APPENDIX F: DESECHEO HELICOPTER STRATEGY

This covers the positioning of bait, fuel and equipment as well as personnel onto the island prior to the two bait applications. Following safe operating procedures is a critical component of all aerial operations. All personnel participating in aerial operations, including passengers must read the Helicopter Safety Plan **APPENDIX L: Helicopter Safety**

Helicopter Storage

The helicopter will be stored at the hanger at the Copeca Jet Center at the Aguadilla Airport (BQN) during non-operational days. On all operational days the helicopter will be fueled and ready to begin flights at sunrise. Following completion of each external load operational day the helicopter will be parked at either the Copeca hanger or the Staging Site, whichever makes more sense logistically. The night before a baiting operation the helicopter will be stored at Desecheo Island. The helicopter will be refueled as needed using approved fuel drums on the island or staging site or at the Copeca hanger with the fuel truck. The helicopter contractor will be responsible for ensuring all the necessary equipment for remote helicopter storage and refueling are readily available at the required location at any given time during the operations.

In addition to storage on island the night before each operation, in the event of inclement weather during staging or baiting operations, the helicopter may seek temporary shelter on Desecheo Island. Prior to initiating the operation, the pilot will examine the Desecheo Island helipad location to determine the protocol for temporary storage of the helicopter in the field. At this time the pilot and Loading Site Controller will assess the Desecheo Island helipad to determine the final layout as a bait loading site.

Operational Sites (Landing Zones)

The project will utilize two separate primary landing zones, one on the main island of Puerto Rico referred to as the staging site and the other on Desecheo Island referred to as the bait loading site. Both sites will have a primary landing pad which will also serve as a refueling site. A secondary landing pad will be confirmed by the pilot prior to initiating operations in case of emergency or the sudden presence of a hazard at the primary landing pad, on Desecheo Island both landing pads are large enough for coast guard rescue helicopter to land. Both sites will be outfitted with wind indicators and each pad marked for aerial identification to ensure clear communication and safety between ground personnel and pilot. The perimeter of each site will be identified and marked to ensure site security during operations. DOI employees will not enter a site when active flight operations are taking place. The set-up and layout of the staging site and bait loading site will be directed by the Load Site Controller with recommendations made by the pilot. Additionally a scale will be available at each site for preparing sling loads.

Staging Site

Bait and supplies will be transported from a staging site by helicopter to Desecheo as external loads; once on Desecheo Island bait pods will be staged off to one side of the concrete pad on Island ensuring sufficient space to land the helicopter. There are three potential staging sites (Figure 1): PREPA Bonus Power Plant located in Rincon, FURA Añasco Law Enforcement Station, and the disused airfield at the Aguadilla Airport. PREPA Bonus Power Plant is the preferred and planned site given this site was used during the 2012 operation with no issues identified and it is only 20 km from Desecheo. FURA Añasco is 32 km and Aguadilla airport is approximately 40 km from Desecheo.

Alternative staging sites

In the event that the staging site is not Bonus Power Plan facility in Rincon, one of the two backup sites mentioned will be used as the staging site. Proposed flight paths and layouts for the alternative staging sites can be found in Section 11. These flights paths have been approved by the managers of each staging site and by the FAA for overflying roads.

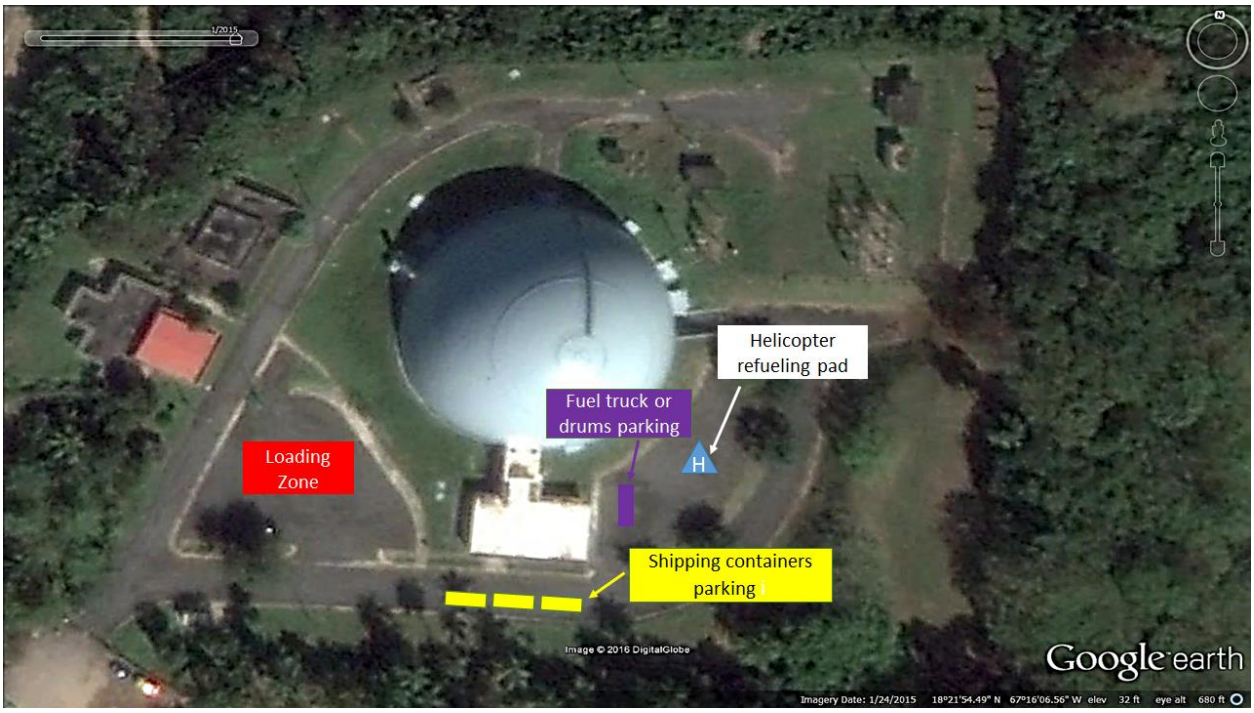
Figure 1. Staging site options for external load operations. All of these sites are considered acceptable for the external load operations from an operational perspective. The PREPA Bonus site is the planned and preferred alternative however if the PREPA Bonus site is unavailable the other two options are available as alternatives.

(Bonus Power Plant, Rincon)

The staging site will be located at the PREPA Bonus power plant in Rincon, and will serve as the staging site and operations area for helicopter external load operation including; the transport of bait, water, equipment and helicopter fuel to the island. The staging site will also be serve as the departure location for passenger missions that occur in conjunction with operations. The staging site shall consist of one container storage area, one loading zone for preparing and hooking up external loads to the helicopter long line, and one refueling/helicopter parking pad (Figure 2). A secondary landing pad will be determined by the pilot prior to initiating any aerial operations in case of emergency or presence of an unanticipated hazard. Prep for the staging site will include: positioning the fire extinguishers, helicopter crash kit and wind indicator. As much as possible sling loads will be prepped the day before. A separate document outlining the contents of the external loads and

order they will be flown will be created in advance of the external load operation. The air ops team and fork lift driver will arrive to the staging before sun rise and begin position the first loads.

Figure 2. Proposed layout of Staging site Bonus Power Plant



Helicopter fuel storage and handling

For all Helicopter operations based out of the Copeca facility refueling will be undertaken using the certified Copeca bulk fuel truck and fueling staff. Jet A-1 for both undertaking the staging operation and for transport to the island for the baiting operation will be transported to the staging site in DOT HAZMAT rated 55 gallon drums by Petro West Inc, a certified private company in distribution and dispensing of petroleum. A secondary containment in each fueling area will be available. Fuel will be delivered to the staging site as needed for each external load operation (Table 3). Empty fuel drums will be collected from the staging site by Petro West as soon as possible after each operation. As of January 2016 Petro West has confirmed availability to supply the necessary fuel for the operation to the staging site.

Flight Path to/from the Bonus Power Plant

The proposed flight path to/from the Rincon facility to Desecheo Island (see Figure 3) is recommended to reduce the potential for overflight of public areas with an external load. Beach areas heavily utilized by the public will be considered 'no fly zones' for this operation and will be avoided. Prior to operations, a suitable flight path, where public access is minimized, would be selected on the ground, and a flight line would be determined and tracked using GPS flight tracker so that all subsequent flights would follow the same route. If necessary, a flag or other marker can be placed on the shoreline as a point of reference that would be visible to the pilot. Approach and

departure direction along the flight path may be modified to account for local weather conditions on the day of flying and/or operational needs.

Figure 3. Proposed flight path to/from Desecheo from Bonus power plant.

Safety Equipment

Two 20-pound 40-B:C fire extinguishers will be available at each site. Additionally, a kit for first aid and a crash rescue kit will be staged at each site.

Handling of Bait and Equipment

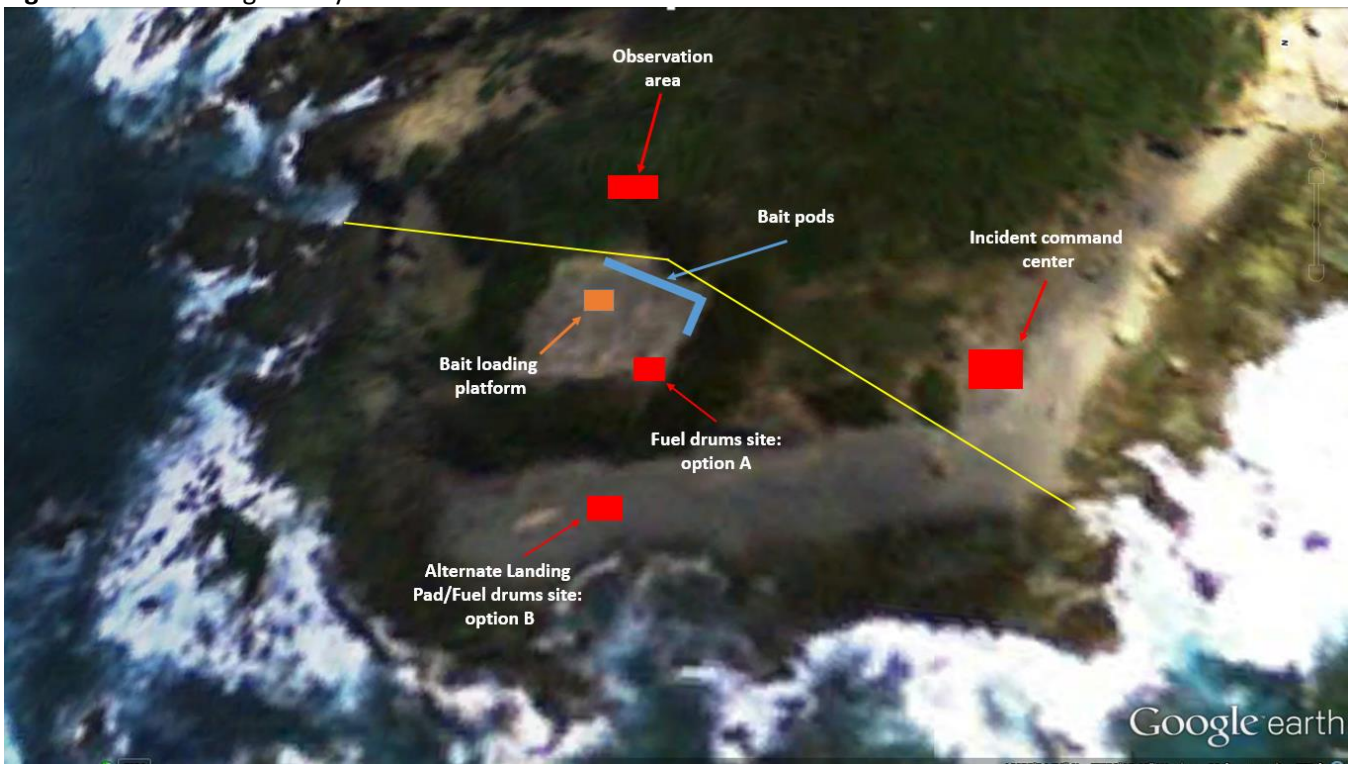
A fork lift must be on site to ensure bait pods, wooden-crates containing bait spreader buckets and additional equipment can be removed from containers and staged for the external load operation. One fork lift will be contracted from Lajas, Puerto Rico and will be available at the staging site as needed for: the calibration, the first external load/baiting operation, the second external load/baiting operation and demobilization. A back-up forklift has been identified.

Bait Loading Site (Desecheo Island)

The bait loading site will be located on the West corner of Desecheo Island and shall include the concrete pad and a portion of the flat beach area below (Figure 4). Full bait pods will be transported to the bait loading site and set-up in a strategic layout prior to the aerial baiting operation. The bait pods will be set up in an L-shape that allows the team to quickly carry bait bags to the bait loading platform in between bait spreader bucket re-loads. The concrete pad (helipad) will serve as the primary landing pad; the flat rocky beach area below the helipad will serve as an alternate landing pad. Some clearing of vegetation may be required in order to fly heavy external loads from the concrete helipad. This may include removing sea grapes from the perimeter of the helipad. It is expected this could be completed in several hours by the Air Ops team with a small chain saw, a

hand saw, a machete and some large sheers. If necessary this would be completed during the allotted contingency time. The baiting pilot was consulted and stated that vegetation removal is not likely to be necessary, a final assessment will be made by the pilot and Air Operations Supervisor upon arrival on Desecheo. FWS will be consulted prior to proceeding with vegetation removal. Additionally, two fire extinguishers and a helicopter crash kit will be stored at the Bait Loading Site during all helicopter operations The Bait Loading Site will be managed by the Load Site Controller during external load operations, who reports to the Operations Section Chief on the mainland.

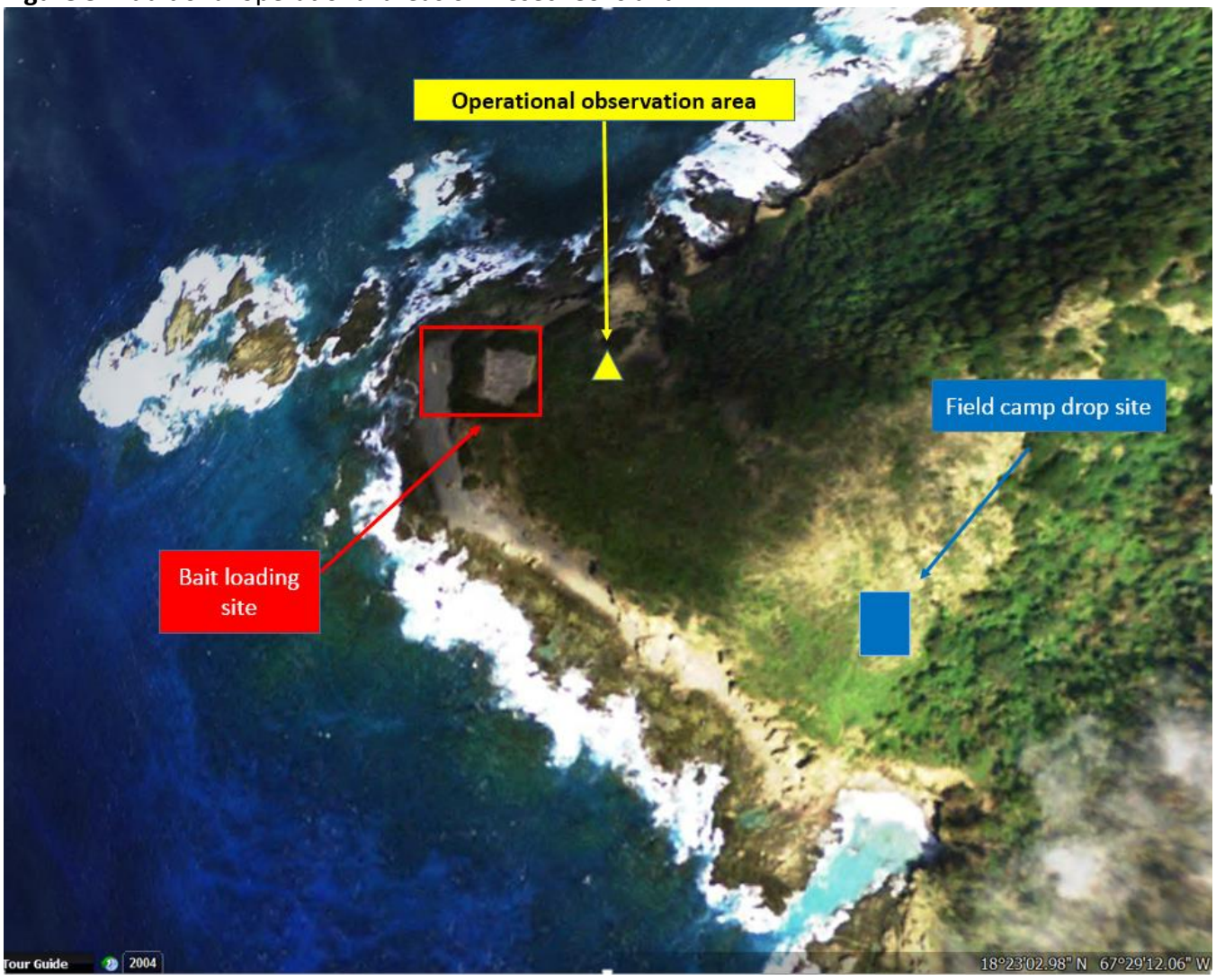
Figure 4. Bait loading site layout on Desecheo Island



Field Camp drop site

Some external loads will be flown to field camps located at the base of the West Valley on Desecheo. A clear grass area has been used for delivering loads in prior aerial operations on Desecheo Island and will be assessed for hazards prior to the operation. The Load Site controller will confirm the location with the pilot and clearly mark the site with flagging prior to external load operation (Figure 4). It is anticipated that the same drop site used in 2012 will be used again.

Figure 5. Additional operational areas on Desecheo Island.



Aerial Operations Command Structure

The command structure of personnel for the external load operation is shown **Appendix H: External Load Operational Position Descriptions and Responsibilities**. The Air Ops Team oversees and conducts all helicopter operations associated with external load and baiting activities. The term Air Ops team includes all personnel directly involved in the air operations, the air ops team will change depending on the nature of the operation (e.g. external loads and aerial baiting).

Flight Time estimates

For planning purposes the schedules in this plan are based on flight and time estimates from the staging site at the Aguadilla airport as the worst case scenario for loading operations and the PREPA facility in Rincon as a best

case scenario. Flight time schedules will be adjusted as appropriate for the confirmed staging site. The distance between Desecheo and Aguadilla Airport is 40 km. Based on a ferry speed of 60 kt with a 400 kg load out and a speed of 70 kt on an empty return it is anticipated that approximately 1.5 loads can be flown per helicopter hour (Table 1.) Each roundtrip flight will require the helicopter to refuel.

Table 1. Ferry time per round trip from Aguadilla to Desecheo and from Rincon to Desecheo **(this table will be updated once the Staging Site has been confirmed)**

Approach	***Ferry Distance (km)***	***Ferry Speed (kt)***	***Ferry Time***
Aguadilla to Desecheo (400 kg load)	40	60	22 min
Desecheo to Aguadilla (empty)	40	70	18 min
Round Trip Aguadilla- Desecheo	80		**40 min**
Rincon to Desecheo (400 kg load)	20	60	6 min
Desecheo to Rincon (empty)	20	70	12 min
Round Trip Rincon - Desecheo	40		**20 min**

The anticipated number of flights hours required to complete both the external loads and baiting operations is outlined in Table 2. There will be 12 hours of light between sunrise and sunset in Puerto Rico during the operation; for estimating the number of days required to complete external load operations a conservative 9 hours of flyable time per day has been used.

Table 2. Anticipated time estimates for the external load operations. Flight time is the number of helicopter hours required based on 1.5 loads per hour of flight time from the Aguadilla Loading Site, labeled here as BQN. Anticipated time estimates from the PREPA Bonus Site in Rincon. Operational time is the amount of flight time plus refuel time and time for hook up and unhook time required. Allocated time is the number of hours allocated based on the four days allotted in the operational schedule for external load operations, assuming 9 hours of flyable time per day. Contingency operational time refers to the number of additional hours allowed for external load operations within the timeline. A minimum of one operational day of contingency time has been allocated for each external load operation. Demobilization refers to flying loads from Desecheo (the Bait Loading Site) to the Staging Site.. Totals are rounded to the nearest 0.5 hour.

Flight	***Flight Time (hrs)***	***Operational Time (hrs) including flight time***	***Contingency Operational Time (hrs)***	***Total Allocated Time (hrs)***	**Total Allocated Days**
External Load Operation #1: Monitoring Equipment (6 loads) *Out to Island- Loads to Field Camp Site* 1 Personnel flight- External Load Team (4) to Helipad at start 1 load of 2 – 55 gal drums of water 1 load of 2- 55 gal drums of water 3 loads of camp equipment and supplies	BQN 3.5	BQN 4.5	BQN 4.5	BQN 9	BQN 1
	Rincon 1.5	Rincon 2	Rincon 5.5	Rincon 9	Rincon 1

External Load Operation #1 (21 loads) *Out to Island- Bait Loading Site* 1 load of 2 – 55 gal drums of fuel 1 load of 1 – 55 gal drum fuel and eqpt 1 load of load site equipment and PPE 17 loads of bait at 318 kg/load (5,406 kg total) 1 load of spreader bucket *Backload from Island* 1 – Personnel flight- external load team	BQN 13.5	BQN 18	BQN 9	BQN 27	BQN 3
	Rincon 7	Rincon 9	Rincon 9	Rincon 18	Rincon 2
External Load Operation #2 (22 loads) *Out to Island* 1 Personnel - External Load Team (4) at start 1 load of 2 - 55 gal drums of fuel 1 load of 1 - 55 gal drums of fuel 1 load of 2 - 55 gal drums of water 1 load of 1 - 55 gal drums of water 1 loads of camp equipment and supplies. 17 loads of bait at 318 kg/load (5,406 kg total) 1 Baiting Operation Team (4 pax) at end *Backload from Island* (use instead of empty returns) 3 loads empty pods (6 pods per load) 1 load empty water and, fuel drums and trash	BQN 15	BQN 20	BQN 16	BQN 36	BQN 4
	Rincon 7.5	Rincon 10	Rincon 17	Rincon 27	Rincon 2
Demobilization (9 loads) *Desecheo to Staging Site* 3 loads of empty pods 3 loads camp equipment and supplies 1 load site equipment and PPE 1 load spreader bucket 1 personnel External Load Team (4 pax) at end	BQN 6	BQN 9	BQN 9	BQN 18	BQN 2
	Rincon 3	Rincon 4	Rincon 14	Rincon 18	Rincon 2
Total (BQN)	**38**	**54**	**38.5**	**90**	**10**
Total (Rincon)	**19**	**25**	**45.5**	**72**	**7**

Fuel estimates

Helicopter Fuel (Jet A1) will be provided as requested per contract from Petro West based out of Puerto Rico. Petro West Supplies fuel to the Aguadilla airport and has agreed to deliver fuel in approved DOT HAZMAT 55 gallon drums to the staging site. Based on a fuel consumption rate of 110 lts/hr it is anticipated the following amount of fuel will be needed:

Table 3a.Helicopter Fuel required for operations. Fuel listed here is based on the worst case scenario of the southern site at the Aguadilla airport as the staging site.

Operation	***Time (hr)***	***Fuel (l)***	***# of 205 l drums***	***To be held***
Monitoring Equipment	3.5	385	2	Staging site
External Loads #1	13.5	1485	8	Staging site
Baiting Operation #1	3.75	412.5	3	On island – 1 operation
External Loads #2	15	1650	9	Staging site
Baiting Operation #2	3.75	412.5	3	On island 2 operation
Demobilization	6	660	4	Staging site
Contingency	5	550	3	Staging site
Total	**50.5**	**5555**	**31**	**Staging site 25 On island 6**

Table 3b. Fuel required for operations. Fuel listed here is based on the PREPA BONUS site in Rincon

Operation	***Time (hr)***	***Fuel (l)***	***# of 205 l drums***	***To be held***
Monitoring Equipment	1.5	1.65	1	Staging site
External Loads #1	7	770	4	Staging site
Baiting Operation #1	3.75	412.5	3	On island – 1 operation
External Loads #2	7.5	825	5	Staging site
Baiting Operation #2	3.75	412.5	3	On island 2 operation
Demobilization	3	330	2	Staging site
Contingency	5	550	3	Staging site
Total	**50.5**	**3301.65**	**21**	**Staging site 15 On island 6**

Spreader Bucket Fuel

How much required- / containers.

Air Operations Communications

Communication between pilot and ground crew will be via Air Band radio and structured to reduce the amount of traffic from non-essential personnel. All team members will be briefed on radio use and the schedule of radio

frequencies prior to the start of operations. See **Appendix G: Desecheo Radio Communications Plan** for more detail on communications related to Air Ops including frequencies

Weather forecasts

The NOAA-National Weather Service (NWS) will be utilized as the source for weather predictions. The primary means of acquiring forecast information will be through the following web pages:

- http://www.srh.noaa.gov/sju/
- http://www.srh.noaa.gov/sju/?n=aviation01
- http://www.srh.noaa.gov/sju/?n=marine01

Local weather and sea conditions can also be accessed on the appropriate NOAA Weather VHF radio channel (frequency 162.550)

Point Forecast products are readily available for the project area, providing detailed condition forecasting, in addition to marine and aviation forecast products. The Operations Section Chief is responsible for receiving daily weather forecasts and communicating these to the Incident Commander (IC), and Operations Advisory Group. Weather forecasts will be assessed by the Operations Section Chief and pilot the night before operations then again the day of operations.

Rapidly changing weather conditions are expected on Desecheo Island and at the staging site, the pilot will make visual assessments of weather conditions and have the authority to put operations on standby as necessary.

Data for tides and currents will be used to assess boat landing opportunities on Desecheo.

Aguadilla, Station 9759412
http://tidesandcurrents.noaa.gov/geo.shtml?location=9759412

Mayaguez, Station 9759394
http://tidesandcurrents.noaa.gov/geo.shtml?location=9759394

Mona Island, Station 9759938
http://tidesandcurrents.noaa.gov/geo.shtml?location=9759938

Flight Tracking and Flight Following

A Delorme Inreach portable flight tracker will be installed in the aircraft throughout the operation. This tracking system allows a remote user to track flight through online access. The Off-Island support person will be responsible for tracking flights during aerial baiting operation. The Operations Section Chief will be responsible for tracking flights during the external load operation. Pathfinder Aviation is responsible for installing and activating the flight tracker and associated software. All software and login information will be made available prior to the operational team prior any aerial operation, this will be confirmed during operational briefings.

Flight following will be done during all helicopter operations. The OSC will be responsible for flight following during the external load operations; the Air Operations Supervisor will be responsible for flight flowing during the aerial batinging operations. Details of flight following can be found in **APPENDIX L: Helicopter Safety**

Aerial Operations

Daily schedule of events

Pilot preparation:

The Operations Advisory Group will discuss the daily flight plan the night before flying, in order to maximize all optimal weather conditions for aerial operations. The daily flight plan will be based on several criteria, including: the predicted weather forecast and the current stage of the operational timeline.

The pilot will also complete a weight and balance calculation prior to initiating operations. Once initiated, the pilot may use a pre-calculated mission weight and balance if the information is current and it is reviewed prior to departure. The pilot will also complete a load calculation before the first flight of each day. The load calculation is valid for flights between similar points of elevation, temperature, and fuel loads. The pilot will communicate appropriate external load weight limits to Air Operations Supervisor each day before operations.

Air Ops Team preparation:

Daily preparations will include:

- Team briefing of weather forecast
- Team briefing of action plan for the day
- Review of task requirements of individual team members/ task allocation
- Communications check (radios and sat phone, coms b/t Desecheo and Rincon/Aguadilla)
- Air Ops Safety Briefing
- Confirm location of key components of Operational sites (landing pad/refuel site, operational loading site, secondary landing pad)

Once preparations are complete the Air Ops team and helicopter will be positioned to begin operations. If weather conditions at that point are not suitable for flying the team will stand-by, awaiting a briefing to inform the team of the updated action plan and assigned tasks for the day. All team members will be on stand-by during days of no flying in the event weather conditions become suitable for flying.

Air Ops Personnel Transport

The safe transport of personnel in helicopters is of the highest priority. Utilizing standard procedures will ensure we meet the objective of transporting personnel safely and efficiently. The Helicopter will only be used to transport personnel critical to the external and bait loading operation ie four people for both the staging operations and for each baiting operation. Personnel transport will primarily be based from the staging site however there may be some instances of transport to/from the Aguadilla airport.

- All Air Ops personnel will receive a safety and mission briefing prior to take-off.

- Only personnel essential to the external load operation and aerial baiting operation mission will be onboard the helicopter.

- DOI and DNER employees will not be transported by helicopter, except in an emergency.
- During Air Ops personnel transport operations, load calculations and standards shall be adhered to.

As a general rule, only the pilot shall be onboard helicopters when conducting external load operations. The pilot has final authority regarding carrying an aircrew member during external load operations and when applying bait from the bait spreader bucket.

External Load Procedures – staging supplies on and off Desecheo

The external load operations team will consist of two teams:

Bait Loading Site:

(1) Load Site Controller
(2) Biosecurity Officer/Loading Specialist
(3) Loading Specialist
(4) Loading Specialist
(5) Safety Observer

Staging Site:

(1) Operations Section Chief
(2) Staging Site Controller
(3) Biosecurity Officer/Loading Specialist
(4) Loading Specialist
(5) Forklift driver
(6) Helicopter Mechanic
(7) Safety Observer

When transporting full bait pods to Desecheo island two loading specialists will be available to prepare and hook up loads at the staging site and three loading specialists will be available on the island to receive loads. The loading specialists will be responsible for rigging, hooking, and receiving loads for transport between LZs. Each operational site will have a Site Controller responsible for ensuring operations run as planned and in a safe manner. Prior to beginning operations for the day, the site controller will oversee that their site is properly prepared for operations, including ensuring all required safety equipment is in place. The Site Controller at each site?? (or is it the site controllers and the OSC briefing everyone at the staging site before the on island team flys over??) will brief the rest of the operational team on the protocols for the sites before beginning operations. A manifest will be created outlining the sequence of loads their weights and destination prior to operations, all operational personnel will receive a copy of the manifest. Prior to initiating external load operations the site controller at the Loading Site on Desecheo Island will contact (via radio or satellite phone) the Operations Section Chief at the staging to site to confirm that the island is prepared to receive loads. During external load operations there will be loads dropped at the west valley camp for the monitoring team prior to initiating loads at the bait loading site. During operations, after delivering loads to the west valley camp drop site, the Operations Section Chief will hold further flights from the staging site until the site controller at the bait loading site has confirmed (with satellite phone or radio) that the bait loading site is ready to receive loads.

Supplies and Equipment:

Supplies and equipment will be packaged and rigged for transport in a safe and appropriate fashion. Rigging may include bulk bags, cargo nets, barrel slings, swivels or lifting strops. All rigging will be inspected for signs of damage prior to use.. During external load operations empty nets, strops or other rigging will be slung back to the staging site on return flights as needed to maximize efficiency. Some cargo will be transported from the staging site to Desecheo Island's West Valley camp site, the Site Controller at the bait loading site will ensure that the drop-site at the camp site is cleared of hazards, ensure that only designated loading specialists are within the drop-site, and will receive the cargo. Additional cargo operations to resupply field teams will be conducted as needed, coordinating with previously scheduled flights if possible.

Helicopter Fuel

Jet-A1 will be transported in 55 gallon drums with DOT HAZMAT caps using cargo nets. No more than two drums will be transported at a time. Helicopter fuel will be delivered to the staging site refer helicopter fuel storage handing above and transported to the designated refueling site on Desecheo Island.

Preparing bait pods for flying

Bait pods will be stored at the staging site in shipping containers (one container per staging/baiting operation) ; the pods will be stacked three high in the shipping container but cannot be removed in the three pod stack requiring a fork lift to remove them in the following sequence:

1) Use a fork lift to maneuver a stack of pods towards the door of the container
2) Remove the top pod from the container
3) Remove the two-stack of pods from the container
4) Transport pods to the staging area and arrange (unstacked) as specified by the Air Operations Supervisor/Site controller

The bait pods will be individually wrapped in plastic. It will be the responsibility of the staging site controller to ensure that the plastic has been removed from the pods and placed in a secured container or bin well away from the loading zone where there will be no risk of becoming debris swept up in the rotor wash of the helicopter. Each pod will be inspected as it is unwrapped to ensure it does not pose an unacceptable biosecurity risk. This is the responsibility of the staging site Biosecurity officer. In the event an unacceptable risk is identified that pod will not be transferred until the risk is managed appropriately.

Rigging External Bait Loads

When rigging the pods for external loads, two 6 meter strops will be used. The long line will either be 25 feet or 50 feet, depending on the preference of the pilot.

1) The strops will be threaded in parallel through the fork lift slots on the pod.
2) The pod will be centered on the strops.
3) The eyelets of the strops will be connected with a D-shackle; if not incorporated into long line, a swivel will be use to connect the load to the cargo hook.
4) One loading specialist will be delegated the task of hooking up the shackle/ swivel to the hook on the helicopter long line.
5) As the helicopter lifts the pod two loading technicians, one on each side, will ensure that weight is appropriately distributed between the two strops.

Receiving External Bait Pod Loads

Three loading specialists will be available to receive external bait pod loads.

1) Site Controller will confirm the location where the external load will be placed with the Helicopter Pilot through hand signals and radio communication.
2) Three loading specialists will receive the load and maneuver it into place if required:
    a. One loading specialist will be designated to unhook the strops and hold the hook clear of the load
    a. One loading specialist will be designated to hook unused strops connected with a D-shackle and a swivel to the hook to be ferried back to the staging site and used on another pod.
    b. One loading specialist will be designated to remove the strops from the received load and ensure that all personnel are clear of strops as the helicopter departs.
3) The loading site biosecurity officer will inspect the load for potential biosecurity risks.
4) The loading specialists will use the pallet jack to move the bait pods, if needed.

Biosecurity

A biosecurity officer has been identified at the load site as well as the staging site. This person is responsible for ensuring biosecurity of every load. All cargo, nets, strops, pods and strops will be checked and cleared before leaving the staging site and immediately upon arrival to Desecheo Island. If a biosecurity risk is identified the operations will be put on hold until the issue has been managed.

Flight Log

A log of all flight activity during external loads will be kept by the Operations Section Chief stationed at the staging site. Flight log record keeping will include significant aviation activities such as: time helicopter begins flying, arrival/departure times, refueling events, and all engine shut downs. In addition, all passengers will be manifested prior to transport utilizing the *Passenger Manifest* form. A copy of the log and manifests will be kept at the point of departure. Should the Operations Section Chief be unable to document flight activities, another designated person will maintain the flight log, this person would be selected at the time of operations based on who is present, willing and able.

Refueling

During external load operations helicopter refueling will occur in the designated fueling area at the staging site. Fueling will be carried out from 55 gal drums. An electric pump that operates off an external battery will be the primary refueling system, a manual pump will be on hand as a backup. Only qualified and authorized personnel will be present at the refueling site during helicopter refuels. One member of the staging site team will be tending a fire extinguisher at a designated site 50 feet from the refueling operation

Only the pilot or engineer are to undertake refueling operations. The helicopter does not need to be shut down during refuels for the external load operation. A hot fueling SOP will be followed that outlines accepted safety protocols, this SOP can be found in: Appendix L: Helicopter Safety.

Logistics Sequence and Timeline

The following will be used to guide the sequencing of events associated with Desecheo Rat eradication helicopter operations. Final details of aerial operations schedules and personnel schedules and transportation will be made available prior to operational briefings.

Stage 1: Preparation prior to initiating operational activities

- Installation of TracMap and associated equipment (Shreveport, Louisiana)
- Helicopter flies from place of hire (Louisiana) to Aguadilla/Rincon
- Systems check (Aguadilla Airport)
- Bucket Calibration (Aguadilla Airport)
- Helicopter stored at the Copeca hanger at Aguadilla Airport until operations begin at staging site
- Bait and supplies transported to staging site
- Fuel drums arrives at staging site
- Fork lift arrives at staging site

Stage 2: External load operation #1

- Helicopter flies from Aguadilla Airport to staging site
- Helicopter transport of aerial operations personnel to Desecheo Island
- Assessment of loading site including bait pod storage, bait loading platform, refueling site and alternative landing pad with pilot and Air Operations Supervisor
- Staging site and bait loading site are prepped for external load operation
- Helicopter transports external loads from staging site to bait loading site
    - 2-4 operational days (helicopter stored each night at the staging site)
- Helicopter is refueled from drums at staging site

Stage 3: Bait Application #1

- Baiting personnel transported to Desecheo ~~i~~Island and helicopter prepared for aerial baiting on the day prior to Application
- Helicopter stored on Desecheo Island overnight beginning the night prior to the first day of baiting, baiting team stays on Desecheo Island overnight
- Bait applied to Desecheo Island
    - approximately 3.75 hours flight time for baiting (should be completed in one day)
- Refueli~~n~~g conducted at bait loading site by helicopter engineer from drums
- Operational debrief on island if time allows
- Air Ops Personnel transported from Desecheo Island to staging site
- Helicopter returns to Aguadilla Airport

Stage 4: Standby

- Wait period between applications
- Helicopter standing by at Aguadilla Airport

Stage 5: External Load Operation #2

- Helicopter flies from Aguadilla Airport to staging site
- Contracted fuel truck arrives at staging site
- Helicopter transport of aerial operations personnel to Desecheo Island
- Staging site and bait loading site are prepped for external load operation
- Helicopter transports external loads from staging site to bait loading site
    - 2-4 operational days (stored each night at the staging site)
- Some (3) back loads of empty pods, drums and trash will be flown (returned) form the island to the staging site.
- Helicopter is refueled from drums at staging site

Stage 6: Bait Application #2

- Baiting personnel transported to Desecheo island and helicopter prepared for aerial baiting
- Bait applied to Desecheo Island
    - Approximately 3.75 hours flight time for baiting
- Refueling conducted at bait loading site by helicopter contractor from drums
- Operational debrief on island if time allows
- Air Ops Personnel transported from Desecheo Island to staging site
- Helicopter stored at staging site standing by for demobilization operation

Stage 7: External Load Operation # 3 (demobilization)

- Transport of Air Ops personnel from Desecheo to staging site
- Staging site is prepared for external load operations. Cargo loads are built on Desecheo and load manifest is communicated to pilot and site controller at the staging site (receiving end).
    - If any loads are to be picked up at the camp location near the west valley this is clearly communicated to pilot and loading team
- Helicopter transports external loads from Desecheo Island to staging site
    - Estimated one day of external load operations
- Refueling conducted at staging site by contractor from drums
- Personnel transported from bait loading site to staging site

Stage 8: Project Debrief

- Project debrief (TBD location)

Alternative Staging Sites

Southern site at Aguadilla Airport

The southern site at the Aguadilla airport is located on a disused airfield south of the active Aguadilla airport. Permission to use the southern site has been obtained from the Port Authority and the Air traffic control. Additionally, the proposed flight path over the road PR107 and the Borinquen Golf Course have been acknowledged to the FAA0-FSDO (Federal Aviation Administration-Flight Standards District Office) office in San Juan. Additionally it will be necessary to file a hold harmless agreement with the Aguadilla Airport prior to any aviation operation. As a safety precaution it is recommended that a professional security company be hired for some or all of the operation.

Figure 5: Proposed layout of the staging site at the Aguadilla airport.

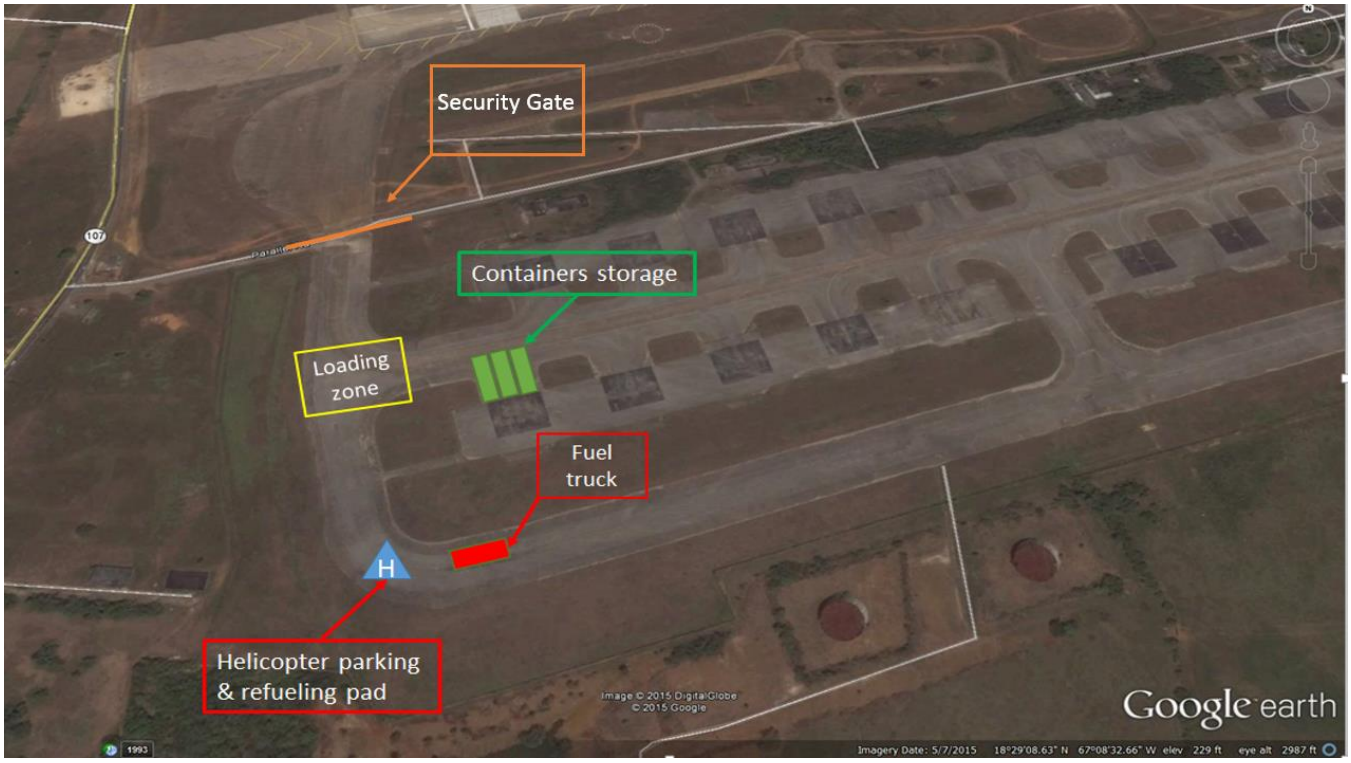


Figure 6: Proposed flight path for external load and passenger transport from the southern site at the Aguadilla airport. This flight path has been cleared with the ATC and Port Authority at the Aguadilla airport, the FAA-FSDO office in Puerto Rico has also been notified of this proposed flight path.

FURA staging site, Añasco

FURA has agreed to the potential use of their facilities for aerial operations. Some modifications may need to be made to the FURA site to be utilized as the staging site. These include: vegetation removal and/or laying out materials to create a solid loading site on the beach. FURA has confirmed that they can arrange to store drums of Jet A-1 as needed during the operation. Additionally some branch removal may be done on trees surrounding the existing helipad. FURA has been consulted on the use of this site and will accommodate modifications as needed.

Figure 7. Proposed layout of Añasco FURA staging site.

Figure 8. Proposed flight path for external loads and personnel flights from the FURA site to Desecheo Island. Based on a site visit and additional follow up communication with the pilot(s); the flight path approach and departure at the FURA site will not require any overflight of buildings or public areas.