshore marine waters resulting from the explosion of fireworks is allowed by the Clean Water Act, and whether any regulatory approvals may be required from our office. Your letter also included a sample right-of-entry permit for an aerial fireworks display in Waikiki.

The DOH-CWB appreciates the mitigative measures on Page 3 of the sample right-of-entry permit (e.g. \$2500 cash deposit to ensure satisfactory clean-up; clean-up to the satisfaction of your staff within 48 hours of notice of findings of additional fireworks debris; evidence of clean-up in the form of date and time stamped photographs before and after the fireworks display; signed certificates from your applicant and a representative from the abutting property attesting to the satisfactory clean-up; protocols for clean-up of fireworks debris after the show; and research and reporting of the weight of fireworks before they are ignited, the weight of fireworks debris after explosion, and the average amount of debris that is collected). The DOH-CWB does not require a National Pollutant Discharge Elimination System (NPDES) permit or other approvals from our office for the explosion of fireworks in the offshore marine waters, provided that the fireworks debris is cleaned-up and disposed of properly.

**EXHIBIT G**

Mr. Russell Tsuji  
April 1, 2016  
Page 2

04002PDCL.16

If you have any questions, please contact Mr. Darryl Lum of the Engineering Section,  
CWB, at (808) 586-4309.

Sincerely,



STUART YAMADA, P.E., CHIEF  
Environmental Management Division

DCL:dcl

c: Mr. Russell Tsuji [via e-mail [REDACTED]]  
Mr. Calen Miyahara [via e-mail [REDACTED]]  
Mr. Barry Cheung [via e-mail [REDACTED]]



**STATE OF HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**DIVISION OF AQUATIC RESOURCES**  
1151 PUNCHBOWL STREET, ROOM 330  
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SUZANNE D. CASE  
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KEKOA KALUHIWA  
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JEFFREY T. PEARSON  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING

FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

October 1, 2015

**MEMORANDUM**

To: Suzanne Case, Chairperson

From: Alton Miyasaka, Acting Administrator

Subject: Analysis of Ms. Janelle Van Ruiten Opposition Testimony to Board of Land & Natural Resources at its Meeting of September 25, 2015 on Item D.11 Issuance of Right-of-Entry Permit to Hawai'i Explosives and Pyrotechnics, Inc. for Aerial Fireworks Display on October 3, 2015 at the beach fronting Kahala Hotel, Wai'ala'e, Honolulu, O'ahu. Tax Map Key: (1) 3-5-023:seaward of 041.

Ms Van ruiten's concerns appear to generally be within the following categories:

- 1) Effects of fireworks noise on dolphins;
- 2) Effects of fireworks chemical residuals on dolphins; and
- 3) The dolphins being held in enclosed ponds intensify such effects.

There has not been any study that examined the effects of fireworks on dolphins in enclosed facilities that I am aware of. There are, however, opinions from the National Marine Fisheries Service on the effects of fireworks displays on protected species. These published opinions are the most relevant information found on this subject. The opinion was specifically on the effects of commercial fireworks displays in the Monterey Bay National Marine Sanctuary (MBNMS). It should be noted that the studies have not been on dolphins due to the fact that dolphins are known to be in the vicinity of the MBNMS but none were observed during times of fireworks and there has not been a report of dead or injured dolphins so they were not considered further in the document. Seals observed in the area will leave during fireworks but return between 4 to 15 hours after the fireworks end.<sup>3</sup>

There are also extensive studies on related effects of the NASA space program on various wildlife.<sup>2, 6</sup> While the comparison of fireworks to the NASA space program may be several orders of magnitude different, there may be useful insights from the studies on the space program impacts on wildlife.

**EXHIBIT H**

Page 2

#### Noise effects

**The air/water interface reflects most of the sound and there is no risk to dolphins.**

Inquiries with the Hawaii Institute of Marine Biology revealed the following information. Aerial fireworks exploding in air creates a noise of about 140 dB. This sound doesn't transfer as 140 dB in water as the air/water interface reflects most of the sound. Animals at HIMB do not show a startle reflex until an impulse sound exceeding 150 dB is made underwater. (Paul Nachtigall, HIMB)

The highest acoustic noise levels for the Space Shuttle orbiter is 160dB. Safe human noise levels are 115dB according to Dept of Labor safety standards. Protected species around the Kennedy space center includes marine turtles and manatee.<sup>1</sup> While these species are not echo locators, studies do not indicate significant adverse effects from noise levels even at these levels. The information from NOAA also supports the attenuating effects of the air/water interface.

The MBNMS has been conducting pre and post event monitoring of the fireworks for more than eight years and have not recorded any significant injuries or death of protected species. Dolphins have evolved for hearing in water but while they can hear certain sounds, like whistles, from trainers above water, these high frequency sounds are different from the low frequencies created by explosions. Age also plays a role in cetacean hearing as older animals experience hearing loss similar to humans.<sup>5</sup>

The primary impact to wildlife noted in past observation reports by MBNMS staff is the disturbance of marine mammals and seabirds from the light and sound effects of the exploding aerial shells. The loud sound bursts and pressure waves created by the exploding shells appear to cause more wildlife disturbance than the illumination effects. In particular, the percussive aerial salute shells have been observed to elicit a strong flight response in California sea lions and marine birds in the vicinity of the impact area (within 800 yards of the launch site).<sup>3</sup> While this behavioral response occurs, the sea lions and marine birds return to the site so it appears to be a temporary response.

Ms Van Ruiten references existing studies on the noise levels produced by firework events and concludes that the noise levels are harmful to dolphins. Neither her nor the referenced studies take into account the air/water interface attenuation of the noise moving from the air into the water and that this interface reduces the harmful effects of the noise on dolphins. The information provided does not support the contention that the dolphins are close enough to be harmed from the fireworks noise effects.

Ms Van Ruiten also states that the sound from fireworks is comparable to the Navy Sonar but does not provide any information that supports that contention.

Based on the discussion above, the fireworks sound levels are not expected to cause harm to dolphins because they are short bursts, temporary in duration, occur above water, and no information is provided that would support Ms. Van ruiten's contention.

#### Residue effects

**Chemical residue from fireworks does not pose a significant risk to the marine environment.**

Page 3

The largest commercial aerial shells used within the MBNMS are 10-12 inches in diameter and reach a maximum altitude of 1000 feet AGL. The bursting radius of the largest shells is approximately 850 feet. The impact area can extend from 1 to 2 statute miles from the center of the detonation point depending on the size of the shell, height of the explosions, type of explosions, wind direction, atmospheric conditions, and local topography.<sup>3</sup>

Chemical residue is produced in the form of smoke, airborne particulates, fine solids, and slag (spent chemical waste material that drips from the deployment canister/launcher and cools to a solid form). The fallout area for chemical residue is unknown, but is probably similar to that for solid debris. Similar to high level aerial shells, the chemical components of low-level aerial devices produce chemical residue that can migrate to ocean waters as a result of fallout. The point of entry would likely be within a small radius (about 100 yards) of the launch site.

The MBNMS has found only one scientific study directed specifically at the potential impacts of chemical residue from fireworks upon the environment. A 1992 Florida study (DeBusk et al, 1992) indicates that chemical residues (fireworks decomposition products) do result from fireworks displays and can be measured under certain circumstances. The report, prepared for the Walt Disney Corporation in 1992, presented the results of a 10-year study of the impacts of fireworks decomposition products (chemical residue) upon an aquatic environment.

Researchers studied a small lake in Florida subjected to two thousand fireworks shows over a ten-year period to measure key chemical levels in the lake. The report concluded that detectable amounts of barium, strontium, and antimony had increased in the lake but not to levels considered harmful to aquatic biota. The report further suggested that "environmental impacts from fireworks decomposition products typically will be negligible in locations that conduct fireworks displays infrequently". Based on the findings of this report, the lack of any evidence that fireworks displays within the MBNMS have degraded water quality, and the fact that the chemical byproducts of less frequent fireworks displays in an open marine system are even less likely to accumulate to a harmful level than those described in the report, NMFS and the MBNMS believe that chemical residue from fireworks does not pose a significant risk to the marine environment. No negative impacts to water quality have been detected.<sup>3</sup>

Ms Van Ruiten has concerns that the dolphins are held too close to the fireworks display and would be within the dispersion field yet does not provide any information how large that dispersion field is and if the dolphins are within that field. Based on the information from the other studies, the dolphins, at 400 feet from the launch site, are likely not subject to intense fallout at this distance.

She also has concerns about the "toxic waters" that are created when the fireworks residue fall into the water and turn the waters toxic. While there may be legitimate concerns that chemical residues may be falling into the holding pond, there is no information on the level of residues or if those residues are creating a toxicity problem.

One could suppose that the source of the residue is an explosion and only a small portion of that residue would fall within the ponds. The information provided indicates the launch site is about 400 feet from the holding ponds. The primary source would not be the launch site but at the point of explosion in the air. Also, the distance of the ponds from the primary source is not determined but is likely in excess of 400 feet.

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We note that the source explosion disperses the chemicals, the fallout of those chemical would have to float over 400 feet away, and the water in the ponds are exchanged every 6-8 hours. It is difficult to imagine that the water would turn toxic to the dolphins. Dolphins do not respire underwater but would be subject to skin irritations if the water were toxic. Fish, on the other hand, do respire underwater and would be more directly exposed to toxic water than the dolphins. Also, being much smaller, the smaller reef fish would be more sensitive to such toxicity than the larger dolphins. Existing studies do not indicate that fish are being affected by chemical residue.

Enclosed pond effects

**There is not expected to be any difference between the water quality in the ponds and outside in the ocean. Both are not expected to be a risk to the dolphins.**

Ms Van Ruiten has concerns that the dolphins, being trapped in the enclosed ponds, would be subject to concentrated residue compared to the open ocean. Because the pond is drawing water from the nearby ocean, where the residues are also present, this would increase the concentration of residue in the pond.

The suggestion that the pond, with their circulating system, somehow concentrates the residue, would not be supported. The residues are likely suspended in the water column and the exchange of water would mean that whatever concentration exists in the ocean would also exist in the pond water and would be flushed out during the water exchange. Basically, the residue concentrations should be the same in the ocean compared to the pond. There is no reason to believe that the pond would act as a filter to somehow concentration the residuals. As previously explained in the residue effects section, the chemical residues in the water were not found to cause a significant risk to the marine environment. If the residues in the ocean are not expected to cause a significant risk, then similarly, they would not be a risk in the pond.

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List of References

1. Dr. Paul Nachtigall, HIMB; personnel communication
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3. Federal Register. Vol. 77, No. 103, Tuesday, May 29, 2012,pg. 31537; Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Coastal Commercial Fireworks Displays at Monterey Bay National Marine Sanctuary, CA
4. National Oceanic and Atmospheric Administration National Marine Fisheries Service and Monterey Bay National Marine Sanctuary; June, 2006; ENVIRONMENTAL ASSESSMENT OF THE ISSUANCE OF A SMALL TAKE REGULATIONS AND LETTERS OF AUTHORIZATION AND THE ISSUANCE OF NATIONAL MARINE SANCTUARY AUTHORIZATIONS FOR COASTAL COMMERCIAL FIREWORKS DISPLAYS WITHIN THE MONTEREY BAY NATIONAL MARINE SANCTUARY, CALIFORNIA

Other references consulted:

5. NOAA (7/23/2015), DRAFT Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing Underwater Acoustic Threshold Levels for Onset of Permanent and Temporary Threshold Shifts ; Revised version for Second Public Comment Period
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7. Evans (ed) 2013; *PROCEEDINGS OF THE ECS WORKSHOP CHEMICAL POLLUTION AND MARINE MAMMALS*; European Cetacean Society's 25th Annual Conference, Cadiz, Spain, 20th March 2011; ECS SPECIAL PUBLICATION SERIES NO. 55
8. Federal Register. Vol. 77, No. 64, Tuesday, April 3, 2012,pg. 19976; Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Coastal Commercial Fireworks Displays at Monterey Bay National Marine Sanctuary, CA
9. Monterey Bay National Marine Sanctuary, NOAA, 2012; Reporting Required by the USFWS Biological Opinion and the NMFS Incidental Harassment Authorization for Fireworks Displays within Monterey Bay National Marine Sanctuary

**From:** [Bruce Albrecht](#)  
**To:** [Anderson, Rebecca L](#)  
**Cc:** [Tsujii, Russell Y](#)  
**Subject:** [EXTERNAL] Fwd: Sustainability Plan  
**Date:** Monday, April 24, 2023 9:00:34 AM  
**Attachments:** [2023 Sustainability Program.pdf](#)  
[Impact Mitigation Report](#)  
[DOH CWR Letter 2016.pdf](#)  
[150D-154 resp to testimony DAB.doc](#)  
[12932\\_HiPro Hilton Beach Debris Cleanup Memo\\_2023.04.06.pdf](#)

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Aloha Rebecca,

In response to your April 13, 2023 email suggesting a more specific response to the requirements as articulated by the board, we would like to submit the following documents for your review as part of the submission:

1. Our Sustainability Program. It is our opinion that the board members last year asked us to "look forward 5 years, 10 years" and to establish a sustainability plan that would begin to address the impacts of our displays. We are therefore choosing at this time to keep the program goal-oriented, holistic and forward looking and addressing specific mitigation tactics in a separate document.
2. Our Impact Mitigation Report. To specifically address the issues related to the permit application and articulate our impacts, we report on the current status of our operations and discuss prospective mitigation tactics.
3. Supporting Documentation. We are attaching several other documents that directly address the concerns raised and further support our positions.

Additionally, we are preparing 2 other documents:

1. Community Participation efforts. A document that summarizes our community involvement efforts to date and initiatives we are executing.
2. Summary. A statement that summarizes our position and the main points in the documents we have submitted.

We should have these ready to send over to you in the next day or so.

We also wanted to take this opportunity to answer a few of your questions that were not otherwise specifically addressed in the documents submitted. As always, you are welcome to incorporate any information we share with staff into the submission.

**EXHIBIT I**

1. Are you a partner organization in the Malama Hawaii program (cited on page 2) or otherwise actively participating in this initiative? Please note that the participation of hotel sites or other visitor industry members is not relevant to your application.  
We are not a member of the program as we do not typically interface with visitors. However, I will note the Sponsor of the display, the Hilton Corporation, is a member. The mention of the Malama Initiative in the plan was not to imply our membership but rather to make an observation that the MCI industry has an unique and important role to play in effectively delivering the initiative's message.
2. Are you actually using low perchlorate or other improved fireworks products in your displays? What products have these replaced? You stated at the Board meeting on 5/13/2022 that you were not actually using these products at that time due to cost.  
We are already utilizing these products in numerous displays we produce. What I have spoken about on several occasions at previous meetings and in the plan is that at this time, low perchlorate products are limited by both their design and cost restrictions. A large-scale incorporation into the weekly display is currently impractical.  
The research I have conducted to date has further informed me about several key factors regarding perchlorates:
  - Perchlorates (particularly  $KClO_4$ ) are a component of a portion of the pyrotechnic mixtures we use. However, they are not a by-product of the combustion process. Therefore, our shows are not a meaningful contributor of perchlorates into the subject area.
  - Perchlorates are highly soluble in water. If there were significant quantities that could potentially be released, measuring their presence in the ocean would be difficult.
  - Perchlorates are identified by the NIH as an Iodine Uptake Inhibitor in humans, which can pose adverse health impacts to certain populations. The vector of introduction is through ingesting contaminated drinking water over a period of time.
  - Perchlorate contamination sources are primarily at the point of manufacture (e.g., rocket fuel manufacturers). The reduction of the use of perchlorates by industry is a meaningful goal to pursue—and it is being pursued through regulation and remediation of contaminated sites. For our part, we will continue to apply pressure to our manufacturers to reduce and/or eliminate any components that can cause adverse health effects throughout the production and distribution chain.It's also important to recognize that fireworks are not like paper clips and pencils. We can't run down to the local store when we need more or want to try a different brand. The acquisition process begins about one year in advance of receipt, and shipping explosives is a heavily regulated, complex process.
3. What are the applicable laws and regulations that you are following? Is your compliance verified or monitored by any agency or organization?  
Our company complies with all applicable County, State and Federal laws regarding the use of pyrotechnics, and we are regulated by multiple entities. We believe the information provided in the mitigation report in particular should helpfully inform staff regarding compliance issues as they pertain to environmental air and water standards. Regarding emissions, displays are exempt from US EPA clean air standards as an "intermittent

incident". Our displays do not come anywhere close to exceeding these standards at any time anyway since exposure levels are measured durationally. Therefore, routine monitoring of the weekly show would not be particularly constructive. Regarding water standards, staff has previously sought and received guidance from both the DOH Clean Water Branch and DAR that indicated their position on fireworks displays. Since we are not in any danger of exceeding air and water quality standards as a result of our operations, we are not utilizing any third-party monitoring or verification entities at this time, other than the underwater surveys.

4.

You state several times that certain products will be used or certain procedures followed when it is "practicable, feasible, and safe." What are the circumstances in which you are actually using or doing these things?

That term is utilized several times in our "Best Management Practices" policy. We developed this plan from practices we've implemented as part of the ROE permit process with the Land Division as well as regulatory requirements currently in use in other jurisdictions. "Practicable, feasible and safe" is language meant to inform any authorities having jurisdiction that these policies should be evaluated against conditions that would make their compliance unreasonable or unsafe. An example would be waiting to send personnel into the firing range to begin post-display cleanup operations until doing so does not risk injury from live pyrotechnics. I have gone ahead and removed it from the policy in the areas concerning product choices as it isn't particularly relevant to our operations.

5.

What are your actual training procedures and criteria for compliance?

Appendix A is the primary document used to train our field technicians specifically on the Best Practices for display cleanup. Like most commercial entities, we use multiple methodologies to train our employees in safety and compliance matters. These include documents, lectures, discussions, demonstrations and supervision.

6.

Are you merely collecting data on things like emissions and waste at this time or can you show verifiable data of actual improved outcomes in these areas?

Over the previous permit period, our primary goal has been to establish formal monitoring, reporting and training processes that will inform our efforts going forward.

7.

It seems that you've had two dive assessments five years apart. Is this sufficient to show the actual impact of fireworks shows on the ocean?

I believe we have conducted 5 *independent* dive assessments at several locations over the past five years (two of which saw little or no display activity due to the pandemic) that have served to both inform our methodology and provide an independent assessment. We have performed multiple internal surveys within the last permit period. Going forward, we'll be sure to document those. We initiated the March 30th independent assessment in part to specifically respond to former board member Downing's contention at the last meeting that our inert debris accumulates outside of the breakwall.

8.

The Sustainability Plan lists many goals and few to no actual actions taken. What have you done as opposed to merely planned?

Our understanding of the purpose of a sustainability *plan* is to establish a set of goals that inform future efforts to reduce adverse impacts. The establishment of a sustainability plan is the starting point. The key implementation items of the last year have been to research the significant impacts, establish best practices, and implement a monitoring and assessment program that will inform our efforts over the coming decade. Subsequent *reports* shall demonstrate the progress made on achieving those goals.

9.

What is your actual participation in the Hawaiian Legacy Reforestation Initiative cited on page 8?

Our company has a long history of community involvement both within the scope of our operations and independently that is summarized in an attached document. It is true that to date most of these engagements do not have a sustainability motive. We are transitioning to ensure our portfolio includes organizations that promote the environment and sustainability practices. As an example, we are still in the initiation phase with the Legacy Reforestation Project and working on partnering in tree planting activities.

We do believe it is appropriate for the board to also consider the *sponsor's* actions when considering stewardship, sustainability and accountability to the shoreline, neighborhood and state. The Hilton Hawaiian Village has considerable resources to bring to bear when promoting sustainability, and meaningfully contributes to shoreline maintenance in Waikiki as well as to the state at large. This hearing is an opportunity for the board to evaluate their efforts as well as ours.

10.

Have you taken any concrete actions in collaboration with the American Pyrotechnic Association to reduce impacts specifically for your weekly shows at the Hilton Hawaiian Village?

We are not in a position to speak directly on behalf of the Association. The views or policies of the association are the purview of the APA staff. Our *goals* as a member company are to assist other members in adopting sustainable practices and, as a collective, unify, endorse and promote products and methods that are better for the environment across the supply chain. Independently, we are already working directly with other members to promote these ideals, as evidenced by those entities' recent participation in agenda items before the board.

We would hope staff will still find our activities to be "routine in nature, involving negligible impacts beyond that previously existing," and will recommend approval of our application. We believe that the documentation we have provided supports this contention. In terms of our sustainability goals, we have initiated a plan and committed to the retrieval of all inert debris created. We have thoroughly evaluated and openly shared the current impacts of our operations as a whole and made specific commitments to reductions through monitoring and mitigation. We have provided evidence that supports our position that the existing environmental impacts to the subject area are relatively minor in nature and stated that we are an active part of the community that helps maintain Duke Kahanamoku beach beyond our obligations under the permit conditions. We believe our community outreach report will demonstrate our commitment and support to the community and discuss how we are reorienting towards organizations focused on sustainability.

Ultimately, the Board's mission is to weigh community benefit against adverse impacts. As former board member Yuen stated in the May 12, 2022 renewal hearing, the board routinely "approves numerous projects that...impact the environment." We hope the staff recognizes that the benefits to the community that derive from the show outweigh any impacts, and that with Hawaii Explosives & Pyrotechnics, the State has a partner that demonstrates responsible practices while providing entertainment for residents and visitors alike.

Respectfully,

**Bruce Albrecht**  
Operations Manager  
Hawaii Explosives And Pyrotechnics, Inc.



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