



# Environmental Management Plan for Bel Air Project, Eleuthera



# Environmental Management Plan – Bel Air Project

May 2022

## Contents

Executive Summary.....	4
1.0 Introduction .....	5
1.1 Objective of the EMP .....	5
1.2 Scope of the EMP .....	5
1.3 Implementation of the EMP .....	5
Table 1-1: EMP Roles and Responsibilities .....	5
2.0 Project Description .....	7
Table 2-1: Bel Air Project Components .....	7
Map 1: Bel Air Project, Eleuthera .....	8
Figure 2-1: Bel Air Project Concept Plan – Site 1 .....	9
Figure 2-2: Bel Air Project Concept Plan – Site 2 .....	10
3.0 Proposed mitigation measures .....	11
Table 3-1: Summary of Environmental Mitigation Measures.....	11
3.1 Water resources .....	14
3.2 Air quality.....	14
3.3 Noise pollution .....	15
3.4 Landscaping.....	16
Table 3-1: Protected tree species observed at Site 1 .....	16
Table 3-2: Protected tree species observed at Site 2 .....	16
3.5 Avifauna .....	17
Table 3-3: Bird species observed at Site 1 .....	18
Table 3-4: Bird species observed at Site 2 .....	18
3.6 Fuel management.....	19
3.7 Sewage and wastewater management.....	19
3.8 Solid waste management .....	20
3.9 Energy.....	20
3.10 Hazardous materials handling .....	20
3.11 Traffic management.....	21
3.12 Hurricane preparedness plan .....	21
3.13 Emergency response plan.....	24
3.14 Human health and safety .....	24

Table 3-5: Summary of human health and safety mitigation measures .....	24
3.15 Worker health and safety .....	26
3.16 Neighbouring businesses and communities.....	28
3.17 Public awareness and communication.....	28
Figure 3-1: Signage for Construction Site.....	29
3.18 Environmental and social monitoring.....	30
4.0 Conclusions .....	31
References .....	32
Appendix 1: Construction Schedule.....	33
Appendix 2: Petroleum Spill Response Plan.....	34
Appendix 3: Hazardous Material Management Plan.....	37
Appendix 4: Emergency Response Plan.....	40
Appendix 5: Training Forms .....	45
Appendix 6: Contractor’s Report of Complaints Received.....	48
Appendix 7: Template for Inspection Form .....	49

## **ENVIRONMENTAL MANAGEMENT PLAN FOR THE BEL AIR PROJECT, ELEUTHERA, THE BAHAMAS**

### **Executive Summary**

The Environmental Management Plan (EMP) for the Bel Air Project should be used in tandem with the Environmental Impact Assessment (EIA) for the project (January 2022). The EMP is to be utilized by the project team and contractors responsible for the project's implementation.

The Bel Air Project involves the construction of a resort and residential development near to Gregory Town on the island of Eleuthera in The Bahamas. The project is being executed by Bel Air Resort and Residences.

The proposed development consists of two parcels of land – a 50.73-acre parcel approximately 0.5 miles northwest of Gregory Town and a 5.41-acre parcel approximately 3.5 miles northwest of Gregory Town. The development will consist of

- A resort consisting of 70 cottages with a restaurant, bar, pool, gym and spa
- A small swimming access platform
- 44 residential houses
- A beach club with a bar bistro
- 20 – 30 cottages associated with the resort beach club

The development also includes green spaces, roads with verges and infrastructure.

There are no marinas or golf courses associated with the development.

Employment of appropriate construction methodologies can result in execution of the project in a sustainable manner. Utilizing the mitigation measures detailed in the EMP will eliminate or minimize any negative environmental impacts resulting from project activities.

## 1.0 Introduction

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## 1.1 Objective of the EMP

The objective of the Environmental Management Plan (EMP) is two-fold:

1. To detail the mitigation measures identified through the EIA process to minimize/eliminate those potential negative environmental and social impacts of the proposed project; and
2. To ensure the project utilizes best environmental practices and proceeds in an environmentally sustainable manner.

## 1.2 Scope of the EMP

The EMP involves description of environmental and social mitigation measures inclusive of a Hurricane Preparedness Plan.

## 1.3 Implementation of the EMP

Specific roles and responsibilities related to implementation of the EMP are outlined in Table 1-1.

**Table 1-1: EMP Roles and Responsibilities**

Name	Duties
Position: <b>Project Manager – Davon Gibson Tel: 470-8185</b>	<ul style="list-style-type: none"><li>• Coordinates EMP implementation</li><li>• Ensures health and safety protocols are followed by staff on site.</li><li>• Consults with outside advisers (e.g. Government, legal or medical)</li><li>• Investigates incidents, injuries, accidents and spills</li><li>• Completes incident, injury, accident and spill records (using appropriate forms)</li><li>• Ensures injured employees are given planned rehabilitation</li><li>• Maintains all reports and registries (including incident, injury, accident and spill records)</li></ul>

	<ul style="list-style-type: none"> <li>• Chairs weekly staff meetings</li> <li>• Ensures all new employees are inducted and managed</li> <li>• Selects contractors</li> <li>• Ensures contractors are inducted and managed</li> </ul>
<b>Position:</b> <b>Environmental Monitor – TBD</b>	<ul style="list-style-type: none"> <li>• Provides or sources specialist advice in EMP matters</li> <li>• Trains supervisors/line managers on EMP matters</li> <li>• Trains employees in induction on EMP matters and safe work procedures</li> <li>• Reports serious injuries to relevant Government agency</li> <li>• Reports serious environmental incidences to relevant Government agency</li> <li>• Ensures that monthly inspections are carried out</li> <li>• Reviews incident, injury, accident and spill records (using appropriate forms)</li> </ul>
<b>Position:</b> <b>Site Superintendent</b> – <b>Philippa Johnson</b> <b>Tel: 823-4394</b>	<ul style="list-style-type: none"> <li>• Supervises employees to ensure all EMP requirements are met and HSE hazards are managed</li> <li>• Supervises contractors</li> <li>• Ensures contractors are issued with information about on-site safety and environmental management objectives and procedures</li> <li>• Ensures visitors have read information about visitor safety</li> <li>• Supervises visitors</li> </ul>

## 2.0 Project Description

The Bel Air Project is located on the island of Eleuthera (see Map 1). Table 2-1 outlines the components of the proposed development.

**Table 2-1: Bel Air Project Components**

<b>Component</b>	<b>Size (in acres)</b>
<b>Site 1</b>	
Resort with 70 cottages plus restaurant, bar, pool, gym, spa and small dock	25
44 residential houses	25
<b>Site 2</b>	
Beach club with bar bistro plus 20 – 30 cottages	5.41

The project concept plan is shown in Figures 2-1 (Site 1) and 2-2 (site 2)

Once approved, the timeline for construction is as follows:

- Roads – 3 to 4 months;
- Resort with amenities and 15 cottages – 10 months.
- 15 resort cottages will be added each year until complete build out.
- The residential houses will be constructed as the lots are sold.

A copy of the construction schedule for the first 18 months of the project is provided at Appendix 1.

The resort cottages will range in size from 500 square feet to 750 square feet. Conceptual drawings of the resort cottages are provided in Figures 2-3 and 2-4.

The residential homes will range in size from 2,450 square feet to 5,000 square feet.

Map 1: Bel Air Project, Eleuthera





**Figure 2-1: Bel Air Project Concept Plan – Site 1**



- 1.- Suite with private pool (15)
- 2.- Suite 1 Bedroom (20)
- 3.- Suite 1 Bedroom - Bora Bora model (112)
- 4.- Family 2 Bedroom (23)
- 5.- Reception / Lounge Bar / Restaurant / Pool
- 6.- Yoga pavillion
- 7.- Spa: (BelAir Wellness Center)
  - A.- Spa reception
  - B.- Massage Cabanas
  - C.- Fitness center
- 8.- PickleBall court x 2 + Tennis court x 2
- 9.- Parking area
- 10.- Security / Reception
- 11.- Water plant - Generators - Storage
- 12.- Employees residences
- 13.- Residential lots

Figure 2-2: Bel Air Project Concept Plan – Site 2



### 3.0 Proposed mitigation measures

Table 3-1 below summarizes the mitigation measures that will be utilized to minimize or eliminate any negative environmental impacts from the project.

**Table 3-1: Summary of Environmental Mitigation Measures**

	<b>Mitigation Measures</b>
Materials	<p>Any toxic or hazardous chemicals to be utilized on site can be done so according to Material Safety Data Sheet (MSDS) guidance and safety protocols can be established by project management.</p> <p>Construction materials containing hazardous substances, such as paint, will be safely removed and properly disposed of to prevent any risks to human health.</p>
Air quality and dust	<p>Impairment to air quality can be reduced when no illegal construction activities occur during this project.</p> <p>Construction equipment will be properly maintained to ensure they do not impair air quality. Construction methodologies and best practices will be employed to minimize generation of quantities of dust that can impair air quality including watering of the site.</p>
Waste management	<p>All waste will be properly disposed of according to regulations and standards of the Department of Environmental Health Services (DEHS) and the Water and Sewerage Corporation (WSC).</p> <p>Waste management will need to include proper disposal of any hazardous waste from construction activities.</p>
Landscape and visual	<p>An effort will be made to minimize clearing of land to the footprint of any planned new buildings.</p> <p>Landscaping of the development will utilize native and endemic plants and trees. No invasive plant species will be utilized in landscaping.</p> <p>Waste will be properly disposed of in a timely manner.</p>
Water resources	<p>Chemical and fuel management of the site will ensure that groundwater and freshwater resources are not negatively impacted. Spill response protocols will be established for effectively dealing with spills in the event of an accident to minimize any pollution of water resources.</p> <p>Hazardous waste from construction will be properly disposed of.</p> <p>Potable or fresh water will be provided by the Water and Sewerage Corporation so there will not need to be extraction of groundwater resources.</p>

	<b>Mitigation Measures</b>
Ecology	<p>Efforts can be made to minimize negative impacts to all remaining vegetation by preserving as much of it as possible during land clearing for construction. This can be achieved through selective clearing of the site rather than bulldozing the entire area.</p> <p>Native trees and plants will be maintained wherever possible, especially where they are clustered so that they can continue to function as wildlife corridors.</p> <p>Native and endemic plants will be utilized in landscaping.</p>
Avifauna	<p>While noise levels during construction may deter birds from the area, it is expected that once construction is complete that birds will return. There are sufficient vegetated areas neighbouring the project site that can be utilized by birds during active construction.</p> <p>Every effort will be made to maintain protected trees on the project site to be utilized by birds when construction is not occurring. Protected trees will be marked prior to construction so they can be retained, where feasible.</p> <p>Staff will be advised on the importance of not interfering with or harming bird species which are all protected under Bahamian law.</p>
Noise and vibration	<p>Construction activities will be for a limited time period to minimize disturbance to birds and other animals at the project site. Once construction is completed in as short a timeframe as possible, the animals should return to habitats they normally utilize.</p> <p>Construction workers will wear appropriate PPE (i.e. earplugs or ear muffs). Nearby residents are not expected to be exposed to high noise levels as there will be no work occurring during the evening and night. Nearby businesses are a sufficient distance away to reduce their exposure to high noise levels.</p>
Traffic and transport	<p>All workers utilizing vehicles and equipment will have adequate training and skills in their proper and safe handling. Equipment to be utilized for this project moving from other sites will be inspected and cleaned, as necessary, to ensure they do not introduce invasive plant material, such as seeds.</p> <p>Flagmen will be utilized to safely direct traffic if there is a need to move heavy equipment or construction materials on Queen's Highway. Such movements will be avoided during</p>

	<b>Mitigation Measures</b>
	peak traffic house, i.e. 7:30 am – 9:00 am and 3:00 pm to 5:00 pm.
Contaminated land	<p>Any toxic or hazardous chemicals to be utilized on site will be done so according to Material Safety Data Sheet guidance and safety protocols as established by project management. Staff will be trained in spill response measures to effectively handle such incidents.</p> <p>Hazardous waste will be safely handled and properly disposed of.</p>
Occupational health and safety	<p>Workers will be provided with appropriate protective personal equipment (PPE) for the assigned tasks. All workers will receive training in proper handling of equipment and materials as a part of their orientation before being admitted to the site during construction and before starting work on site. There will be regular reinforcement of occupational health and safety procedures during weekly meetings. Information on health and safety procedures (e.g. Material Safety Data Sheets) will be accessible to staff during working hours. At least one staff member will be assigned to ensuring health and safety procedures are being followed during demolition activities.</p> <p>Workers will adhere to COVID-19 safety protocols inclusive of wearing masks and social distancing.</p>
Impacts on neighbouring communities	<p>Regular communication with neighbouring businesses and communities will occur so they are informed of any potential disruptions to traffic and can plan accordingly.</p> <p>They will also be advised when noise levels may be elevated so they can choose to leave the area or wear appropriate protective equipment, such as noise-cancelling headphones. Elevated noise levels during construction will be limited to the hours of 10 am to 5 pm so as not to disturb residents during sleeping hours.</p> <p>The site will be managed following best management practices to reduce or eliminate impacts related to air pollution as well as land and groundwater contamination, so there are no long-term health impacts on communities.</p> <p>A mechanism for neighbouring residents to contact project management will be established to ensure communication is facilitated.</p>

In addition to the mitigation measures, the plan also details other aspects of the project, such as handling of hazardous materials, hurricane preparedness plan, and emergency response plan.

### **3.1 Water resources**

In an effort to minimize the risk to the water quality, chemical, hazardous material and fuel management protocols will be adhered to, ensuring that groundwater resources are not negatively impacted. Spill response and emergency response plans will be followed to effectively deal with any spills if there is an accident.

All hazardous waste will be properly disposed of.

All potable or fresh water will be provided to the project by the Water and Sewerage Corporation. Therefore, there will be no extraction of groundwater resources for the project.

### **3.2 Air quality**

One source of air pollution will be airborne dust that will likely get generated during construction. Dust will be kept down as needed, including during non-working hours. The Contractor will utilize a water truck to water the site during construction, thereby reducing airborne dust particles. To minimize the run-off of water, the water supply will be used only when necessary.

Soils at the site, haul roads and other areas disturbed by construction and materials stockpiled for the project will be treated by water spraying to control dust.

The watering schedule will be determined by an evaluation of the air monitoring and meteorological data, site and soil conditions, and site activities. The following measures will be taken to mitigate for any potential air pollution from airborne dust during construction:

1. Watering - Water all active construction areas at least once daily and more often during dry and/or windy periods. Active construction areas in close proximity to residences will be kept damp, as necessary.
2. Wind screen – A wind screen will be applied to the perimeter fencing around to project site to aid in the overall dust control.
3. Trucks - Cover all hauling trucks or maintain at least 2 feet of freeboard.
4. Pavement - Apply water at least twice daily to all unpaved access roads, parking areas, and staging areas.
5. Sweeping - Wet mopping or wet sweeping will be used instead of dry sweeping. All paved access roads, parking areas, and staging areas will be swept daily. Adjacent streets will be swept daily if visible soil material is deposited onto the road surfaces.
6. Stockpile of dusty materials – Stockpiles of sand, rock and excavated material shall be sprayed with water once daily to keep the surface wet.
7. Loading, unloading or transfer of dusty material – All dusty materials will be sprayed with water as necessary prior to loading, unloading and transfer operation to prevent dust from becoming airborne. The exception is cases where the moisture content of dusty materials is a matter of concern. Traffic speeds will be limited on any unpaved roads to 15 mph.

8. Excavation or earthmoving – The working areas of any excavation or earthmoving operation shall be sprayed with water as necessary such as before, during and immediately after the operation to mitigate the generation of airborne dust.
9. Emissions from construction equipment – All construction equipment shall undergo regular maintenance as per manufacturer’s recommendations so that any emissions due to malfunctioning or operational inefficiencies are minimized.
10. Suspension of work - Excavation and grading activity will be suspended when winds (instantaneous gusts) exceed 25 mph.
11. General site tidiness – The site shall be cleaned and moistened frequently to minimize fugitive dust emissions.

Dust is not expected to be generated during operation as site construction will be complete and any open areas will either be vegetated through landscaping or paved.

Other mitigation measures that will be taken for ensuring good air quality include:

- Integrate green building technologies into the proposed project where possible.
- Ensure routine maintenance of construction equipment and vehicles as per manufacturer's recommendations.
- Ensure routine maintenance of operation equipment and vehicles as per manufacturer’s recommendations.

### **3.3 Noise pollution**

Noise pollution sources at the site during construction will include heavy equipment being used during construction as well as increased traffic to and from the site. Any noise generated is expected to be intermittent and temporary. Noise generation is expected to be limited to daytime hours (i.e. 7 am to 5 pm) to minimize disturbance to neighbouring businesses and residents.

The following measures will be taken to mitigate for any potential noise pollution during construction and operation:

1. Limiting the amount of noise-generating equipment to be used.
2. Limiting the amount of noise-generating equipment to be used simultaneously.
3. Using silenced or relative Quality Powered Mechanical Equipment (PME).
4. Enclosing noise-generating equipment with acoustic enclosures, if necessary.
5. Erecting temporary and movable noise barriers next to noise sources to shield down the noise emission, if necessary.
6. Positioning noise-generating equipment or activities away from sensitive receivers and at locations where existing structures on site can act as noise shields.
7. Switching off noise-generating equipment when not in use.
8. Ensuring the proper maintenance of noise-generating equipment.

### 3.4 Landscaping

Any protected trees on the site cannot be removed without a permit from the Forestry Department. Tables 3-1 and 3-2 below lists those protected trees that are found on Sites 1 and 2 respectively for the project.

**Table 3-1: Protected tree species observed at Site 1**

<b>Common Name</b>	<b>Scientific name</b>
<b>Endemic, Endangered or Threatened Species</b>	
Bahama Century Plant	<i>Agave bahamana</i>
Turtle Grass	<i>Thalassia testudinum</i> (Marine)
<b>Cultural or Historical and Economic Trees</b>	
Gum Elemi, Gumbo Limbo	<i>Bursera simaruba</i>
Cascarilla, Eleuthera Bark	<i>Croton eluteria</i>
Silver Top Palm, Silver Thatch Palm	<i>Coccothrinax argentata</i>
Buttonwood	<i>Conocarpus erectus</i>
Bahama Brasiletto	<i>Caesalpinia bahamensis</i>
Small-leaved Blolly	<i>Guapira discolor</i>
Beefwood	<i>Guapira obtusata</i>
Joe Bush, Iron Wood	<i>Jacquinia keyensis</i>
Thatch Palm, Buffalo Top Palm	<i>Leucothrinax morrisii</i>
Horse Flesh	<i>Lysiloma sabicu</i>
Wild Tamarind	<i>Lysiloma latisiliquum</i>
Mahogany	<i>Swietenia mahagoni</i>
Stinking Pea, Bahamas Senna	<i>Senna chapmanii</i>
No known common name	<i>Thrinax radiata</i>

**Table 3-2: Protected tree species observed at Site 2**

<b>Common Name</b>	<b>Scientific name</b>
<b>Endemic, Endangered or Threatened Species</b>	
Bahama Century Plant	<i>Agave bahamana</i>
Bamboo, Manilla	<i>Agave cacozele</i>
<b>Cultural or Historical and Economic Trees</b>	
Silver Top Palm, Silver Thatch Palm	<i>Coccothrinax argentata</i>
Buttonwood	<i>Conocarpus erectus</i>
Bahama Hibiscus	<i>Hibiscus clypeatus</i>
Railroad Vine, Goats Foot, Bay Hop, Bay Winders	<i>Ipomoea pes-caprae</i>



<b>Common Name</b>	<b><i>Scientific name</i></b>
Black Ebony	<i>Pera bumelifolia</i>
Sabal Palm	<i>Sabal palmetto</i>
No known common name	<i>Thrinax radiata</i>

Construction staff education will include identification of protected trees that should not be touched as well as invasive plants and trees that should be removed. The Environmental Monitor will assist with tagging of all protected trees and trees will be handled as per guidance of the Forestry Department.

Any invasive plants and trees on the site will be removed. Invasive species found on the site were:

- Australian Pine [also known as Casuarina] (*Casuarina equisetifolia*)
- Hawaiian Scaevola (*Scaevola taccada*)

Equipment and vehicles being moved from one site to another have the potential to transport invasive plant species. All equipment and vehicles should be inspected and any plant material (e.g. seeds, leaves, flowers) removed before they arrive at the project site.

Maintaining native plant species on the property is a measure to increase food resource availability for wildlife and support local habitat conservation initiatives and organizations, on the Island of Eleuthera and nationwide. Wherever landscaping is planned, native species will be utilized. The goal is to maintain the vegetated corridors between the project sites and green areas outside the project site so that smaller animals (e.g. birds and lizards) can traverse them.

Landscaping of the developed property with native species will aid in mitigating any biodiversity loss by replacing key species of trees that support wildlife use. There are green areas adjacent to the project sites that bird species can also utilize for nesting, roosting and foraging.

In addition to supporting native biodiversity, planting native trees can mitigate effects on the visible appearance of the landscape, noise pollution and carbon sequestration or GHG production. Landscaping on the property during development should include native tree species with high quality food value, such as Gum Elemi (*Bursera simarouba*), which has value for a variety of bird and animal species. Birds will utilize these trees for resting, feeding and possibly nesting.

In an effort to improve climate resilience, the project will maintain setbacks from the neighbouring creek and wetland system as well as from the coastal high water mark as indicated by DEPP. Stormwater management features, such as vegetated swales, will also be incorporated into project design.

### **3.5 Avifauna**

Every effort will be made to maintain protected trees on the project site and plant native plant species to be utilized by birds. Protected trees will be marked prior to construction so they can be avoided. Providing habitat and food tree species for native wildlife will support endangered and rare birds.

Bird species documented on the project Sites 1 and 2 or known to frequent are provided in Tables 3-3 and 3-4.

**Table 3-3: Bird species observed at Site 1**

<b>Common Name</b>	<b>Scientific Name</b>
American Kestrel	<i>Falco sparverius</i>
Palm Warbler	<i>Setophaga palmarum</i>
Grey Catbird	<i>Dumetella carolinensis</i>
Bahama Woodstar	<i>Nesophlox evelynae</i>
Thick-billed Vireo	<i>Vireo crassirostris</i>
Northern Mockingbird	<i>Mimus polyglottos</i>
Prairie Warbler	<i>Setophaga discolor</i>
Black and White Warbler	<i>Mniotilta varia</i>
Greater Antillean Bullfinch	<i>Melopyrrha violacea</i>
Bananquit	<i>Coereba flaveola</i>
White-crowned Pigeon	<i>Patagioenas leucocephala</i>
American Redstart	<i>Setophaga ruticilla</i>

**Table 3-4: Bird species observed at Site 2**

<b>Common Name</b>	<b>Scientific Name</b>
American Kestrel	<i>Falco sparverius</i>
Palm Warbler	<i>Setophaga palmarum</i>
Common Ground Dove	<i>Columbina passerina</i>
Bahama Woodstar	<i>Nesophlox evelynae</i>
Thick-billed Vireo	<i>Vireo crassirostris</i>
Osprey	<i>Pandion haliaetus</i>
Belted Kingfisher	<i>Megaceryle alcyon</i>
Cuban Pewee	<i>Contopus caribaeus</i>
Smooth-billed Ani	<i>Crotophaga ani</i>
Western Spindalis	<i>Spindalis zena</i>
Black and White Warbler	<i>Mniotilta varia</i>
Greater Antillean Bullfinch	<i>Melopyrrha violacea</i>

All endemic and native bird species are protected under the Wild Birds Act of The Bahamas. No staff should harm or interfere with bird species observed on the site.

If nests, bird eggs or injured birds are found on the site, staff should not remove them. They should contact the Bahamas National Trust's Leon Levy Native Plant Preserve in Governor's Harbour at **332-3831** for guidance in handling and transfer of birds, their eggs and nests, if necessary. BNT can also provide guidance on the removal of snakes, which should also not be harmed or interfered with by staff on site.

### **3.6 Fuel management**

Fueling on site can result in spills of gasoline, diesel and oil, which are common sources of groundwater pollution and are costly to clean up. Mitigation measures for fueling include:

1. Establishment of a designated fuel dispensation area on the site away from any known groundwater resources.
2. Topping off practices when fueling should be discouraged. Tanks should not be filled beyond 95%. Impervious fireproof containment trays should be used when filling small cans to contain any possible spills. Easy to read signs should be posted at the fueling area to explain proper fueling procedures.
3. To prevent overflow spills, automatic back pressure shut-off nozzles should be installed on the fuel pump discharge hoses. Fuel nozzle triggers that are used to hold the nozzle open without being held should be removed if automatic shut-offs are not available.
4. Drain pans should always be used during fueling in the event of a fuel spill or leak.
5. The fueling system should be briefly inspected daily and thoroughly inspected once a week by fuel attendant(s) for leaks and overall soundness.
6. All spent fluids will be collected for either storage or recycling.
7. A petroleum spill response plan for the project site is provided at Appendix 2. The plan provides guidance in the event of a spill to ensure proper petroleum containment. Components of the spill response plan include who to notify when a spill occurs, immediate spill response actions, a contact list for response communications, and a response chain-of-command on the site.
8. Easy-to-read signs should be posted at the fueling station informing users what to do to contain fuel and oil in the event of a spill. Signs should also include a “No Smoking” sign to avoid risk of explosion.
9. There will be a clearly identified spill response container with spill response equipment near the fuel delivery area. This container will house appropriate containment and control materials, such as absorbent pads, a fire extinguisher, a copy of the Spill Response Plan, and the emergency contact list. This container should be clearly marked and easily accessible in order to quickly react to any potential spills. An inventory of equipment will be taken monthly or after use and a list of items needing replacement will be submitted for purchasing immediately. Used absorbent materials should be disposed of offsite by a licensed company.
10. All appropriate staff should be trained in proper fueling, proper maintenance techniques, and the implementation of the spill response plan at least bi-annually.

Any waste oil will be collected in a dedicated oil container and delivered offsite by a local waste management company for disposal and recycling.

### **3.7 Sewage and wastewater management**

Sewage generated by portable toilets during construction should be pumped away and disposed of at a DEHS-approved facility by a specialist subcontractor. The ratio of toilets to workers should be 1:5, i.e. one portable toilet for every 5 workers on site. The toilets will be changed out twice weekly on Wednesday and Friday/Saturday to maintain sanitary conditions on site. At least, two (2) water-dispensing stations and one (1) station with alcohol-based hand sanitizer will be provided for workers.

The Water and Sewerage Corporation (WSC) may outline methodologies for disposal of wastewater generated during construction. There will be no drainage of sewage or wastewater on land comprising or near the project site at any time. All activities related to sewage and wastewater management during construction and operation will be subject to approval of respective Government agencies, including the WSC and the Department of Environmental Services (DEHS).

### **3.8 Solid waste management**

Covered dumpsters will be used for construction waste. Covered waste receptacles will be strategically placed around the construction site to be utilized by construction staff to dispose of litter (e.g. food containers). Prohibited waste that should not be placed in the waste receptacles or the construction waste dumpsters include waste oil and used absorbent materials; these should be disposed of separately as this type of waste cannot go to the dumps on Eleuthera. In order to maintain a clean site, there should be morning and afternoon “walk-throughs” of the project area by designated workers to pick up any stray litter.

A licensed local waste management company will dispose of solid waste from the site during construction and operation in accordance with DEHS standards and only with their approval. Disposal of solid waste from construction and operation will be done at a licensed facility in compliance with DEHS requirements.

A registry of all waste streams which are removed from the site will be kept on site and made available to Government officers when requested during inspections. Monthly monitoring reports submitted to DEPP should also contain a copy of waste registry for that week.

### **3.9 Energy**

BPL will provide additional infrastructure to provide power to the project or permission will be granted for using other sources of electricity, such as solar. At a minimum, solar panels will be installed on the roofs of all the cottages as a part of the resort to run all air-conditioning units. Individual homeowners within the residential components of the project will also be encouraged to utilize solar panels to provide electricity to their homes, at least in part. Buildings and homes will be insulated to reduce electricity consumption from more traditional energy sources.

### **3.10 Hazardous materials handling**

All hazardous materials brought on site should be accompanied by material safety data sheets (MSDS). These sheets detail proper handling, storage and disposal techniques for use of hazardous materials as well as proper treatment if persons are exposed to the materials. All MSDS should be accessible to staff who will be in contact with or using the hazardous materials, so they understand how to safely use them.

A small storage area will be designated at the site in the event that any waste oil or used spill clean-up materials need to be stored before being properly disposed of. This storage area should have a disposal container that is covered, made of inflammable material, sealed to prevent leaking, and positioned on an impervious surface as far from any water as possible. Appropriate spill containment and clean-up equipment should be easily accessible near waste oil storage area.

Construction staff should be trained regarding proper handling, storage, transfer, and disposal procedures for hazardous waste materials, inclusive of waste oil and used spill clean-up materials.

Disposal of all hazardous waste generated by the project will occur offsite by a licensed contractor at a licensed facility as per DEHS requirements. A Hazardous Material Management Plan is provided at Appendix 3.

### **3.11 Traffic management**

Development of a traffic management plan to be implemented for the duration of construction will reduce impact to traffic. The plan should contain direction for the use of proper speed in and around residential areas, near schools, and in locations with known pedestrian traffic (e.g. in Gregory Town settlement).

Appropriate signage should be put in place at the project site and along Queen's Highway alerting motorists of construction and the potential for delays. Advertisements and notifications should be sent out in advance to surrounding communities and businesses if significant delays are planned.

Public transportation is not available on the island of Eleuthera and as such, bus transportation for workers who live in surrounding communities should be considered as a means to reduce the impact of increased vehicular use in communities. It would also reduce the need for employee parking on site and lower non-construction vehicular traffic in the immediate area.

Periodic vehicle servicing and inspections to ensure proper functioning may reduce exhaust emissions.

Traffic management on the site will include:

1. Designated haul routes for commercial vehicles.
2. Limiting construction traffic times (especially of heavy equipment) to low-traffic periods of the day to minimize delays and accidents.
3. Maintenance of low speeds for driving on site.
4. Traffic control on site and on the road directly in front of the project site during times of heavy commercial vehicle and/or heavy equipment traffic to prevent accidents with private vehicles.
5. Wheel wash or vehicle wash down area near/at site exit.
6. Regular cleaning of roads.
7. Securing the site (e.g. fencing) to prevent pedestrians, particularly children, from traversing the site.
8. Ensuring all workers wear high visibility vests so that drivers of commercial vehicles and heavy equipment can see them.
9. Training all workers in traffic hazards on site in an effort to avoid injury and loss of life.

### **3.12 Hurricane preparedness plan**

The purpose of the Hurricane Preparedness and Response Plan is to identify the actions that will be taken to reduce or eliminate long-term risk to people and property, and to respond to natural disasters in the form of tropical storms, hurricanes, and coastal flooding. Project management should ensure that all staff are knowledgeable and equipped to execute the Hurricane Preparedness and Response Plan when necessary. Preparation for hurricanes and tropical storms must be an ongoing activity at the site, and staff should be informed well in advance of their responsibility during a storm.

Key preparation activities are outlined below.

1. **GENERATORS:** Check all generators for proper operation (change oil, test batteries, start and run, run under load, ensure plug-in receptacles in good working order).
2. **EMPLOYEE CONTACT:** Update Employee Contact List. Ensure all staff members have a copy and understand the procedures for calling in or reporting to work post-hurricane.
3. **FACILITY INSPECTION:** The designated Manager conducts complete site and building/facilities inspection no less than weekly to ensure site is free from clutter. The designated Manager should initiate and direct the removal of all excess supplies and equipment from the site.
4. **HURRICANE PLAN:** The plan should be printed and/or emailed to all staff. The designated Manager will ensure that all staff are familiar with the plan and its preparation and response procedures as well as the location of equipment and supplies necessary for preparation and response.
5. **SUPPLIES:** The designated Manager should ensure adequate supplies of tools and any equipment needed to deal with preparation and recovery are on-hand at the site (batteries/radios, gas/diesel, rain gear, bottled water).
6. **VEHICLES:** All vehicles (including trucks and cars) should be in good working order and have fuel topped off and/or batteries charged. Staff should understand the procedures for relocating/securing any portable equipment to designated safe areas.

## **GENERAL**

### *A. Objective:*

To provide clear and concise procedures for staff to follow in the event of a hurricane or tropical storm. To manage, maintain security, and control the operation of site, building and/or facilities during an announced emergency situation.

### *B. Background:*

The project site may not be a safe location during a hurricane or tropical storm, depending on the direction and strength of the storm. Vehicles, portable equipment and supplies will be relocated well in advance to safer locations in order to protect them and neighbouring businesses and residents from damage of flying debris from construction and operation activities at the project site. The following procedures will enhance the project's ability to protect the lives and property of staff and neighbouring businesses and homes, and safeguard facilities.

### *C. Preparation:*

Every designated manager should have an individual Hurricane Plan, designed specifically for their area of responsibility. This Plan should include the location of alternate storage for their vehicles and equipment; a

checklist of key procedures to be followed to prepare for a storm; and necessary gear and supplies to help secure their area of responsibility on short notice.

The management team should designate an Operating Post for the coordination of operations, communication, and emergency response. All staff shall be familiar with the emergency procedures.

## **HURRICANE ACTION PLAN**

### *D. Hurricane Watch*

- 1) All staff are required to know by definition the status of a weather emergency as differentiated between a Hurricane Advisory, Watch, Warning, etc.
- 2) All staff will be prepared to respond when called upon to report to work. Proper planning will ensure that personnel needs are met, while still meeting the need to respond to an emergency situation at the project site.
- 3) At designated staging areas, all emergency equipment and supplies (i.e. pumps, generators, vehicles, etc.) are to be at full operational capacity and ready to move. Batteries are fully charged; rain gear and other safety equipment stocked and in full working order.
- 4) At the Operating Post, the information cycle is started – the designated Manager shall contact the relevant local hurricane preparedness agencies (e.g. NEMA) and verify contact information. The Operating Post will communicate with staff – directly, by voice announcement, by posted notice, by phone, and/or by passing the word, the proposed order of an evacuation plan will be announced.
- 5) All trash and debris will be removed from containers to prepare those containers for receiving additional trash. Parking and common areas should be checked for removal of unnecessary equipment and materials.
- 6) Notification is made to other personnel/contractors if there is need to relocate any vehicles, equipment, or property. Employees are designated at the facility to handle the safeguarding, evacuation, or relocation of the above.
- 7) Commence securing buildings, vehicles and other property. Only basic facility accesses are left open.
- 8) Staff should report essential information to the designated Manager and receive instruction as to communications, controls, phone numbers, etc.
- 9) The designated Manager should rotate staff home to address personal needs. Some staff members will be required to report back to work, scheduled in selected groups at selected locations, for continuing emergency operations. It is imperative that staff report to work as instructed.

*E. Hurricane Warning*

- 1) All off-duty staff must respond immediately and report to work if requested to do so. Personal needs should now have been met and all available personnel will be meeting the need for necessary emergency work at the site.
- 2) Emergency equipment and supplies are positioned to be mobilized for fast use. Access roads are cleared of movable objects, garbage, and debris. Loose items that cannot be removed are secured, tied down, etc.
- 3) Keep vehicle traffic flowing in a smooth and orderly fashion.
- 4) Complete securing building and facilities; finish safeguarding property from flood areas; secure areas once completed.

*F. Facility Evacuation*

- 1) Upon local directive, building and facilities are secured and evacuated. Off-duty staff are dismissed, with instruction to establish contact with the designated Manager as soon as possible after the storm for instruction. The building and facilities will be shut down for the duration of the emergency. Begin planning for “after the storm” action.

**3.13 Emergency response plan**

This Plan is designed to address the most likely emergencies which will occur on site due to activities and material utilization and is detailed in Appendix 4.

**3.14 Human health and safety**

A summary of mitigation measures will be employed for human health and safety are outlined in Table 3-5.

**Table 3-5: Summary of human health and safety mitigation measures**

<b>Health Determinant</b>	<b>Mitigation Measures</b>
Air Quality	<ul style="list-style-type: none"><li>• Maintain a record of any complaints related to odour or emissions, and respond to complaints by taking mitigative action, if warranted.</li><li>• Integrate green building technologies into the proposed project where possible.</li><li>• Implement dust control measures, such as using canvas to cover loads of construction materials, and applying water spray to tires, dirt roads, and other areas.</li><li>• Ensure routine maintenance of construction equipment/vehicles.</li><li>• Ensure routine maintenance of operation equipment.</li><li>• Prepare an emergency response and preparedness plan and public awareness program for workers and the local community in the event of a spill, fire, and/or explosion.</li></ul>



Health Determinant	Mitigation Measures
Noise	<ul style="list-style-type: none"> <li>• Construction and operation workers should be provided a health and safety plan and applicable PPE including hearing protection.</li> <li>• The dates and times of increased noise levels should be communicated with the public during the construction phase.</li> <li>• Ensure routine maintenance of equipment and vehicles.</li> <li>• Implement noise mitigation measures that includes noise abatement and control measures as necessary during construction and operation phases.</li> </ul>
Water Quality	<ul style="list-style-type: none"> <li>• Site construction and operation workers should follow a health and safety plan and wear appropriate PPE.</li> <li>• Routine monitoring and maintenance of site infrastructure and immediate clean-up of any spills or leaks as per the emergency response plan.</li> <li>• Prepare an emergency response plan and preparedness awareness program for workers and the local community in the event of a spill, fire, and/or explosion.</li> </ul>
Soil Quality	<ul style="list-style-type: none"> <li>• Require construction workers to wear appropriate PPE and follow health and safety protocols.</li> <li>• Routine monitoring and maintenance of site infrastructure and immediate clean-up of any spills or leaks as per the emergency response plan.</li> <li>• Prepare an emergency response plan and preparedness awareness program for workers and the local community in the event of a spill, fire, and/or explosion.</li> </ul>
Communicable Diseases and Biological Injury	<ul style="list-style-type: none"> <li>• Develop a maintenance plan to avoid the presence of standing water.</li> <li>• Use of screens on new infrastructure.</li> <li>• Develop a waste management plan to avoid improper waste storage.</li> <li>• Education of workers on-site with respect to breeding sites, use of spray repellants, and properly maintained screens on doorways and windows.</li> </ul>
Traffic	<ul style="list-style-type: none"> <li>• Limit designated construction routes to major roadways avoiding residential areas, if possible.</li> <li>• Limit construction traffic times to low traffic periods of the day to minimize accidents and truck idling.</li> <li>• Post construction related traffic signs including speed limits, and heavy-equipment crossings on-site.</li> <li>• Educate employees regarding pedestrian safety during commuting times, encourage carpooling or provide bussing of staff to the site.</li> <li>• Provide public notification of possible traffic delays at certain hours in advance of construction activities.</li> </ul>
Social	<ul style="list-style-type: none"> <li>• Maintain communication with stakeholders including the local community (e.g. newsletters, meetings) to promote social cohesion and education.</li> </ul>

Health Determinant	Mitigation Measures
	<ul style="list-style-type: none"> <li>Plans to hire local workers should be shared across various media (newspapers, radio, television etc.).</li> </ul>

### 3.15 Worker health and safety

As a part of the site-specific induction training, all staff and subcontractors should undergo safety training to ensure their safety on site. Safety training will include best practices for working:

- With hazardous materials
- At heights
- In confined spaces
- With heavy equipment
- Under COVID-19 safety protocols

During staff orientation and regular training sessions, slideshows and PowerPoint presentations can be used to educate staff about health, safety, environmental and social issues. All new staff will participate in site-specific induction training delivered by the designated manager. The training should cover issues inclusive of legislation, regulations, environmental management, staff duties and responsibilities, mitigation measures and the EMP. Training will culminate in testing of staff's knowledge on health, safety, environmental and social management issues.

There should also be weekly staff talks (also referred to as Toolbox talks) regarding mitigation measures for any negative environmental and social impacts. All staff should be required to attend. Topics will include, but not be limited to:

- Air pollution control
- Waste reduction and management
- Noise control
- Good housekeeping practices
- Handling of hazardous materials
- Emergency preparedness

The monthly monitoring report to DEPP needs to include:

- A record of staff who have undergone orientation training.
- A copy of weekly staff (Toolbox) talks with signatures of staff that participated.

Forms to be completed for each training are provided at Appendix 5.

Workers should be required to wear appropriate personal protective equipment (PPE) and be trained in how to properly wear and/or use this equipment.

Workers should also be trained in incident or accident response, including first aid.

The presence of fuel can place the site at high risk for potential fire-related accidents. Such situations may require an immediate response, whereby waiting for emergency personnel can lead to dire circumstances.

There should be adequate and visible signage posted about first aid and fire-fighting equipment at the site. Safety precautions and information must also be posted.

The following first aid and fire safety guidelines should be followed:

- a) The fire-fighting equipment during construction and operation must at least include the presence of fire extinguishers, but could also include water hoses and fire carpets.
- b) The fire-fighting equipment must be easily identified and accessible 24 hours a day on both Sites 1 and 2 and indicated on site maps.
- c) Fire extinguishers must be present at the fueling station, near hazardous waste storage facilities and at locations where high temperature work is going on.
- d) First aid equipment must be present at the construction site at locations known to all staff. During operation, designated locations for first aid equipment should be known to all staff.
- e) Public or emergency telephones at or very near the site must also be available 24 hours a day, and clearly indicated on the site maps.

### **COVID-19 Safety Protocols**

The guidance on COVID-19 safety protocols provided from the Ministry of Health include:

1. Construction companies are allowed to operate between the hours of 7 am to 5 pm (Monday to Friday) and 7 am to 1 pm (Saturday).
2. A distance of six (6) feet between individuals should be maintained.
3. Each individual should wear a mask covering their nose and mouth when distance between individuals is less than 6 feet.
4. Hands should be washed frequently with soap and water. If running water and soap are not available, an alcohol-based hand sanitizer should be applied regularly.
5. If you have to sneeze or cough, do so into your elbow or a tissue. If you use a tissue, discard the tissue into a closed bin and immediately clean your hands with soap and water or an alcohol-based hand sanitizer.
6. Disinfect equipment or surfaces that are touched frequently.
7. If an individual experiences the following symptoms, he/she should stay home from work and contact the Ministry of Health or a medical doctor for guidance on medical treatment and testing:
  - a. Fever (temperature of 100.4°F or higher)
  - b. Chills
  - c. Cough
  - d. Shortness of breath or difficulty breathing
  - e. Fatigue
  - f. Muscle or body aches
  - g. Headache
  - h. Loss of taste or smell
  - i. Sore throat
  - j. Congestion or runny nose
  - k. Nausea or vomiting
  - l. Diarrhea

As COVID cases decline, these protocols may change. The Project Manager should monitor guidance issued by the Ministry of Health to ensure the site is following appropriate COVID-19 safety protocols, including lifting of mask mandate should numbers continue to decline or institution of additional protocols (e.g. maximum staff numbers on site) should numbers start to increase again.

### **3.16 Neighbouring businesses and communities**

Periodic monitoring of the project site will ensure that storage, staging, and parking areas are maintained, and other construction activities do not encroach on nearby properties.

Physical barriers such as fencing, netting, and temporary storage and staging areas can be used to ensure that visually unappealing aspects of the construction site are not visible outside of the site.

Traffic management will control aspects of transportation that may impact infrastructure and public services, specifically the use of the public road. Engaging service providers in advance of construction will allow for proper planning and ramping up of services prior to the increase in demand.

Tourist and recreational activities may be impacted by the project; these would include birdwatching (due to noise disturbances), beaching activities, walking and jogging due to construction activities, such as traffic diversions. These impacts are expected to be short-term and temporary. Mitigation during construction would include public notifications of any planned traffic diversions or impacts. No mitigation should be necessary once the project is in its operational phase.

### **3.17 Public awareness and communication**

Engaging stakeholders prior to the start of construction will allow for communication channels to be established and tested. Communication channels should remain open during construction and operation phases. Stakeholders should be given the opportunity to voice concerns and provide input periodically, so as to ensure that all concerns can be addressed in a timely fashion. This would also reduce the risk of any major conflicts with stakeholders arising unexpectedly and potentially derailing or slowing down the project.

Stakeholders should include, but not be limited to, public and private sector entities in or near Gregory Town.

Consultations should also take place with agencies that provide services in the area or have interests and assets in the adjacent area. This is critical as it will allow for better coordination of activities. This would also potentially reduce costs and impacts to the entities and communities they provide services to.

Once construction commences, the public will be advised of instances of inconvenience or disturbance, such as changes to traffic routes and times of excessive noise. Signage will also be utilized on and near the site to advise of things, such as traffic diversions and active construction areas. At least one sign needs to include information about the onsite contractor inclusive of a telephone number and email address for contacting them. Contact information should also be provided for DEHS, DEPP and Ministry of Public Works. Examples of other signage on site are provided below in Figure 3-1.

Figure 3-1: Signage for Construction Site



The public, especially neighbouring residents, must be informed of the mechanism for reporting concerns or problems and this mechanism must be easily accessible and responsive. Options for this mechanism include a telephone hotline, website or contact person. When concerns are communicated, they should be acknowledged within 24 hours and resolved within 48 hours, when feasible. If it is not feasible to resolve a matter within 48 hours, persons should be advised of this and regularly updated on progress in addressing their concerns.

The complaints form in Appendix 6 or a similar version should be used to record any complaints received about the project. All complaints should be recorded, including:

- Date of complaint;
- Complainant (name and contact information);
- Nature of problem including location;
- Time;

- Number, gender and age of people impacted; and
- Costs associated with the problem or incident, if possible (e.g. cost of doctor's visit and medication; cost of repair to vehicle or third-party property, etc.)

### **3.18 Environmental and social monitoring**

The monitoring and reporting regime for the project during construction will include monthly site inspections which will be conducted by a designated staff member or subcontractor. These inspections will provide a means to enforce specific environmental and social management measures. Site inspection observations and results will be documented using site inspection forms, which will be submitted to the Project Manager. These forms will also be submitted to the DEPP on a monthly basis. A possible template for the inspection form is provided in Appendix 7.

If non-compliance is found during an inspection, appropriate action as per the EMP will be implemented. The inspection will not be limited to the project site, but also observations of environmental and social management issues in areas adjacent to the project site, which are likely to be impacted, directly or indirectly, by site activities during construction and operation.

It should be noted that the DEPP may also conduct unannounced site inspections to ensure compliance with the EMP. The 2019 Environmental Planning and Protection Act gives DEPP the power to issue a cease and desist order for non-compliance with conditions of the Certificate of Environmental Clearance.

#### **4.0 Conclusions**

Employment of appropriate design and planning methodologies can result in construction and operation in a sustainable manner. Utilizing the detailed mitigation measures will eliminate or minimize any negative environmental impacts that may occur during construction and operation.

The EMP should be utilized to guide construction and operation activities on the project site.

Bel Air Resort and Residences has expressed its commitment to implementing the mitigation measures detailed in the EMP and executing the project in a manner that is environmentally sustainable.

## References

Centers for Disease Control and Prevention. (2020). *Symptoms of Coronavirus*. Retrieved from <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>

U.S. Environmental Protection Agency. (1996). *Presumptive Response Strategy and Ex-Situ Treatment Technologies for Contaminated Groundwater at CERCLA Sites – Final Guidance*. Washington, D.C.: Office of Solid Waste and Emergency Response.

Government of The Bahamas. (2019). *Environmental Planning and Protection Act*. Nassau: Bahamas Government Publications.

Ministry of Health. (2020). Novel Coronavirus (2019-nCoV) website - [http://www.bahamas.gov.bs/wps/portal/public/novel%20coronavirus%20\(2019-ncov\)/](http://www.bahamas.gov.bs/wps/portal/public/novel%20coronavirus%20(2019-ncov)/)

SEV Consulting Group. (2022). *Environmental Impact Assessment (EIA) for Bel Air Project, Eleuthera*. Nassau: SEV Consulting Group.



## Appendix 1: Construction Schedule

### BELAIR BAHAMAS PROJECT SCHEDULE

LOCATION/DESCRIPTION	2022						2023										
	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	
Main access road																	
<b>RESTAURANT</b>	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	
Undergorund work/Foundation																	
Structure																	
Roof																	
Finishes																	
<b>SWIMMING POOL</b>	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	
Foundation/pool structure																	
pool finishes/deck																	
<b>TENNIS COURTS</b>	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	
Foundation/slab																	
Pain/lights/finishes																	
<b>MASSAGE COTTAGES</b>	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	
Cottages foundations																	
<b>FITNESS CENTER</b>	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	
Building foundations																	
Structure																	
Roof																	
Fnishes																	
<b>COTTAGES (2.5 per month)</b>	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	
Underground work																	
Foundation, slabs																	
Cottage fabrication, installation																	

## **Appendix 2: Petroleum Spill Response Plan**

Spills and leaks that occur during vehicle and equipment fueling can contribute hydrocarbons, oil and grease, as well as heavy metals to stormwater runoff. The following management practices will be implemented to help prevent fuel spills and leaks. A reduction in the potential for pollutant discharge will be done through source control pollution prevention and best management practices (BMP) implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

The spill response plan contact information:

### **Emergency Agencies**

First Aid Responder **919**

Police Department **911** or **335-1208 (Lower Bogue)**

A fire truck has recently been provided to North Eleuthera through an IDB-funded project. The fire truck is stationed at the North Eleuthera Airport. In the event of a fire, the airport will need to be contacted at **332-1772, Civil Aviation Crash and Fire Department (Lower Bogue)**.

The South Eleuthera Emergency Partners (SEEP) has a fire truck, but the truck only services communities in South Eleuthera.

### **Administrative Agencies**

Department of Environmental Planning and Protection **322-4546**

Department of Environmental Health Services **335-1442 (Upper Bogue, North Eleuthera)** or **322-8037 (New Providence)**

The spill response team is comprised of the following staff with their names and cell phone numbers provided.

- Incident Commander (IC): Project Manager – **Davon Gibson, Tel: 470-8185**
- Alternate IC: Site Superintendent – **Philippa Johnson, Tel: 823-4394**

### **SPILL CONTROL PRACTICES**

In addition to the good housekeeping and material management practices discussed in the previous sections of this EMP, the following practices will be followed for spill prevention and cleanup:

- Manufacturer's recommended methods for spill cleanup will be clearly posted and staff will be made aware of the procedures and the location of the information and clean-up supplies.
- Materials and equipment necessary for spill cleanup will be kept in the designated storage area onsite. Equipment and materials will include, but not be limited to, brooms, dustpans, mops, rags,

gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.

- Staff will wear appropriate protective gear to prevent injury from contact with a hazardous substance.
- Employees will be educated about spill prevention measures.
- All spills will be cleaned up immediately after discovery. Spills are not cleaned up until all materials used in the cleanup are picked up and properly disposed of.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with petroleum products, which can be hazardous.
- Spills of petroleum products will be reported to the Incident Commander and relevant Government agencies, regardless of the size.
- The spill prevention plan will be adjusted, as necessary, to include measures to prevent spills from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included. This information is usually documented in a spill incident report form. The format for the spill incident report form is provided on page 39.
- The Incident Commander is responsible for spill prevention and cleanup coordination. She will designate at least two other staff members who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible staff members should be posted at the project site or main building's administrative offices.
- A stockpile of spill cleanup materials will be stored where it will be readily accessible.

**Petroleum Spill Incident Report Form**

Reporting Party's Name:			
Address/City/State:			
Phone:			
Responsible Party's Name (if known):			
Address/City/State:			
Phone:			
Date of Spill:		Time:	
Location:		Product spilled:	
Estimated quantity:		Discharge stopped or contained?	
Source or cause of spill (if known):			
Actions taken:			
Injuries/fatalities/evacuations?			
Environmental damage:			
List of equipment used:			
Disposal site/facility for used absorbents:			
<b>Oil Spill Notifications</b>			
<b>Organization</b>	<b>Phone</b>	<b>Time Contacted</b>	<b>Case Number</b>
Fire Department			
Spill response contractor			

### **Appendix 3: Hazardous Material Management Plan**

This plan outlines best management practices for hazardous materials that may be found or generated on site.

#### Good Housekeeping

- An effort will be made to store only enough product required to do the job.
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used before disposing of the container.
- Manufacturers' recommendations for proper use and disposal will be followed.
- The Site Superintendent will inspect the site daily to ensure proper use and disposal of materials onsite.

#### Hazardous Products

If hazardous materials are required, then the guidelines below will be followed:

- Products will be kept in original containers unless they are not resealable.
- Original labels and material safety data sheets will be retained for important product information.
- If surplus product must be disposed of, the manufacturer or local recommended methods for proper disposal will be followed.

#### Petroleum Products

All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chances of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.

#### **PREVENTION OF POLLUTION OF GROUNDWATER**

To ensure that all efforts are undertaken to ensure that the groundwater is not impacted during construction the following actions will be taken:

- All diesels, fuel and other toxic materials shall be securely bounded in welded steel trays whose capacity is at least 110% of the maximum stored volume of the fuel. Bunds shall be inspected and cleaned out at regular intervals.
- Any bulk tank with an integral delivery hose and nozzle shall have a means of securing and padlocking at the nozzle above the maximum fill level and the nozzle shall be locked in this position when not in use.
- A fueling area shall be designated adjacent to the storage tanks and this shall be comprised of a concrete apron laid to falls, draining into the steel tray or leak proof sump.
- Generator and other static plants shall be of a type supplied with integral bunds or shall be located within a welded steel tray of appropriate volume.

- All mobile plants such as vehicles, pumps and excavators used on site shall be in good condition and free from engine, lubrication and hydraulic oil leaks and shall have steel drip trays placed beneath them when not in use.
- All containers for chemicals and lubricants used on site shall be stored in trays of steel or other approved materials of appropriate volume.

If there is a major Spill, call the following agencies:

- Fire Department (should fire be possible) **332-1772, Civil Aviation Crash and Fire Department (Lower Bogue)**
- Department of Environmental Health Services **335-1442 (Upper Bogue, North Eleuthera) or 322-8037 (New Providence)**
- Department of Environmental Planning and Protection **322-4546**

### Hazardous Material Reporting Form

Description of hazardous material:	
Weight or volume of material disposed of:	
Name of licensed contractor disposing of material:	
Signature of licensed contractor:	
Date of disposal:	

A copy of the signed receipt from the licensed facility where the hazardous material was disposed of should be attached to this form.

## Appendix 4: Emergency Response Plan

### 1.0 Purpose and Applicability

1.1 The purpose of this Plan is to coordinate the response of the workers to a situation that may jeopardize the safety or wellbeing of the workers, the general public, the community and the environment. Types of disasters include: fires, explosions, bomb threats, chemical releases, loss of utilities, and natural disasters (floods, wind, etc.). It should be noted that where applicable any national Emergency Response Plan will supersede this plan.

### 2.0 Roles and Responsibilities

2.1 **Command Center** will be the general office location of the Contractor or the area identified by the Designated Manager if this is not acceptable.

2.2 **Disaster Team** will respond to all emergency, contingency and disaster situations. This will comprise the Project Manager, Designated Manager, and, where applicable due to the extent of the emergency, relevant Government agencies' representatives.

2.3 **Incident Commander** or highest-level administrator who is present at an incident will report to the Command Center as soon as possible. The Incident Commander is authorized to declare an evacuated area safe for re-occupancy. In the event of an emergency requiring the assistance of Government agencies, the Government representatives will assume the responsibility of the Incident Commander. For localized situations which do not require Government agency involvement, the Incident Commander will be the Contactor's representative for the project. The Incident Commander is also responsible for ensuring that an incident reporting form is completed for every incident on site as described by the Emergency Response Plan. Copies of completed incident reporting forms should be kept on site and made available to Government officers if requested during an inspection. Any incident reporting forms should be submitted along with weekly environmental monitoring reports submitted to the DEPP.

2.4 **Managers/ Supervisors** shall maintain a current list of workers including their home phone numbers and mobile phone numbers, if applicable. Managers are also responsible for evacuating staff of affected areas as necessary and as instructed, and to account for all staff.

2.5 **Security** will respond under the direction of the Security Supervisor. Security personnel will take immediate steps to prevent the entrance of all non-essential traffic at the incident. The Highest-Ranking Officer on duty will be responsible for traffic control. Security personnel will ask employees not authorized to be at the incident scene to leave the area.

### 3.0 Disaster Declaration Procedures

3.1 A **Phase A (Alert) Disaster** is the initial response to the report of a potential disaster or an actual disaster when the impact on the construction site is uncertain. For example, a Phase A disaster might involve an equipment system failure that may extend for a few hours. Limited on-site personnel can handle a Phase A disaster. Advancement to a Phase B is unnecessary unless the incident cannot be handled by those already involved or the nearby residents must be notified.



3.2 A **Phase B Disaster** will be declared in response to an actual event that stresses onsite operations, but can be managed by on-duty personnel or requires outside assistance. The purpose of Phase B is to quickly mobilize on-duty personnel and resources in support of event management. For example, a Phase B disaster might involve extended or widespread power failures due to downed lines, a significant fire, or a significant hazardous material release on site. Notification for a Phase B disaster will be accomplished by mega-phone and other available PA systems. Each supervisor with specific roles in a disaster is responsible for notifying their own staff. Upon notification of a Phase B disaster, personnel will remain on duty, report immediately to their assigned areas, and proceed as directed. In the event of upgrade or termination of Phase B, all personnel who have been contacted will be informed by supervisors.

3.3 A **Phase C Disaster** is the site response to a major disaster in which on-site personnel cannot effectively manage the event. The purpose of a Phase C is to quickly mobilize necessary Public Emergency Responders. A Phase C disaster involves the evacuation of staff from the site. Notification for a Phase C disaster will be accomplished via mega-phone and other available PA systems, and each supervisor with specific roles in a disaster is responsible for notifying their own staff. A Phase C may be terminated at the discretion of the Incident Commander. Upon notification of a Phase C disaster, personnel will remain on duty and report immediately to supervisor for direction.

#### **4.0 Disaster Procedures**

4.1 Each department shall maintain a current list of personnel including their home phone numbers and mobile phone numbers. This list will be made available to the Incident Commander upon request.

4.2 The following terms and corresponding emergency contact numbers must be used to report or declare an internal disaster.

#### **Emergency Agencies**

Fire Department **332-1772, Civil Aviation Crash and Fire Department (Lower Bogue)**

Ambulance Department **919**

Police Department **911 or 335-1208 (Lower Bogue)**

#### **Administrative Agencies**

Island Administrator **332-2112 (Governor's Harbour) or 333-2275 (Harbour Island)**

Bahamas Power and Light **302-1000 (New Providence) or 333-2255 (Harbour Island)**

Department of Environmental Planning & Protection **322-4546**

Department of Environmental Health Services **335-1442 (Upper Bogue, North Eleuthera) or 322-8037 (New Providence)**

Department of Meteorology **356-3734 or 356-3736**

Hurricane Forecast Section **377-7178 or 377-7040**

Royal Bahamas Police Force **335-1208 (Lower Bogue) or 911**

Water and Sewerage Corporation **335-1250 (Bogue)**

Ministry of Works **332-2143 (Governor's Harbour)**

Gregory Town Community Clinic **335-5108**

Ministry of Health (COVID-19 Surveillance Unit) **502-7382**

4.3 The **Disaster Team** will be comprised of the following staff

- Incident Commander (IC): Project Manager – **Davon Gibson, Tel: 470-8185**
- Alternate IC: Site Superintendent – **Philippa Johnson, Tel: 823-4394**

4.4 Contractor's Project Manager will perform the initial investigation of a potential disaster. As the investigation progresses, the Command Center will be updated. If a significant threat exists, the Command Center will notify the Incident Commander. It is the responsibility of the Incident Commander to assess the situation and issue the announcement specifying the level of the disaster and the location of the Command Center.

### **Hurricanes**

Please follow the Hurricane Preparedness and Response Plan in section 3.12.

### **Fuel Spills**

Please follow the Petroleum Spill Response Plan in Appendix 2.

### **FIRE AND EXPLOSION CONTROL MEASURES**

There will be no burning on the construction site and a fire extinguisher will be kept on site at the fueling area. There will be no smoking on the construction site, particularly in or near the designated fueling area.

All employees will immediately report any fires occurring in or near the site. A phone will be available to all employees for emergencies which might occur on site. All emergency numbers will be posted on site.

If there is a fire or explosion, call the **Fire Department at 332-1772, Civil Aviation Crash and Fire Department (Lower Bogue)**.

### **MUNICIPAL ELECTRICAL POWER LOSS OR DAMAGE**

All issues relating to loss or damage to power lines, poles or junction boxes whether in the ground or overhead must be deferred to BPL. The Project Manager will ensure that all staff is removed from the area and that the area is secured. BPL Harbour Island office is **333-2255** and New Providence is **302-1000**

### **MUNICIPAL WATER LINES DAMAGE**

All issues relating to loss or damage to water lines or junction boxes will be the responsibility of the Contractor. The Project Manager will ensure that all staff is removed from the area, that the area is secured and that the Water and Sewerage Corporation is notified (Telephone **335-1250 in Bogue**).

### **ACCIDENTS INVOLVING THE PUBLIC**

In the event of an accident involving members of the public, whether by vehicle or pedestrian, the Police, Fire Department and/or Ambulance will be notified as required. The Project Manager will ensure, as much as is possible, that the area is secured and that the accident site poses no additional safety risk to the public or

staff. Once the Government agents have arrived on the scene, these agents will assume responsibility of the site of the accident.

**Incident Reporting Form**

<b>Incident</b>	
Reported by:	
Contact details: Company: Email: Phone:	
Date of occurrence:	
Time of occurrence:	
Type of incident:	<input type="checkbox"/> Accident <input type="checkbox"/> Incident <input type="checkbox"/> Near miss <input type="checkbox"/> Violence <input type="checkbox"/> Ill health <input type="checkbox"/> Safety <input type="checkbox"/> Other
Description of incident:	<i>(Include details that may have contributed to the incident (e.g. poor lighting, absence of signage))</i>
Description of the outcome:	<i>(Harm/health effects/damage)</i>
Description of the corrective measures taken to address immediate hazards related to the incident:	
<b>The affected person:</b>	
Description:	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Worker <input type="checkbox"/> Visitor <input type="checkbox"/> Contractor <input type="checkbox"/> Other
Name:	
Address:	
Date of birth:	
Telephone:	
Email:	

<b>Witness details</b>	
Name	
Address:	
Telephone:	
Email:	
<b>First aid</b>	
First aid provided:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Time of attendance:	
By whom:	Name: Address: Telephone: Email:
Details of provision:	
<b>Post incident:</b>	
Where did the person involved in the incident go next?	<input type="checkbox"/> Hospital <input type="checkbox"/> Clinic <input type="checkbox"/> Private doctor <input type="checkbox"/> Home <input type="checkbox"/> Returned to work <input type="checkbox"/> Other
Was the health and safety officer notified of the incident?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Additional information:	

## Appendix 5: Training Forms

Site induction form			
Employee name:		Position/job title:	
Employment start date:		Supervisor/manager:	

### ***Health and safety***

I have been shown:

- How to do my job safely, including the use of guards and other safety equipment
- The safety signs and what they mean
- How to safely use, store and maintain safety equipment
- How to safely use, store and maintain equipment, machinery, tools and hazardous substances

I know:

- My responsibilities as an employee
- Where EMP and HSE information is kept

### ***Hazards***

I know:

- The hazards in my workplace
- The controls for these hazards
- How to report hazards
- Where records of hazards are kept
- The procedures for working safely

### ***Emergencies***

I am familiar with:

- The location to assemble at in the event of an emergency
- The location of the fire extinguishers
- The evacuation procedure
- The first-aid kit and its location
- Who can provide first-aid (if applicable)

### ***Incidents and injuries***

I know:

- To report injuries, near hits and misses and early signs of discomfort and how to report them
- Where incident/injury forms are kept
- Who I report to
- Reports will be investigated and I will be informed of the results

***Accidents and Spills***

I know:

- To report accidents and spills and how to report them
- The petroleum spill kit and its location
- Where accident/spill forms are kept
- Who I report to
- Reports will be investigated and I will be informed of the results

Signed by employee:		Date:	
Signed by trainer:		Date:	

**Weekly staff meeting:**

<b>Training record</b>			
Employee:			
Occupation:			
Training subject (and key points covered)	Date trained	Date retrained	Signature to confirm training delivered and understood
			Employee:  Supervisor:
			Employee:  Supervisor:

### Appendix 6: Contractor's Report of Complaints Received

Date of complaint:	
Time of complaint:	
Name of person recording complaint:	
Name of person making complaint:	
Telephone number:	
Address:	
Nature of complaint:	
Results of investigation:	
Action taken:	
Date complainant contacted with results of the investigation and action taken:	
Name and signature of person investigating the complaint:	



## Appendix 7: Template for Inspection Form

**Contractor:** \_\_\_\_\_

**Observers:** \_\_\_\_\_

**Tide:** high/low

**Weather:** sunny/partly cloudy/mostly cloudy/rain

**Date/Time:** \_\_\_\_\_

**Air Temp (°F)** \_\_\_\_\_

**Rain in last 24 hrs:** Yes/No

### Types of Construction Activities

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Excavation            | <input type="checkbox"/> Erosion and sediment control | <input type="checkbox"/> Air pollution/Dust control |
| <input type="checkbox"/> Fill import           | <input type="checkbox"/> Waste/Hazardous material     | <input type="checkbox"/> Water/Drains issues        |
| <input type="checkbox"/> Land clearing/Grading | <input type="checkbox"/> Noise pollution              | <input type="checkbox"/> Other                      |
| <input type="checkbox"/> Fueling               | <input type="checkbox"/> Building construction        |   |

### Excavation Operations

Components	Compliance w/ EMP	Maintenance required	Comments/Recommendations
Control of dewatering discharge and runoff.	<input type="checkbox"/>	<input type="checkbox"/>	
Contamination/oil spills identified	<input type="checkbox"/>	<input type="checkbox"/>	
Hazardous/contaminated material disposal and containment.	<input type="checkbox"/>	<input type="checkbox"/>	
Proper disposal of spoils	<input type="checkbox"/>	<input type="checkbox"/>	

### Erosion and Sedimentation Control

Components	Compliance w/ EMP	Maintenance required	Comments/Recommendations
Proper stabilization of slopes and exposed areas on construction site and at stockpile site	<input type="checkbox"/>	<input type="checkbox"/>	
Adequate installation and maintenance of perimeter controls.	<input type="checkbox"/>	<input type="checkbox"/>	
Use of diversion swales and basins.	<input type="checkbox"/>	<input type="checkbox"/>	
Proper sorting of spoils at stockpile management site	<input type="checkbox"/>	<input type="checkbox"/>	

### Groundwater Management

<i>Components</i>	<i>Compliance w/ EMP</i>	<i>Maintenance required</i>	<i>Comments/Recommendations</i>
Measures to control oil or chemical spillage (e.g. fuel containment sump, drip trays)	<input type="checkbox"/>	<input type="checkbox"/>	
Accessibility of spill kits/absorbents and spill response equipment	<input type="checkbox"/>	<input type="checkbox"/>	
Adequate secondary containment for fuel and oil tanks.	<input type="checkbox"/>	<input type="checkbox"/>	

### Air Quality Management

<i>Components</i>	<i>Compliance w/ EMP</i>	<i>Maintenance required</i>	<i>Comments/Recommendations</i>
Watering of construction sites to minimize dust generated.	<input type="checkbox"/>	<input type="checkbox"/>	
Equipment properly maintained to reduce emissions.	<input type="checkbox"/>	<input type="checkbox"/>	

### Waste Management

<i>Components</i>	<i>Compliance w/ EMP</i>	<i>Maintenance required</i>	<i>Comments/Recommendations</i>
Good housekeeping practices on site.	<input type="checkbox"/>	<input type="checkbox"/>	
Adequate on-site sanitary facilities.	<input type="checkbox"/>	<input type="checkbox"/>	
Sewage being properly disposed of.	<input type="checkbox"/>	<input type="checkbox"/>	
Proper collection and disposal of construction and hazardous wastes (licensed collectors, manifests)	<input type="checkbox"/>	<input type="checkbox"/>	
Vehicle wash down / Contractors Yard	<input type="checkbox"/>	<input type="checkbox"/>	

**Landscape Management**

<i>Components</i>	<i>Compliance w/ EMP</i>	<i>Maintenance required</i>	<i>Comments/Recommendations</i>
Minimization of disturbance to terrestrial vegetation (e.g. plants to be preserved).	<input type="checkbox"/>	<input type="checkbox"/>	
Invasive plants and trees removed	<input type="checkbox"/>	<input type="checkbox"/>	
Vegetative corridors established using native vegetation	<input type="checkbox"/>	<input type="checkbox"/>	

**Other**

<i>Components</i>	<i>Compliance w/ EMP</i>	<i>Maintenance/Action required</i>	<i>Comments/Recommendations</i>
Proper maintenance and availability of fire extinguishers	<input type="checkbox"/>	<input type="checkbox"/>	
Workers wearing proper PPE	<input type="checkbox"/>	<input type="checkbox"/>	
Workers observing COVID-19 safety protocols including wearing masks and social distancing	<input type="checkbox"/>	<input type="checkbox"/>	

**Other Corrective Actions Needed:**

**Inspector(s):** \_\_\_\_\_