	Activities	Responsibilities	Notes	Records
	- Monitor health status of animal and authorize discharge as applicable. - Animal is sent back to original cage or in hospital discharge cage depending on duration of hospitalization. - Complete Animal Treatment Form and Hospital Record Book. - Complete Animal Transfer Voucher and submit to Food Storekeeper and Computer Data Operator to update Animal History Report.	Vet Staff/Animal Technician	--	QR83-01 QR83-03 QR83-26
	- Conduct weekly visits to hospital to ensure that animal welfare issues are being considered. - Complete the form weekly inspection of hospital and conditioning buildings and submit to General Manager, Accounts & Planning Manager, Vet Manager and Vet Staff.	Animal Welfare Officer.	- Discuss findings during Vet meetings.	QR83-06 QR5-05
	- Every morning and before leaving work, conduct careful inspection of all animals in hospital. - Any signs of diarrhoea, loose stool or bloodstain shall be reported to Vet Staff. - Info recorded in relevant Animal Treatment Form and Hospital Record Book.	Vet Staff / Designated Animal Tech	- Watch closely for any signs of pain (animal crouching in a corner), haemorrhages, any foul smelling/ purulent discharges from wounds, weakness, abnormal behaviour or even broken sutures and immediately notify Vet Staff and / or Vet Manager.	QR83-01 QR83-03
	- Discuss major issues of hospitalized cases during Vet meetings. - Complete Daily Occurrence Report and email to General Manager, Accounts & Planning Manager, Vet Manager, Animal Welfare Officer, and all Vet Staff.	Vet Staff		QR83-05
		Vet Manager / Senior Vet Officer (s).	- Use of controlled drugs reviewed.	QR74-26
	- Ensure that animals in hospital receive appropriate food.	Food Storekeeper/ Animal Tech/ Site Supervisor/Vet Staff	- Follow instructions of Vet staff in case of dietary restrictions.	--

	Activities	Responsibilities	Notes	Records
	– Report any deaths to the Vet staff for necropsy. – Proceed as per WI83-04. Euthanasia, Post Mortem and Disposal of Animal Carcasses. – Record death in relevant Animal Treatment Form & Hospital Record Book.	Designated Animal Technician	– Must be done on same day.	QR83-23 QR83-01 QR83-03
	– Board to be updated accordingly.	Designated Animal Technician Vet Staff	--	--
	– Maintain all instruments under clean conditions in designated containers. – After each use, rinse, dry and store properly. – Sterilize before use.	Vet Staff	--	--
3	**Blood laboratory (BCM GW1)** – Prepare list of items required for blood laboratory and indicate minimum stock. Submit to Medical Store Officer.	Senior Vet Officers	– Include equipment and consumables.	QR71-10
	– Ensure blood laboratory is always maintained in a clean and tidy manner. Disinfection should be done after every working session.	Medical Store Officer	– Follow instructions TAB64-01	QR64-12 TAB64-01
	– Ensure availability of required materials in blood laboratory at all times. – Liaise with Operations Manager for any purchasing needs. – Verify items for expiry dates.	Medical Store Officer	– Follow procedures for purchasing QP704-01, WI74-02.	WI74-02 QP704-01 QR71-10
	– Liaise with Mechanical & Electrical Manager in case of any breakdown of equipment.	Medical Store Officer Mechanical & Electrical Manager	– Ensure preventive maintenance scheduled for equipment is adhered to.	QP603-02 QP706
	– Ensure adequate working conditions for operating the blood laboratory.	Medical Store Officer	– Temperature: 31°C max. – Humidity: 80% max. – Equipment must never be exposed to direct sunlight.	--

	Activities	Responsibilities	Notes	Records
	– Receipt of blood samples along with request for testing. – Submitted by vet staff/ Health Officers within hours of sampling. – Must be brought in cool box if coming from site other than BCPR.	Medical Store Officer Vet Staff/ Health Officers	--	QR83-13
	– Verification of samples. – Request Vet Staff/Health Officers to bring new samples if necessary and complete a Process Nonconformity Record on IAMS. – Record number of samples and tattoo numbers/name of employees in Blood Tests Record Book.	Medical Store Officer	– Ensure each sample has the tattoo number of animal / name of employee clearly identified.	QR75-26
	– Print report and submit to Vet Manager and Senior Vet Officers together with Haematology /Biochemistry Request Voucher. A copy of report to be given to concerned Vet Staff. – Report for employees submitted to Company Doctor/ Health Officer. – Ensure identification of animals/employees is maintained.	Medical Store Officer		QR75-16
	– Centrifuge sample for serum/ plasma if requested. – Ensure proper use of equipment. – Ensure adequacy of operating conditions.	Medical Store Officer	--	--
	Storing of serum/plasma. – Stored in special transport tubes in a freezer. – Each tube to indicate: ▪ I.D of animal if applicable ▪ Date of collection ▪ Volume ▪ Sex ▪ Any other information requested by customer	Medical Store Officer	– Waste is incinerated as per WI64-01.	WI64-01
	– Stock of serum/plasma updated.	Medical Store Officer	– Ensure their proper Storage. – Temperature : below -10°C	QR75-17

Records

Record ref	Title
QR5-05	Minutes of Vet Meeting
QR63-16	Medical Materials Stock Request
QR64-12	Cleaning and disinfection records
QR71-01	Roster for Vet Staff
QR71-09	Hospital Item List
QR71-10	Items for Blood Laboratory
QR71-13	List of medical materials due to expire
QR71-17	Autoclave Logbook
QR74-25	Monitoring Of Controlled Substances
QR74-26	Report on use of Controlled drugs
QR75-16 (A-C)	Blood Count Report
QR75-17	Stock of Serum
QR75-26	Blood Tests Record Book
QR83-01	Animal Treatment Form
QR83-03	Hospital Record Book
QR83-05	Fortnightly Hospital Report
QR83-06	Weekly Inspection of Hospital and Conditioning Building
QR83-13	Haematology/Biochemistry Request Voucher
QR83-23	Necropsy Request Form
QR83-26	Animal Transfer Voucher

Animal Welfare issues

- Animal Welfare Officer conducts weekly visits to all hospitals and reports to General Manager, Accounts & Planning Manager, Vet Manager and all Vet Staff.
- Duration of stay in hospital kept to minimum.
- Minimal handling of animals.
- Unnecessary hospitalization must be avoided.
- Pair up or group animals where possible.
- Time for hospital rounds minimized.
- Hospitals must be well aerated. Avoid wind drafts.
- No direct sunlight to hospital cages.
- Lighting and temperature must be adequate.
- Hospital to remain clean at all times.
- Vet Staff to equip themselves with necessary working materials <u>before</u> bringing animals to surgery/treatment rooms.
- As much as possible place animals in upper cages and use tunnel.

1. Scope

The purpose of this section is to define the procedures for the management of the Medical Store of BCPR.

2. Responsibilities

2.1 The Vet Manager is responsible for the identification of medical materials required and to establish a minimum stock.

2.2 The Medical Store Officer is responsible for the effective implementation of this procedure.

3. Working Protocol

4. Policies

4.1 A minimum stock of fast moving medical materials shall be available at all times.

4.2 Deliveries of medical materials scheduled from 07h00 to 10h00 daily.

4.3 BCPR monitors the use of controlled drugs as per the Pharmacy Act Regulation by DIA.

7. Procedure

	Activities	Notes	Responsibilities	Records
1	Establish list of medical materials and define minimum stock and reorder level.	– Update list as required and review annually. – Submit copy to Medical Store Officer – Shelf life of goods must be considered. – Highlight controlled drugs.	Vet Manager Medical Store Officer	QR71-11
2	Maintain list of medical materials required for each site.	– Must be approved by Vet Manager. – List to include instruments as well.	Medical Store Officer	QR71-09
3	Allocate unique code for each material.	– Make entries into computer system.	Medical Store Officer	--
4	Manage minimum stock items on a daily basis.	– Initiate purchasing as required. – Stock take done on a fortnightly basis.	Medical Store Officer	QP704-01 QR71-11
5	Upon receipt of materials, issue Goods Received Note and update stock.	– Verify for adequacy. – Complete Incoming Medical Material Record. – Allocate unique identification. – Record expiry date in computer software. – Liaise with Vet Manager whenever necessary.	Medical Store Officer	QR74-07
6	Storage of materials.	– Store in designated area. – Controlled drugs kept under lock. – Store to be neat and tidy. – Follow instructions for appropriate storage. – Medical store under pest control. – Medical store kept locked in the absence of Medical Store Officer.	Medical Store Officer	WI64-06
7	Maintain information leaflet for medical materials.	– Ensure copy available for all new items. – Disseminate amongst Vet Staff. – Use of new products discussed during Vet meeting.	Medical Store Officer	Technical Data file

	Activities	Notes	Responsibilities	Records
8	Vet Staff to submit requirements on a weekly basis for each site.	– Empty containers/vials must be returned. – In case of controlled drugs Medical Store Officer shall ensure that empty containers/ vials are returned along with QR74-25 Monitoring of controlled substances. – Vet staff to exercise control and ensure that a maximum of two containers/vials per controlled drug is available at any given point of time on each site. Any exceptions must be justified and shall be applicable for a limited time period. – Request Form submitted at least one day in advance.	Vet Staff	QR74-25 QR63-16A QR63-16B
9	Issue of materials.	– Seek clarification/approval from Vet Manager if necessary. – BCMPR Goods Issue Note signed by receiving officer. – Issue made in line with expiry dates of goods. – Follow time schedule for delivery.	Medical Store Officer	QR74-14
10	Update stock.	– Update computer software on daily basis.	Medical Store Officer	QR74-14
11	Medical materials control.	– Ensure empty containers/vials have been returned. – Dispose of according to WI64-01. – Monitor the use / issue of controlled drugs.	Medical Store Officer	WI64-01 QR74-25
12	Emergency issues in absence of Medical Store Officer.	– Only by designated and authorized Vet staff. – Inform Medical Store Officer without undue delay.	Designated Vet Staff	--

	Activities	Notes	Responsibilities	Records
13	Compile monthly report on consumption of medical materials at each site.	– Submit on a three monthly basis to: • Operations Manager • Accounts & Planning Manager • Vet Manager – Separate report (QR74-26) on the issue of controlled drugs.	Medical Store Officer	QR74-18 QR74-26
14	Review list of medical materials due to expire within 90 days.	– Done monthly. – List submitted to Vet Manager/ Accounts & Planning Manager.	Medical Store Officer	QR71-13
15	Report on use of medical materials during Vet meetings.	Issues to include: – List of materials due to expire.	Medical Store Officer	QR71-13 QR5-05 QR74-17
16	Physical inventory of medical materials done annually.	– Print computer stock list. – Compare physical stock against computer stock. – Highlight major discrepancies. – Submit report to General Manager. – A non conformity is filled on IAMS in case of major discrepancies, emphasis laid on controlled drugs.	Procurement & Stores Manager / Medical Store Officer	QR75-06A
17	Review of findings of inventory during Management Review meetings.	–	Procurement & Stores Manager	QR5-05

Records

Record ref	Title
--	Computer Software for Medical Materials Management
QR5-05	Minutes of Meeting
QR63-16A QR63-16B	Medical Materials Stock Request
QR71-09	Hospital Item List/Site
QR71-11	Medical Materials Weekly Stock/Requirements
QR71-13	List of Medical Materials due to expire
QR74-07	Goods Received Note
QR74-14	BCMPR Issue Note
QR74-17	Use of Medical Materials/Site
QR74-18	Monthly Consumption of Medical Material/Site
QR74-25	Monitoring of controlled substances
QR74-26	Monthly report on Issue of Controlled drugs.
QR75-06A	Inventory Report

BIOCULTURE Puerto Rico PROCEDURE MANUAL

Section	**: QP702-02**	**Issue No.**	**: 1**
Title	**: Export of animals**	**Date of Issue**	**: 1st Sept 2009**
Compiled by	**: Vice -President**	**Approved by**	**: President**

1. **Scope**

The purpose of this section is to define the procedures for the export of animals in order to ensure that they reach our customers in optimal conditions.

2. **Responsibilities**

2.1 The Veterinarian is responsible to clear animals for export but seeks authority of Management if in doubt.

3. **Working Protocol**

4. Procedure

	Activities	Responsibilities	Notes
1	Receipt of confirmed order.	Facility Manager	– Ensure all order requirements will be fulfilled, otherwise inform customer.
2	Earmark animals and submit list to designated Staff.	Facility Manager/ Veterinarian	– Cater for additional animals.
3	Screening of animals.	Veterinarian	– Ensure animals earmarked are fit for export. – Liaise with Vice –President/Facility Manager for replacement animals.
4	Initiate administrative procedures for export.	Facility Manager/ Admin Secretary	– Use export document checklist. – Liaise with relevant authorities for permits. – Liaise with customer for relevant permits. – Issue "Instruction for dispatch of goods" to shipping agent for airline bookings. – Ensure availability of crates. – Open export file for specific order.
5	Advise customer upon confirmation of airline booking.	Admin Secretary	
6	Daily monitoring of animals of selected animals	Veterinarian	– Inform Facility Manager in case an animal is deemed un-exportable. – Complete the form for pre-export monitoring.
7	Final review of animals on the date of export	Veterinarian	– Liaise with Facility Manager to confirm departure date and time. – Non-conforming animals rejected.
8	Crating of animals	Veterinarian	– Follow work instructions WI75-13. – No. of animals going in crate and sex to be written on top as well as tattoo number of animal in each compartment indicated
9	Seal crates.	Veterinarian	– Affix crate export stickers. Submit export checklist to Facility Manager
10	Animals transferred to airport.	Veterinarian	– Follow work instructions WI75-05. – Complete airport access pass.
11	Prepare packing list and send to customer.	Admin Secretary	
12	Finalize list and send Animal History Reports to customer.	Admin Secretary	--

Records

Record ref	Title
--	Export file
QR72-02	Export Documentation Checklist
QR72-03	Export Checklist (Animals)
QR72-06	Export Notification List
QR72-07	Request for screening
QR75-12	Pre export monitoring
QR83-26	Animal Transfer Voucher

Animal Welfare Issues

1. Confirm flight departure time prior to crating animals.
2. Ensure that enough food and water is provided in crates.
3. All crates must be thoroughly inspected to ensure absence of any protruding nails/wires.
4. Ensure all required documents accompany the animals so as to avoid them being held unnecessarily at destination.

Bioculture PR - Hazards analysis and risk assessment

Hazards	Activities	Responsibility	Probability (likelihood)	Severity	Hazard Rating	Uniforms	Face mask	Boots	Vinyl gloves/Latex Gloves	Lab Coats	Helmets	Goggles	Face shields	Boots with top laces	Industrial shoes	Rubber gloves (black)	Rubber gloves (yellow)	Sterile gloves	Shark mesh gloves	Long arm gloves	Standard raincoat	Raincoat (p/cleaner)	Leather gloves	Welder face shield	Ear muffs	Apron (leather)	Apron (plastic)	Full face mask	PAPR	Disposable Lab coat	Disposable head cap	Clogg
	Assisting Vet staff in surgery	AH	3	2	6	✓	✓	✓	✓	✓								✓												✓		
	Tattooing	AH	2	2	4	✓	✓	✓	✓	✓																						
	Assisting Vet staff in Necropsy	AH	2	2	4	✓	✓	✓	✓																					✓	✓	
	X-Ray personnel		3	4	12	✓																										
	Food store personnel	FSK	2	3	6	✓					✓	✓																				
	Chemical store personnel	SO	3	5	15	✓																										
	Caretaker				0	✓																										
	Pressure cleaning of cages	AC	3	4	12	✓	✓	✓			✓		✓			✓							✓									
	Laundry attendant	AC	2	2	4	✓																										
	Laboratory activities		2	2		✓																										
Scalpel cut	Animal technicians				0	✓																										
	Animal Technicians activities	AT	2	4	8	✓	✓	✓	✓																							
Exposure to chemicals	Animal technicians				0	✓																										
	Animal Technicians activities	AT	2	4	8	✓	✓	✓	✓	✓	✓		✓																			
	Hospital complex management	AT	2	4	8	✓	✓	✓	✓	✓																						
	Chemical & material stores	SO	3	5	15	✓																										
	Laboratory staff		2	4	8	✓																										
Exposure to zoonotic pathogens	Laboratoty staff	LA	3	4	12	✓																										
					0	✓																										
	Sweeping of cages	AC	2	3	6	✓	✓	✓			✓					✓																
	Pressure cleaning of cages	AC	2	3	6	✓	✓	✓			✓		✓			✓							✓									
	Removal of waste from sites.	AC	2	3	6	✓	✓	✓								✓																
	Truck helpers	TH	2	3	6	✓																										
	Incinerator operator	IO	2	3	6	✓																										
	Composting workers	AC	2	3	6	✓																										
					0	✓																										
Burns with autoclave, burner or incubator	Laboratory staff	LA	3	4	12	✓																										
	Welding & electrical		3	4	12	✓																										
	Incinerator operator	IO	2	4	8	✓																										
Electric shock	Laboratory staff	LA	1	5	5	✓																										
	Pressure cleaning of cages	AC	1	5	5	✓	✓	✓			✓		✓		✓						✓											
	Carpentry personnel	C	3	5	15	✓																										
	Welding & Electrical workers	W, E	4	5	20	✓																										
	Site supervisor	SS	2	5	10	✓																										
	Infrastructure personnel		4	5	20	✓																										
Fire	Laboratory	LA	1	5	5	✓																										
	Chemical store		2	5	10	✓																										
	Welding & electrical		3	5	15	✓																										
Cuts from broken glassware	Laboratory staffs	LA	2	2	4	✓																										
	Office Attendants		2	2	4	✓																										

Hazards	Activities	Responsibility	Probability (likelihood)	Severity	Hazard Rating	Uniforms	Face mask	Boots	Vinyl gloves/Latex Gloves	Lab Coats	Helmets	Goggles	Face shields	Boots with top laces	Industrial shoes	Rubber gloves (black)	Rubber gloves (yellow)	Sterile gloves	Shark mesh gloves	Long arm gloves	Standard raincoat	Raincoat (p/cleaner)	Leather gloves	Welder face shield	Ear muffs	Apron (leather)	Apron (plastic)	Full face mask	PAPR	Disposable Lab coat	Disposable head cap	Clogg
					0	✓																										
Exposure to Radiation	X-Ray personnel		2	5	10	✓																										
					0	✓																										
Collapse of pellets bags	Food store workers	FSK	1	2	2	✓																										
					0	✓																										
Falling from food silo	Food store workers	FSK	2	5	10	✓		✓			✓				✓																	
					0	✓																										
Injury with pressure cleaner	Food store workers	FSK	3	4	12	✓		✓					✓			✓						✓										
	Caretakers				0	✓																										
	Pressure cleaning of cages	AC	3	4	12	✓	✓	✓			✓		✓			✓						✓										
Scratches and bruises	Food store personnel	FSK	1	1	1	✓																										
	Chemical store personnel	FSK	2	2	4	✓																										
					0	✓																										
	Chopping of food for animals	AC	2	2	4	✓		✓									✓		✓								✓					
	Pressure cleaning of cages	AC	2	2	4	✓	✓	✓			✓					✓						✓	✓									
	Distribution of food to animals	AC	2	2	4	✓	✓	✓			✓						✓															
	Gardening	AC	2	2	4	✓		✓								✓							✓									
	Site supervisor	SS	2	2	4	✓																										
	welders and electricians	W, E	2	2	4	✓																										
	Carpenters	C	2	2	4	✓																										
	Truck helpers	TH	2	2	4	✓																										
	Composting personnel	AC	2	2	4	✓																										
	Incinerator operator	IO	2	2	4	✓																										
Injury with machete	Caretakers				0	✓																										
	Chopping of food for animals	AC	2	4	8	✓													✓								✓					
Falling from ladder	Welders and electricians	W, E	3	5	15	✓																										
	Animal Caretakers				0	✓																										
	Gardeners				0	✓																										
						✓																										
					0	✓																										
Arc welding injury	Welders and electricians	W,E	3	3	9	✓																										
					0	✓																										
Injury with portable electric tools	Welders and electricians	W, E	3	4	12	✓																										
Exposure to noise	Gardening	G	2	3	6	✓																										
					0	✓																										
Injury with branches or trees	Gardening	G	2	2	4	✓																										
Injury with bush cutter	Gardening	G	2	4	8	✓																										
Injury with planing machine	Crate building workers		3	5	15	✓																										
Injury with sawing machine	Crate building workers		3	5	15	✓																										
Injury with wood stapler	Crate building workers		3	4	12	✓																										
Injury with hammer	Crate building workers		3	2	6	✓																										

Hazards	Activities	Responsibility	Probability (likelihood)	Severity	Hazard Rating	Uniforms	Face mask	Boots	Vinyl gloves/Latex Gloves	Lab Coats	Helmets	Goggles	Face shields	Boots with top laces	Industrial shoes	Rubber gloves (black)	Rubber gloves (yellow)	Sterile gloves	Shark mesh gloves	Long arm gloves	Standard raincoat	Raincoat (p/cleaner)	Leather gloves	Welder face shield	Ear muffs	Apron (leather)	Apron (plastic)	Full face mask	PAPR	Disposable Lab coat	Disposable head cap	Clogg
	Transporting animals	AH	2	3	6	✓	✓	✓	✓	✓	✓					✓																
	Administration of substances	AT	1	1	1	✓																										
	Pressure cleaning of cages	AC	3	3	9	✓	✓	✓			✓					✓						✓	✓									
	Distribution of food to animals	AC	2	2	4	✓																										
Foreign matters or dust in eyes	Catching animals	AH	4	3	12	✓	✓	✓	✓	✓	✓	✓	✓																			
	Cleaning of cages	AC	3	3	9	✓	✓	✓			✓		✓										✓									
	Gardening	G	3	3	9	✓	✓	✓				✓				✓							✓									
	Welders and Electricians	MES, MEA MS, MO	3	3	9	✓																										
	Crate building workers		3	3	9	✓																										
					0	✓																										
Facial injury from animal tail	Catching animals	AH	3	2	6	✓	✓	✓	✓	✓	✓	✓																				
Back injury from lifting heavy weights	Transporting animals	AH	2	4	8	✓																										
	X-ray personnel	AH	2	4	8	✓																										
	Stores Personnel				0	✓																										
	Food Store	FSK	3	4	12	✓		✓							✓																	
	Chemical & Material Stores	SO	3	4	12	✓																										
	Caretakers				0	✓																										
	Chopping of food for animals	AC	2	2	4	✓		✓									✓		✓								✓					
	Removal of waste from sites.	AC	3	4	12	✓																										
	Welding & Electrical	W, E	4	4	16	✓																										
	Carpentary workers	C	4	4	16	✓																										
	Loading & unloading truck	TH	4	4	16	✓									✓																	
	Hospital complex Management		2	4	8	✓																										
	Medical Store					✓																										
Needle Stick					0	✓																										
	Animal Handlers				0	✓																										
	Presenting animals for procedure	AH	3	4	12	✓	✓	✓	✓	✓	✓																					
	Animal Technicians				0	✓																										
	Administration of Substances	AT	4	4	16	✓	✓	✓	✓	✓																						
	Assisting Vet Staff in pre surgery	AT	3	4	12	✓	✓	✓	✓									✓														✓
	Assisting Vet Staff in post surgery		1	4	4	✓	✓	✓										✓														✓
	Blood Sample collection	AT	3	4	12	✓	✓	✓	✓	✓																						
Needle Stick	Tattooing	AT	2	2	4	✓	✓	✓	✓	✓																						
Eye Splash					0	✓																										
	Animal handlers				0	✓																										
	Presenting animals for procedure	AH	3	2	6	✓	✓	✓	✓	✓	✓																					
	Animal technicians				0	✓																										
	Administration of substances	AH	3	2	6	✓	✓	✓	✓	✓																						

Hazards	Activities	Responsibility	Probability (likelihood)	Severity	Hazard Rating	Uniforms	Face mask	Boots	Vinyl gloves/Latex Gloves	Lab Coats	Helmets	Goggles	Face shields	Boots with top laces	Industrial shoes	Rubber gloves (black)	Rubber gloves (yellow)	Sterile gloves	Shark mesh gloves	Long arm gloves	Standard raincoat	Raincoat (p/cleaner)	Leather gloves	Welder face shield	Ear muffs	Apron (leather)	Apron (plastic)	Full face mask	PAPR	Disposable Lab coat	Disposable head cap	Clogg
Bite Wounds						✓	✓	✓	✓	✓	✓																					
	Catching of animals	AH	3	4	12	✓	✓	✓	✓	✓																						
	Transporting animals	AH	1	4	4	✓	✓	✓	✓																							
	Presenting animals for procedure	AH	2	4	8	✓																										
	Cage Rounds	AT	1	1	1	✓	✓	✓	✓																							
	Administration of Substances	AT	2	4	8	✓	✓	✓	✓	✓	✓																					
	Tattooing of animals	AT	1	1	1	✓	✓	✓	✓	✓																						
	Blood Sample collection	AT	3	4	12	✓	✓	✓	✓	✓																						
	Weighing of animals	AH	3	4	12	✓	✓	✓	✓	✓	✓																					
	Distribution of food to animals	AC	1	1	1	✓	✓	✓	✓	✓	✓						✓															
Animal scratches	Catching animals	AH	4	2	8	✓	✓	✓	✓	✓	✓																					
	Weighing of animals	AH	4	2	8	✓	✓	✓	✓	✓	✓																					
	Transporting animals	AH	3	2	6	✓	✓	✓	✓	✓	✓																					
	Presenting animals for procedure	AH	3	2	6	✓	✓	✓	✓	✓	✓																					
	Cage Rounds	AT	1	1	1	✓	✓	✓	✓		✓																					
	Administration of substances	AT	3	2	6	✓	✓	✓	✓																							
	Blood Sample collection	AT	3	2	6	✓	✓	✓	✓	✓																						
	Tattooing of babies	AT	1	1	1	✓																										
Slipping & falling	Catching animals	AH	2	2	4	✓	✓	✓	✓	✓	✓																					
	Transporting of animals	AH	1	2	2	✓	✓	✓	✓	✓	✓					✓																
	Administration of substances	AT	1	1	1	✓	✓	✓	✓												✓	✓	✓									
	Laboratory activities	AT	1	1	1	✓																										
	Food Store	FSK	1	1	1	✓			✓						✓	✓																
	Medical Store	MSO	1	1	1	✓																										
	Chemical & Material stores	SO	1	1	1	✓	✓	✓		✓		✓			✓	✓												✓				
	Pressure cleaning of cages	AC	2	3	6	✓	✓	✓														✓	✓									
	Distribution of food to animals.	AC	2	2	4	✓	✓	✓			✓						✓															
	Removal of waste from sites	AC	2	2	4	✓	✓	✓								✓																
	Gardening	G	1	1	1	✓		✓								✓							✓									
	Welding & Electrical	MES, MEA MS, MO	2	3	6	✓																										
	Carpentry	C	2	3	6	✓																										
	Site Supervisor	SS	2	2	4	✓																										
Slipping & falling	Laundry	LA	2	2	4	✓																										
	Truck Helper	TH	3	3	9	✓									✓																	
	Incinerator Operator	IO	1	1	1	✓																										
	Composting Workers	AC	3	3	9	✓																										
Bumping into cage		AH			0	✓																										
accessories	Catching animals	AH	3	3	9	✓	✓	✓	✓	✓	✓																					

Section	: QP603-01	Issue No.	: 7
Title	: Site Infrastructure	Date of Issue	: 28 August 2009
Compiled by	: Technical Officer	Approved by	: General Manager

1. Scope

The purpose of this section is to define the procedures for the regular monitoring and maintenance of infrastructure at all sites in order to ensure safe and proper housing of animals.

2. Responsibilities

.1 The Management Team is responsible to provide resources for the implementation of this procedure.

.2 The Technical Officer is responsible for the implementation of this procedure on a day to day basis.

3. working protocol

4. Policy

.1 All cages are inspected by the Technical Officer on a monthly basis.

4.2

5. Procedures for all projects designed and implemented by BCPR (excluding external consulting engineer).

	Activities	Responsibilities	Notes	Records
1.	**Planning of New sites/ cages/ buildings**			
	– Decision to build new sites/cages/buildings. – Brainstorming with Animal Welfare Officer and designated personnel.	Management Team	– Consider which type of innovation can be brought. – Site visit and its confirmation (if applicable). – Consider specific AAALAC requirements.	QR5-05
	– Preparation of draft plan.	Technical Officer	– Consider specific requests and inputs from brainstorming session.	--
	– Ensure all regulatory documents are in place (e.g. EIA approval, building permit, etc...)	Operations Manager	--	--
2	Estimate of Cost			
	– Finalize plans. – Prepare estimate cost of the project/works and record same in QR63-19 List of Materials for Purchase and sends same to Operations Manager for approval. – Operations Manager signs on QR63-19 after approval. – Record estimate of cost in QR63-40 accordingly.	Technical Officer Operations Manager	– Seek approval of ERC if applicable. QR63-40 is updated by Technical Officer and provide information about progress of works to Management Team.	QR63-19 QR63-40
3	Selection of Contractor			--
	– Liaise with contractor and seek quotations. – Negotiate for best deals with building contractor. – Affix "Approved" signature on quotation retained.	Technical Officer / Operations Manager Operations Manager	– Consider past performance of building contractor.	
	– Preparation of BCMPR construction guidelines as per project.	Technical Officer	– Use QR63-29 as basis. – Ensure contractor has signed the BCMPR Construction Guidelines for each new works.	QR63-29

	Activities	Responsibilities	Notes	Records
4	Implementation Phase – Implementation of the project/works.	Technical Officer / Operations Manager	--	--
	– Ensure procurement measures are taken.	Technical Officer	– Specify priorities. – Follow procedures for purchasing.	QR74-13 QP704-01 E - mail
	– Conduct regular inspection visits once the work has started and monitor progress. Inform Operations Manager in case of problem. – Update Project Status Report as required. – Request Animal Welfare Officer/General Manager/ Operations Manager / Accounts & Planning Manager / Site Supervisor/ Vet Staff / other designated staff to visit site at the time of installation of cage amenities.	Technical Officer/ Site Supervisors	– Ensure that contractors' personnel have been through BCMPR medical protocol, if applicable. – Immediately report to Operations Manager in case of unsatisfactory performance of building contractor.	QR63-40
	– Perform fortnightly contractors' meeting	Technical Officer	--	QR5-05
	– Review of Claim Form submitted by building contractor. – Operations Manager to approve payment.	Technical Officer Operations Manager	– Ensure claim is justified and relevant to work performed.	QR63-20
	– Assessment upon completion of work to ensure that it has been done as per BCPR requirements. – Request contractor to attend corrective action if necessary.	Technical Officer/ Operations Manager/ Animal Welfare Officer/ Site Supervisors/ Designated Vet/ General Manager/ Mechanical & Electrical Manager Technical Officer	– Assessment meeting done with General Manager, Technical Officers, Operations Manager, Animal Welfare Officer, concerned Site Supervisor, Mechanical and Electrical Manager and concerned Vet in presence of the contractor.	QR63-21 QR63-29

	Activities	Responsibilities	Notes	Records
5	**Upon Completion of Project/ Works** – Recommend for payment upon satisfactory assessment – Approve Claim Form. – Retention money released after three months if no problems identified.	Technical Officer/ Operations Manager Operations Manager	--	QR63-20
	– Perform the realized cost of project upon completion. – Complete the Infrastructure Cost Analysis Form for each claim and upon settlement of all claims. – Review the Infrastructure Cost Analysis Form with the Operations Manager and General Manager.	Technical Officer	– Report any major deviations to Operations Manager.	
	– Maintain all site plans documents and design.	Technical Officer	– Copy submitted to Operations Manager.	--
6.	**Maintenance and monitoring of existing infrastructure** – Check Online Job Request.	Technical Officer	– Consider requests made by Vet Staff, Animal Welfare Officer and Operations Manager.	E – mail
	– Report to Operations Manager about any significant delays/problems.	--	--	--
	– Discuss major issues at Management meeting.	Operations Manager	--	--

Records

Record Ref	Title
QR5-05	Minutes of Meeting
QR63-19	List of Materials for Purchase
QR63-20	Building Contractor - Claim Form
QR63-21	Project Assessment Report
QR63-29	BCMPR Construction Guidelines
QR63-39	Rules and Regulations Governing External Contractors
QR63-40	Project Status Report
QR74-13	Internal Requisition

BIOCULTURE (Puerto Rico) WORK INSTRUCTION

Section	**: WI64-01**	**Issue No.**	**: 5**
Title	**: Waste Management**	**Date of Issue**	**: 03 December 2007**
Compiled by	**: Vice President**	**Approved by**	**: President**

Sites applicable: All

Associated documents

ISO 9001:2000 Section 6.4
NRC Guide for the care and use of laboratory animals: Section 2
Quality manual: QM106
Procedure manual: QP701-02, 705-03, 802-01
Work instructions: WI64-03, 64-04, 75-06, 83-04,

Distribution list: All Heads of Department
Site Supervisor
Vet Staff
Medical Store Officer
Maintenance Supervisor
Laboratory Technician

Responsibilities: Animal Caretaker
Driver
Site Supervisor
Maintenance Personnel
Laboratory Manager
Laboratory Technician

Policies:

1. In view of continually improving upon the disposal of waste and to minimize any threat to the environment.

Types of Waste		Method of disposal								Responsibility	Remarks
		Refill	Composting	Re-use	WWP	Approved Landfill	Incineration	Outsourced	Hazard co		
Office stationery	Paper	–	–	–	–	–	–	✓	–	OA-SS-ITO-ADTM	
	Ink cartridges/Toners	✓	–	–	–	–	–	–	–	ITO	To be sent to landfill only if cannot be refilled
	Others	–	–	–	–	–	–	–	–	ADTM	
Medical Materials	Small containers	–	–	–	–	–	–	–	✓	MSO	
	Large containers-non hazardous	–	–	–	–	–	–	–	✓	MSO	
	Large containers-Potentially hazardous	–	–	–	–	–	–	–	✓	MSO	
	Empty aerosol cans	–	–	–	–	–	–	–	✓	MSO	
	Contaminated sharps	–	–	–	–	–	–	–	✓	MSO	
Laboratory Waste (swabs, autoclaved Petri dishes, gloves, etc.)		–	–	–	–	–	–	–	✓	LM-LT	
Construction Related Materials		–	–	✓	–	✓	–	–	–	STO-DTM	
Equipment	Damaged and Unsuitable Equipment	–	–	–	–	✓	–	–	–	DTM-M&EM-M&ES-M&EA	
	Contaminated Protective equipment (gloves, facemasks)	–	–	–	–	✓	–	–	–	SS	
	Non - Contaminated Protective equipment (gloves, facemasks)	–	–	–	–	✓	–	–	–	SS	
	Other Protective equipment (helmets, boots)	–	–	–	–	✓	–	–	–	SS	To be cleaned and disinfected first
Carton Packaging		–	–	✓	–	✓	–	–	–	SS	

Types of Waste		Method of disposal								Responsibility	Remarks
		Refill	Composting	Re-use	WWP	Approved Landfill	Incineration	Outsourced	Hazard		
Used Oils		–	–	✓	–	–	–	✓	–	M&ES-M&EA	
Gardening Waste		–	✓	–	–	–	–	–	–	SS	
Animal Food Wastage		–	✓	–	–	–	–	–	–	FSK	
Solid waste from cages		–	✓	–	–	–	–	–	–	SS	
Domestic Waste	Green waste	–	✓	–	–	–	–	–	–	SS	
	Others	–	–	–	–	✓	–	–	–	SS	
Carcasses		–	–	–	–	–	–	–	✓	SS-AT	
Used Neonatal Ward Beddings		–	–	–	–	–	–	–	✓	AT	
Used X-Ray Solutions		–	–	–	–	–	–	✓	–	T	
Enrichment Devices		–	–	–	–	✓	–	–	–	SS	
Wood From Carpentry Workshop		–	–	–	–	✓	✓	–	–	SS	
Shavings		–	✓	–	–	–	–	–	–	SS	
Chemicals from Foot bath		–	–	✓	–	–	–	–	–	SS	Recycled to wheel dips
Expired Chemicals		–	–	–	–	–	–	–	✓	DTM	

Legend:

AT:	Animal Technician
DTM:	Development & Trapping Manager
ADTM:	Assistant Development & Trapping Manager
FSK:	Food Storekeeper
LM:	Laboratory Manager
LT:	Laboratory Technician
M&EM:	Mechanical & Electrical Manager
M&ES:	Mechanical & Electrical Supervisor
M&EA:	Mechanical & Electrical Assistant
MSO:	Medical Store Officer
OA:	Office Attendant
SS:	Site Supervisor
STO:	Senior Technical Officer
T:	Technician

1. Bins for collecting waste are uniquely identified for each block of cages for each site.
2. Waste from cages is removed on a daily basis before 9h00. The bins are then washed and disinfected at a dedicated place to minimize any hazard.
3. Waste from hospital is removed by a specialized and authorized company in PR.
4. Dead Animals are kept in a freezer and removed on regular basis by a specialized and authorized company in PR.

AREA DE CALIDAD DE AGUA
JUNTA DE CALIDAD AMBIENTAL
DIVISION DE FUENTES DISPERSAS
SANTURCE, PUERTO RICO 00910

APARTADO 11488

Número de caso:____-_____-_____
Fecha:_____

Para completar la solicitud de un Certificado de Plan de Manejo de Desperdicios Fecales de Animales (adjunta), según requerido en la Regla 403.1 del Reglamento para el Manejo de los Desperdicios Sólidos No Peligros, deberá incluir la información o documentos mencionados a continuación:

A. Información general (para todos los casos):

1. Solicitud de Certificado de Plan de Manejo de Desperdicios Fecales de Animales, debidamente sellada y firmada por un agrónomo o ingeniero con licencia para ejercer la profesión en Puerto Rico.

2. Prueba o evidencia de que se ha cumplido con el Artículo 4 (C) de la Ley sobre Política Pública Ambiental, según enmendada.

3. Croquis detallado que incluya puntos de referencia como número de carretera, número de kilómetro y hectómetro, nombre del barrio y sector donde se ubique la empresa, el lugar donde se ubicará el sistema, colindantes y cabida de la finca en cuerdas o metros y el lugar donde se ubicará el sistema, incluyendo el área a ser utilizada para la aplicación de los desperdicios en el terreno. Además, deberá identificar la existencia de cuerpos de agua, tomas de agua, pozos de extracción, sumideros, residencias o estructuras donde se reunan o vivan personas y otros en un radio de 100 metros de la empresa y el sistema, incluyendo el área utilizada para la disposición final de los desperdicios.

4. Certificación de inundabilidad que indique la clasificación de la zona (según son designadas por la Junta de Planificación y el Departamento de Recursos Naturales y Ambientales) para el área donde se localizará la empresa y el sistema.

B. Información adicional para casos específicos (unicamente someta aquella información que aplique al sistema propuesto):

1. En los casos donde la actividad propuesta se llevara a cabo en un predio que no es propiedad del operador de la empresa, éste deberá proveer evidencia escrita dónde el dueño de la finca autoriza al operador de la empresa a llevar dicha actividad, incluyendo la implantación del sistema.

2. Si el sistema propuesto incluye componentes, tales como, pero limitado a: tanque soterrados, pozos sépticos, charcas de oxidación, zanjas de infiltración y otros donde los desperdicios fecales de animales son infiltrados al suelo o la ubicación del componente es soterrado, deberá incluir pruebas de percolación y nivel freático del terreno dónde estará ubicado el componente del sistema, debidamente selladas y firmadas por el profesional especializado a cargo.

3. Si el método de disposición para los desperdicios fecales de animales consiste en llevar los mismo a otra finca con el propósito de incorporarlos como fuente de abono orgánico, deberan someter:

   a. un croquis de la finca que incluya cuerpos de agua, sumideros, pozos de extracción, residencias o estructuras donde se reunan o vivan personas y otros en un radio de 100 metros de la empresa y el sistema;

   b. carta contrato donde el propietario de la finca indique estar en la disponibilidad de recibir dichos desperdicios y que dispondrá los mismo de acuerdo a lo establecido en el diseño del sistema y en cumplimiento con toda la reglamentación aplicable. La carta deberá estar firmada por el dueño de la finca que recibe los desperdicios.

4. Si el método de disposición final para los desperdicios fecales de animales consiste en llevar los mismos a un vertedero, la solicitud deberá incluir una carta del Alcalde o del administrador del vertedero donde se indique: Nombre y localización del vertedero y la disponibilidad para aceptar los desperdicios fecales de animales en el verdero. Además, evidencia que demuestre que el vertedero tiene los permisos correspondientes conforme al Reglamento para el Manejo de los Desperdicios Sólidos No peligrosos.

5. Si el método de disposición final para los desperdicios fecales de animales consiste en entregar los mismo a una entidad o persona que acepte la responsabilidad legal de los mismos; esto incluye, pero no se limita a dueños de jardines o viveros, plantas para la generación de alimento para animales, plantas para la generación de gas métano, centros de investigación y otros, deberá incluir:

   a. una carta contrato con la persona que recibe los desperdicos, a tenos con lo dispuesto en la Regla 1102 del Reglamento para el Control de los Desperdicios Fecales de Animales Generados en Empresas Pecuarias.

6. Si el método de disposición final para los desperdicios fecales de animales consiste en entregar los mismos a: dueños de jardines o viveros, plantas para la generación de alimento para animales, plantas procesadoras de desperdicios, plantas para la generación de gas metano, centros o proyectos de investigación o cualquier otra entidad o persona que acepte la responsabilidad de los desperdicios fecales de animales, la solicitud deberá incluir lo siguiente:

   a. Una carta contrato entre el operador de la empresa y la persona o entidad que recibe los desperdicios, donde se incluya, pero no se limite a:

      (1) información sobre la persona o entidad que recibe los desperdicios fecales de animales, incluyendo pero no limitandose a: nombre, dirección física y postal de la persona o entidad que recibe los desperdicios;

      (2) cantidad y procedencia del desperdicio;

      (3) descripción del método utilizado para almacenar, utilizar y disponer de los desperdicios;

      (4) disponibilidad de recibir los desperdicios y utilizar o disponer de los mismo de acuerdo a lo establecido en el diseño del sistema y en cumplimiento con todas las disposiciones de este Reglamento.

   Esta carta contrato deberá ser firmada por el operador de la empresa y la persona que recibe los desperdicios.

7. Si los desperdicios fecales de animales seran transportados por una vía pública se deberá proveer evidencia de que el transportador está debidamente autorizado por la Junta de Calidad Ambiental para transportar desperdicios sólidos no peligrosos por vías públicas.

8. En el caso que el método de almacenamiento o disposición para los desperdicios fecales de animales consista en utilizar trincheras, el operador de la empresa o el dueño de la finca donde se establecerá la misma, deberá demostrar a satisfación de la Junta de Calidad Ambiental que la construcción u operación de ésta no causará daños al ambiente o a la salud humana. La autorización de estas trincheras estará sujeta a la previa presentación ante la Junta de Calidad Ambiental de un estudio completo, incluyendo pero no limitandose a: características del desperdicio a tratar, ubicación, capacidad o tiempo de retención, nivel freático, percolación del terreno, porciento (%) de remoción de nutrientes, diseño, criterios de diseño, planos y especificaciones e información sobre experimentación en Puerto Rico u otras partes del mundo.

9. Si la construcción de la empresa o el sistema envuelve actividades tales como rellenar, nivelar, excavar, extraer, almacenar, amontonar, crear montículos, remover la cubierta vegetativa del suelo o realizar cualquier otro movimiento de componentes de la corteza terrestre, cuyo volumen exceda los cuarenta (40) metros cúbicos (1,412 pies cúbicos) o el área de construcción exceda de novecientos (900) metros cuadrados (9,682 pies cuadrados), se deberá someter copia del Permiso CES.

10. En los caso que el sistema presentado corresponda a uno innovador el operador de la empresa incluirá en la solicitud un estudio completo del sistema, incluyendo pero no limitado a datos, resultados, diseño, criterios e información sobre experimentación en Puerto Rico u otras partes del mundo.

Nota: No se recibirá ninguna solicitud si la misma no esta completa.

rev. 8/junio/95
list-con

JUNTA DE CALIDAD AMBIENTAL
AREA DE CALIDAD DE AGUA
DIVISION DE FUENTES DISPERSAS
APARTADO 11488
SANTURCE, PUERTO RICO 00910

(Para uso oficial de la JCA)
Número de solicitud:_____
Número del caso:____-_____-_____
Fecha de recibo:_____

SOLICITUD DE CERTIFICADO DE PLAN DE MANEJO DE DESPERDICIOS FECALES DE ANIMALES

Llene una solicitud individual para cada sistema de manejo de desperdicios fecales de animales para la cual se solicita un Certificado de Plan de Manejo de Desperdicios Fecales de Animales. Favor de escribir N/A si no aplica la información.

I. INFORMACION GENERAL:

1. Nombre del operador: BUSHMITZ MARK MOSHE

2. Nombre de la empresa: BIOCULTURE PUERTO RICO INC

3. Tipo de empresa:

   a.____vaquería b.____porqueriza c.____potreros
   d.____granja avícola:
   ____pollos parrilleros ____guineas
   ____gallinas ponedoras ____pavos
   ____gallinas de reemplazos
   e.X Otros (indique): GRANJA DE MONOS

4. Dirección física: CARRETERA 712 KM 14.9
   (Carr., Km., Hm.)
   BARRIO POZO HONDO
   (barrio / sector)
   GUAYAMA, PR
   (pueblo)

5. Dirección postal: PUEBLITO CARMEN, BOX HC02-4250
   (apartado / buzón / calle)
   GUAYAMA 00784
   (Pueblo) (Código postal)

6. Número telefónico del operador: (787) 361-8717

II. DATOS DE LA FINCA:

1. Tamaño de la finca: 7.353* cuerdas * AREA DE FINCA A SER UTILIZADA PARA PROYECTO

2. Topografía: 10 % llano 50 % semillano 40 %incluinado

3. La finca es: ____propia X arrendada ____Otra:_____
   De ser arrendada indique el nombre del propietario:

   OLGMAS, INC.

4. Actividades y recursos cercanos:

Indique si alguna de las actividades o recursos mencionados a continuación existen en un radio de cien (100) metros del sistema y de la empresa pecuaria.

ACTIVIDAD	Distancia a empresa (m)	Distancia a sistema (m)	Nombre (si aplica)
Acuifero			N/A
Cantera			N/A
Cuevas			N/A
Dunas			N/A
Estuarios			N/A
Fallas Geológicas			N/A
Lagos			N/A
Pozos de extracción	DENTRO	100	
Abastos públicos de agua potable			N/A
Sumideros o cavidades de drenaje natural			N/A
Pantanos o mangles			N/A
Manantiales			N/A
Quebrada	DENTRO	30	RIO SECO
Río			N/A
Canal de riego			N/A
Vertederos			N/A
Residencias o estructuras donde vivan o se reunan personas			N/A
Graveros o areneros			N/A

III. INFORMACION REFERENTE A LOS ANIMALES.

1. Clasificación, número máximo de animales proyectado y características del desperdicio fecal animal generado en la empresa:

TIPO DE EMPRESA Y CLASIFICACION	CANTIDAD DE ANIMALES	VOLUMEN DE DESPERDICIOS ($pies^3$/día)	CONTENIDO DE NUTRIENTES (lb/día) N P_2O K_2O
Vaquería:			
Vacas			
Toro(s) Becerros			
Reemplazos			
Otros:			
Porqueriza:			
Paridoras			
Madres lactando			
Reemplazos			
Cebas			
Destetes			
Verracos			
Granja Avícola:			
Pollos parrilleros			
Gallinas ponedoras			
Gallinas de reemplazo Guineas			
Pavos			
Potreros:			
Caballos			
Otros: GRANJA DE CRIANZA MONOS	2,000	215	7.52 0.022 0.355
TOTALES:	2,000	215	7.52 0.022 0.355

IV. DATOS TECNICOS DEL SISTEMA:

1. Recolección de los dseperdicios fecales de animales:
combinados X separados

METODO DE RECOLECCION	DIMENSIONES	CANTIDAD
___1. Zanjas en concreto		
X 2. Tuberías: X PVC ___Metal ___Concreto ___Aluminio ___Otras:		
___3. Con camada: ___paja de café ___papel ___viruta de madera ___Otra:	NO APLICA	
___4. Sin camada (especifique):		
___5. Otro: (especifique)		

2. Lavado de las áreas de confinamiento:
Frecuencia: DIARIA
Método: RECOLECCIÓN DE DESPERDICIOS FECALES EN SECO Y LUEGO LAVADO

3. Periodo de confinamiento (horas/día):

24

4. Volumen de descarga:

a. volumen desperdicios fecales animales: 215 pies^3/día (segregado y enviado a composta)

b. volumen de agua de limpieza: 427 pies^3/día

c. volumen de agua adicional: _____ pies^3/día

VOLUMEN TOTAL: 427 pies^3/día

5. Especificaciones del componente de almacenamiento temporero:

TIPO DE COMPONENTE	DIMENSIONES (PIES)	CAPACIDAD	TIEMPO DE RETENCION
PLATAFORMA DE HORMIGON PARA COMPOSTA DE FECALES SOLIDOS	30 x 20	705 cu ft	4 semanas
CHARCA DE OXIDACIÓN			

a. Material de construcción (especifique):
HORMIGÓN CON TECHO DE ACERO GALVANIZADO, CHARCA DE OXIDACIÓN POR TIERRA

b. El componente de almacenaje está techado: X **SI** ____**NO** (PLATAFORMA PARA COMPOSTA)

c. Indique el nivel freático estacional máximo: > 25 pies.

d. Indique la percolación del terreno (si através del componente de almacenaje se permite infiltración al terreno):
50 minutos/pulgadas. (CHARCA DE OXIDACIÓN PARA COMPONENTE LÍQUIDO)

6. Especificaciones para la disposición final de los desperdicios fecales de animales.

a. Lugar utilizado para la disposición:

____finca propia (donde está ubicada la empresa).

X finca alterna o receptora:
Nombre del dueño: _____
Dirección: _____

____vertedero:
Nombre: _____
Dirección: _____

____planta procesadora de desperdicios
Nombre: _____
Dirección: _____

____Otro: _____

b. Si los desperdicios fecales de animales serán utilizados como fertilizante orgánico en cultivos o siembras a campo abierto, deberá indicar:

(1) Tipo de suelo: _____

(2) Tipo de siembra o cultivo a ser abonado con desperdicios fecales de animales: _____

(3) Area total disponible para el riego de los desperdicios fecales de animales como

abono orgánico: _____ cuerdas.

(4) Area mínima requerida para incorporar al terreno o a cultivos los desperdicios fecales de animales como abono orgánico:
_____ cuerdas

(5) Frecuencia (días) y tiempo de riego (horas):
_____
_____

(6) Plan de rotación de predios a ser regados:
_____
_____

c. Si la disposición de los desperdicios fecales de animales es mediante infiltración de los mismo al suelo, deberá indicar:

(1) resultado prueba de percolación del suelo:
_____minutos/pulgadas

(2) nivel freático estacionario mayor:
_____pies

h. Mecanismo o método utilizado para la disposición de los desperdicios fecales de animales:

____ Bomba, tubería(s) y pistero(s)
Tipo de bomba: _____
Capacidad de la bomba: _____
Descarga de la bomba: _____gals/min
Cantidad de pisteros: _____
Alcance del pistero: _____
Diámetro mojado: _____
Descarga del pistero: _____
Diámetro de la tubería: _____
Cantidad de tubos: _____

____ Bomba y tuberías perforada
Tipo de bomba:_____
Capacidad de la bomba: _____
Descarga de la bomba: _____gals/min
Diámetro de la tubería: _____
Cantidad de tubos: _____
Diámetro de las perforaciones del tubo _____

____ Zanjas de infiltración
Dimensiones: _____
Cantidad de zanjas: _____

____ Camión o tanque de riego ____privado ____propio
Capacidad del Tanque: _____
De no ser operador, favor de indicar:
Nombre: _____
Dirección: _____
Método de asperjación o riego:_____
_____

____ Riego al voleo en capa fina y uniforme

____ Suplemento alimenticio para animales

____ Generación de gas metáno

____ Otros:_____
_____

i. Si los desperdicios fecales de animales serán transportados por una vía pública, deberá indicar:

(1) Nombre y dirección de la compañía o persona que transportará los desperdicios (si el transporte no es propio): N/A

(2) Descripción del método de transportación:

CAMIÓN

V. INDIQUE SI SE PROYECTA ESTABLECER ALGUN TIPO DE CONTROL PARA EVITAR QUE LAS AGUAS DE ESCORRENTIA (LLUVIA) GANEN ACCESO A LOS COMPONENTE DEL SISTEMA. ESPECIFIQUE:

LA PLATAFORMA DE HORMIGÓN PARA LA COMNPOSTA TENDRÁ UN TECHO DE ALUMINIO (VÉASE EJEMPLO)

VII. BREVEMENTE DESCRIBA EL PROCESO COMPLETO QUE SE UTILIZARA PARA EL MANEJO DE LOS DESPERDICIOS FECALES DE ANIMALES DESDE EL MOMENTO EN QUE SON GENEREDOS HASTA SU DISPOSICION FINAL:

LOS DESPERDICIOS SÓLIDOS GENERADOS EN LAS JAULAS CON PISO DE HORMIGON SERÁN BARRIDOS EN SECO. LOS DESPERCICIOS FECALES SERÁN RECOGIDOS EN ENVASES DE ACERO INOXIDABLE Y LLEVADOS HASTA LA PLATAFORMA DE LA COMPOSTA. AQUÍ SERÁN MEZCLADOS CON LOS DESPERDICIOS DE ALIMENTO. SE COLOCARAN EN COMPOSTAS DONDE ESTARAN POR CUATRO SEMANAS. DE AQUI SERÁN LLEVADOS A LA FINCA DESIGNADA EN ESTE DOCUMENTO POR CAMIÓN. AQUI SERÁN APLICADOS AL TERRENO SEGÚN SEA REQUERIDO PARA EL USO DEL CULTIVO.

VIII. DECLARACION DEL OPERADOR

"Declaro que la información aquí contenida es cierta, correcta y completa, la cual someto para cumplir con lo dispuesto en el Reglamento para el Manejo de los Desperdicios Sólidos No Peligrosos de la Junta de Calidad Ambiental"

Fecha

Firma del operador BUSHMITZ MARK MOSHE

IX. FIRMA Y SELLO DEL PROFESIONAL QUE PREPARO EL DISEÑO DEL SISTEMA

Firma del profesional

rev. 5/diciembre/96
A-1

PLAN DE MANEJO PARA DESPERDICIOS FECALES DE ANIMALES
BIOCULTURE PUERTO RICO INC.
CARRETERA PR 712 KM 14.9, BARRIO POZO HONDO
GUAYAMA, PR

1. MEMORIAL EXPLICATIVO

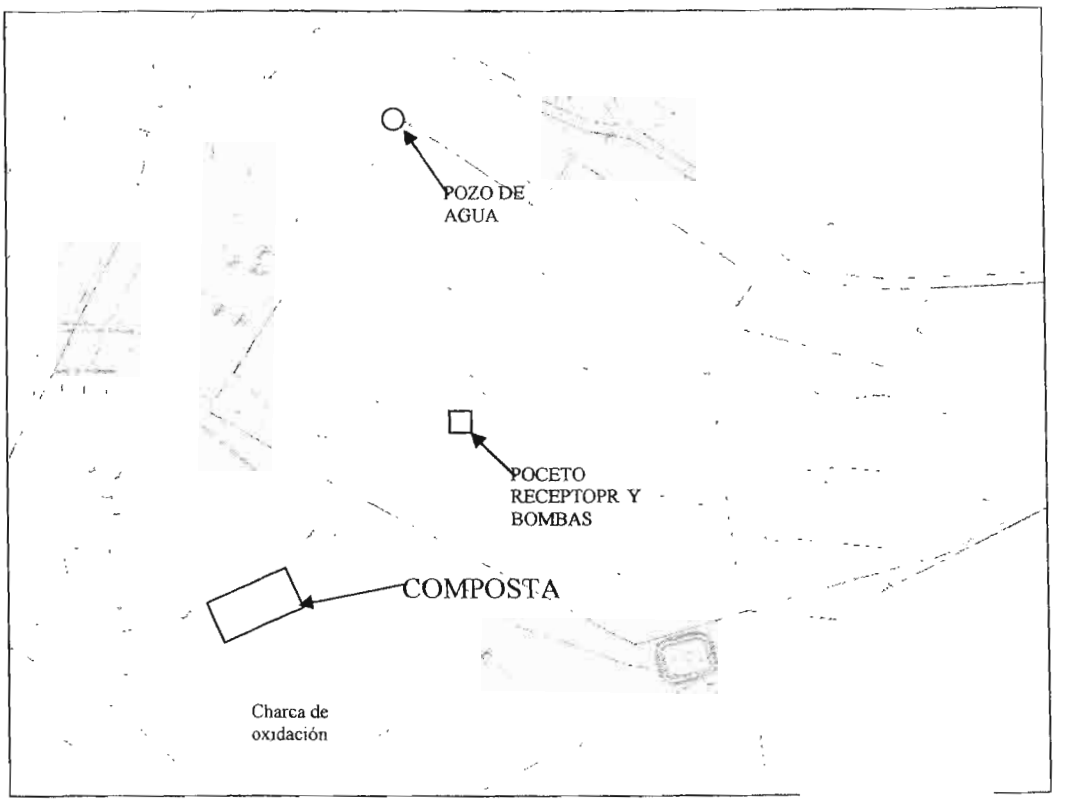
El proyecto Bioculture Puerto Rico Inc. será una facilidad para la crianza de monos de la especie maccaca fascicularis. Esta facilidad va a ser manejada con las mas estrictas medidas de control y seguridad para que estos mono se mantengan todo el tiempo en sus jaulas. La facilidad está siendo construida en un área que estaba siendo usada por la ganadería por su pasado propietario.

Los edificios a ser construidos estarán alejados de las quebradas y pozos de extracción de agua según lo establecido en el Reglamento para el Control de los Desperdicios Fecales de Animales de Empresas Pecuarias del 2008 (RCDFAEP) de la Junta de Calidad Ambiental. La planificación del proyecto está hecha de tal manera que los desperdicios sólidos van a ser segregados de los líquidos para que el impacto ambiental sea mucho menor.

Las jaulas de los animales serán barridas y se recogerán los materiales sólidos tales como las heces fecales y las sobras de alimentos. Estos serán recogidos en envases de acero inoxidable y llevados a la plataforma de hormigón dende se estarán preparando la composta. Esta plataforma será aislada de los elementos por muros y techo. La composta generada será utilizada como abono en una finca y como abono en áreas verdes en los predios de esta facilidad.

La limpieza de las jaulas será realizada después de la recolección de los sólidos. La higiene de los lugares donde se estarán criando estos animales es una prioridad alta ya que estos animales tienen que estar saludables y libres de enfermedades. Esta limpieza será hecha utilizando máquinas de presión de alta eficiencia para minimizar el uso de agua. La mayoría del uso de agua de esta facilidad estará designada para esta limpieza. Cuando la facilidad esté en con su máxima población de aproximadamente 4,500 monos, se espera estar produciendo un máximo de 40,000 galones por día de aguas de desecho. Las aguas de limpieza serán dirigidas por medio de rejillas y tuberías hacia unos pocetos de hormigón. En estos pocetos habrán bombas sumergibles con sistemas de bollas para bombear esta agua hacia una charca de oxidación. Esta charca tendrá suficiente capacidad para cumplir con RCDFAEP en términos del tiempo de retención y capacidad para asimilar las aguas generadas por las lluvias y el agua de limpieza. La disposición de esta agua según diseño será la evaporación e infuiltración en el terreno.

2. MAPA O CROQUIS DE LA FINCA



3. PLANOS Y ESPICIFICACIONES DE DISEÑO PARA LOS COMPONENTES DEL SISTEMA

A. Componente de Recolección

1. Canales y tuberías de recolección
   a. Especificaciones de diseño y construcción
   i. Material de construcción PVC
   ii. Las tuberías de PVC estarán conectadas a los declives hechos en las áreas de jaulas. El declive de las tuberías estará entre 2% y 5% para evitar la acumulación de sólidos.
   iii. La tubería tendrá registros en ángulos de 90 grados en intervalos regulares para facilitar la limpieza.
   iv. Las tuberías de recolección deberán tener un diámetro mínimo de cuatro (4) pulgadas (10.16 centímetros) y los canales de recolección deberán tener un ancho mínimo de doce (12) pulgadas (30.48 centímetros) y una profundidad mínima de seis (6) pulgadas (15.24 centímetros). Esto es para facilitar la limpieza, evitar obstrucciones y desbordamientos.

v. Las tuberías estarán diseñadas para un flujo máximo diario de 40,000 galones por día.

b. Operación y mantenimiento

i. Las zanjas se mantendrán limpias, libre de vegetación yo basura.

ii. Se debe remover el sedimento y cualquier obstrucción que limite el flujote los desperdicios líquidos de los animales.

iii. Los canales y la tubería y sus registros serán inspeccionados por lo menos una vez por semana para verificar roturas, obstrucciones u averías.

iv. Las roturas detectadas se repararán inmediatamente y las obstrucciones serán limpiadas tan pronto se detecten.

B. Especificaciones de diseño para Charca de Oxidación

a. La localización de la charca será en la localización con coordenadas Lambert:
X: 229,650.722
Y: 220,252.605

vi. Esta localización tiene poca pendiente, erosión moderada y alejada de los predios principales de la facilidad.

vii. Nivel Freático :
Las pruebas de nivel freático fueron realizadas por la firma de ingenieros geotécnicos PIM y certificadas por el ing. Luis A. Rodriguez.

Tabla 1.0 Resumen de Resultados

Identificación de la Prueba	Profundidad del Barreno (pies)	Descripción General del Perfil del Subsuelo	Profundidad del Nivel Freático (pies)
B-1	5	Fragmentos de roca y arena limosa	No encontrado
B-2	25	Arcilla, fragmentos de roca y arena limosa	No encontrado
B-3	10	Fragmentos de roca y arena limosa.	No encontrado
B-4	10	Arcilla, fragmentos de roca y arena limosa.	No encontrado
B-5	20	Arcilla, fragmentos de roca y arena limosa	No encontrado
B-6	25	Arcilla, fragmentos de roca y arena limosa.	No encontrado

El barreno B-3 es la prueba de nivel freático hecha en el lugar propuesto para la charca de oxidación.

viii. La permeabilidad del material que reviste la charca será de una permeabilidad menor de 0.0028 pies por día.

ix. Factores de diseño:

i. La razón de flujo máximo – 40,000 galones por día

ii. El tiempo de retención de la charca de oxidación será de siete (7) días.
iii. La capacidad de la charca es de 448,000 galones – Ver hojas de cálculo

x. El fondo se la charca será nivelado y compactado para asegurar una distribución uniforme de los cienos para evitar la filtración excesiva al subsuelo.
xi. El fondo de la charca tiene una distancia mayor de 4 pies sobre el nivel freático.
xii. Los declives externos de la charca será de 3:1.
xiii. Los declives internos de la charca serán de 2:1.
xiv. Los diques serán construidos en forma compacta y protegidos con vegetación para evitar deslizamientos del terreno.

xv. No se permitirá que crezcan árboles cerca de los diques ni dentro de la charca.

xvi. El área alrededor de la charca será lo suficientemente ancho para acomodar la maquinaria en movimiento y el equipo de mantenimiento. Dicha área tendrá un ancho mínimo de ocho (8) pies (2.5 metros).

xvii. Se tomarán las medidas o controles necesarios para cumplir con los requisitos establecidos en la Regla 1165 (C)(4) de este Reglamento.

xviii. Para evitar que el contenido de la charca se desborde por encima del dique y provoque el rompimiento del mismo, la charca tendrá un tubo o zanja en tierra u hormigón para descargas de emergencia. Este tubo deberá estar localizado a seis (6) pulgadas (15.24 centímetros) bajo el tope de la charca, en dirección opuesta a cualquier cuerpo de agua, de haberlo, o al lado más distante de éste y al lado más distante del tubo o zanja de entrada de los desperdicios fecales de animales a la charca. Se colocará un codo en la entrada del tubo en posición de 90 grados hacia el interior de la charca, para evitar la descarga de sólidos flotantes. El tubo o la zanja deberán tener su salida sobre el terreno natural y no al dique exterior de la charca.

xix. La profundidad en las charcas anaeróbicas deberá tener como mínimo seis (6) pies (1.8 metros) y como máximo dieciocho (18) pies (5.5 metros).

xx. El diseño del Sistema deberá incluir la instalación de un sistema de boya para mantener la entrada de la manga de succión a dos (2) pies (0.61 metros) por debajo del nivel del líquido, así evitará que esté en contacto con el fondo de la charca y se minimiza la entrada de sedimentos.

xxi. Instalar una rejilla (screen) en el sistema de entrada de la charca para controlar la entrada de heno, guantes u otros objetos que pueden obstruir la entrada a la bomba.

xxii. Instalar un marcador de elevación para medir el nivel máximo de almacenamiento de desperdicios fecales de animales establecido en el diseño, además de medir la reserva de almacenamiento de aguas de lluvia y el margen de seguridad.

C. Mantenimiento y operación

i. Deberá aplicar los desperdicios fecales de animales de acuerdo al itinerario y con la frecuencia que se determine en el diseño del Sistema.

ii. . Deberá homogeneizar, agitar o mezclar el contenido de la charca poruna hora como mínimo, previo a regar los desperdicios fecales de animales.

iii. Deberá mantener libre de basura la superficie y los alrededores y de la charca.

iv. Deberá establecer medidas para controlar los yerbajos en los alrededores de la charca y para evitar que los mismos invadan la superficie de la misma.
v. La superficie de la charca deberá permanecer libre de yerbajos en todo momento, a menos que en el diseño del Sistema se establezca el uso de algún tipo de vegetación para mantener una operación adecuada del Sistema y la Junta de Calidad Ambiental lo apruebe.
vi. Deberá verificar diariamente el nivel de la charca, para que éste nunca sobrepase el nivel máximo establecido en el diseño para comenzar el riego.
vii. Deberá comenzar a disponer del contenido de la charca, cuando ésta haya alcanzado tres cuartas (3/4) partes de su capacidad.
viii. viii. El nivel de la charca nunca deberá bajarse a más de la mitad de ésta, esto es para mantener un nivel adecuado de bacterias, lo cual permitirá el tratamiento rápido de los desperdicios fecales de animales, a menos que el diseño del Sistema establezca otra alternativa o método.
ix. Deberá instalar y mantener visibles letreros de advertencia, limitando el paso de personas al área de la charca u otras áreas de riesgo. El letrero deberá indicar como mínimo una advertencia dirigida a limitar el paso de personas, la profundidad y el contenido de la charca. Además, deberá darle el mantenimiento necesario a dichos letreros.
x. Deberá establecer y mantener cercas alrededor de las estructuras, según se indica en el diseño.

D. Componente de Disposición Final

La disposición final de los desperdicios fecales será dividida en dos: sólidos y líquidos.

1. Desperdicios sólidos

Los desperdicios fecales de los animales serán recogidos de las jaulas sin agua. Estos desperdicios serán barridos hacia unos recipientes de acero inoxidable. Estos desperdicios serán llevados a una plataforma de hormigón (figuras1 y 2)

En la plataforma de hormigón se colocarán los desperdicios fecales junto con las sobras de comida de los animales (frutas y vegetales) para que halla suficiente material para la descomposición de los sólidos volátiles. Las figuras 1 y 2 presentan fotografías del ranchón de composta de una facilidad similar a la propuesta en la isla de Mauritius. Como se puede apreciar esta será una plataforma techada y con paredes para evitar que el agua de lluvia saque los desperdicios del área. La información presentada en este documento fue recopilada a base del documento de composta presentado por la Dra. R. Mohee en la facilidad de Bioculture LTD. En el año 2004.

Figura 1: Ranchón de composta (Mauritius)

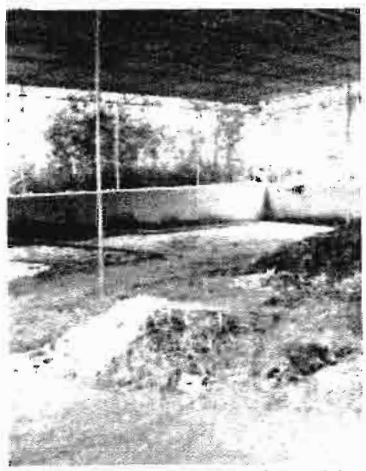


Figura 2 Compostas en Mauritius

El proceso de descomposición en composta tarda aproximadamente cuatro semanas durante la cual los sólidos volátiles serán reducidos en un 48%. El periodo de composta no será menor de cuatro semanas con movimientos cada semana para que los sólidos sean completamente tratados.

La figura 3 presenta el tamaño requerido para mantener la composta dentro de la plataforma de hormigón. Se sugiere que se mantenga en un área no menor de 6 metros por 3 metros y con un metro de amortiguamiento. El tamaño de la composta preparada será de 3 metros de diámetro por 1.5 metros de altura.

La tabla 1 presenta los resultados de colonias bacterianas antes y después del periodo de composta. En esta tabla se presenta la reducción de colonias bacterianas al cabo del proceso de composta.

[illegible]	[illegible]
[illegible]	[illegible]

Tabla 1 Colonias Bacterianas antes y después de composta

La composta después de haberse terminado (figura 7) será utilizada en los predios de la facilidades de Bioculture para el mantenimiento de las áreas verdes dentro de la facilidad y de una granja en Santa Isabel que ya ha mostrado interés en este abono.

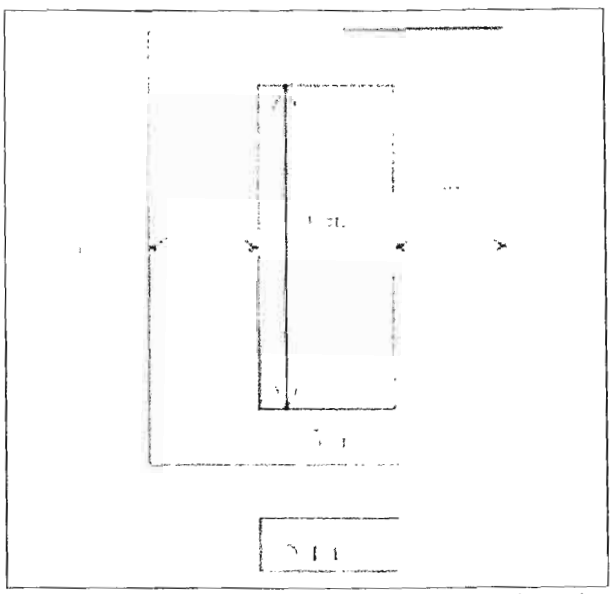


Figura 3 Espacio requerido para la plataforma de hormigón con áreas de amortiguamiento

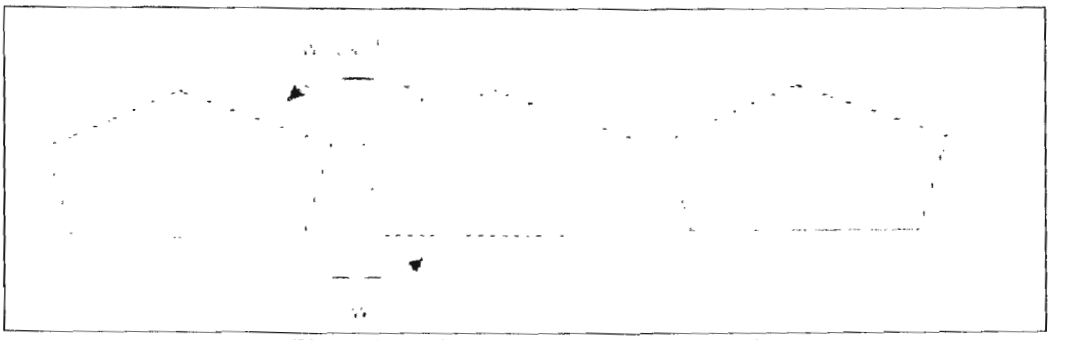


Figura 4 Movimiento de composta semanal

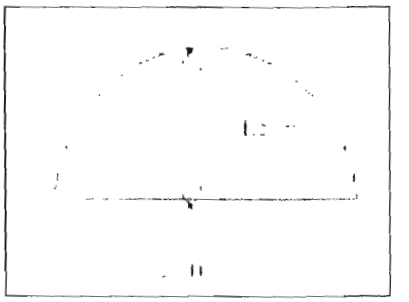


Figura 5 Tamaño de Composta

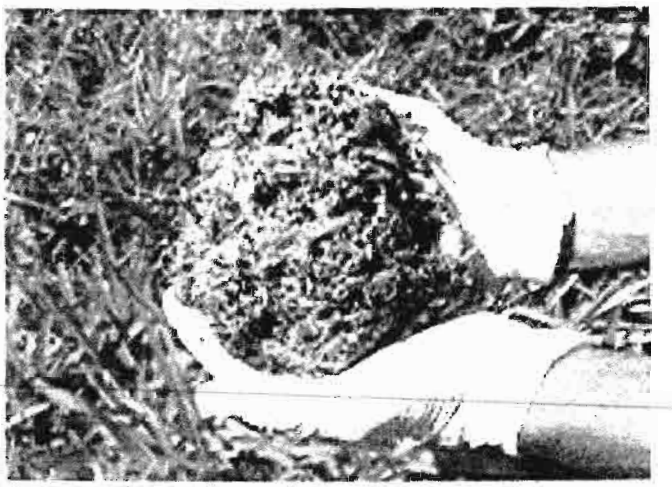
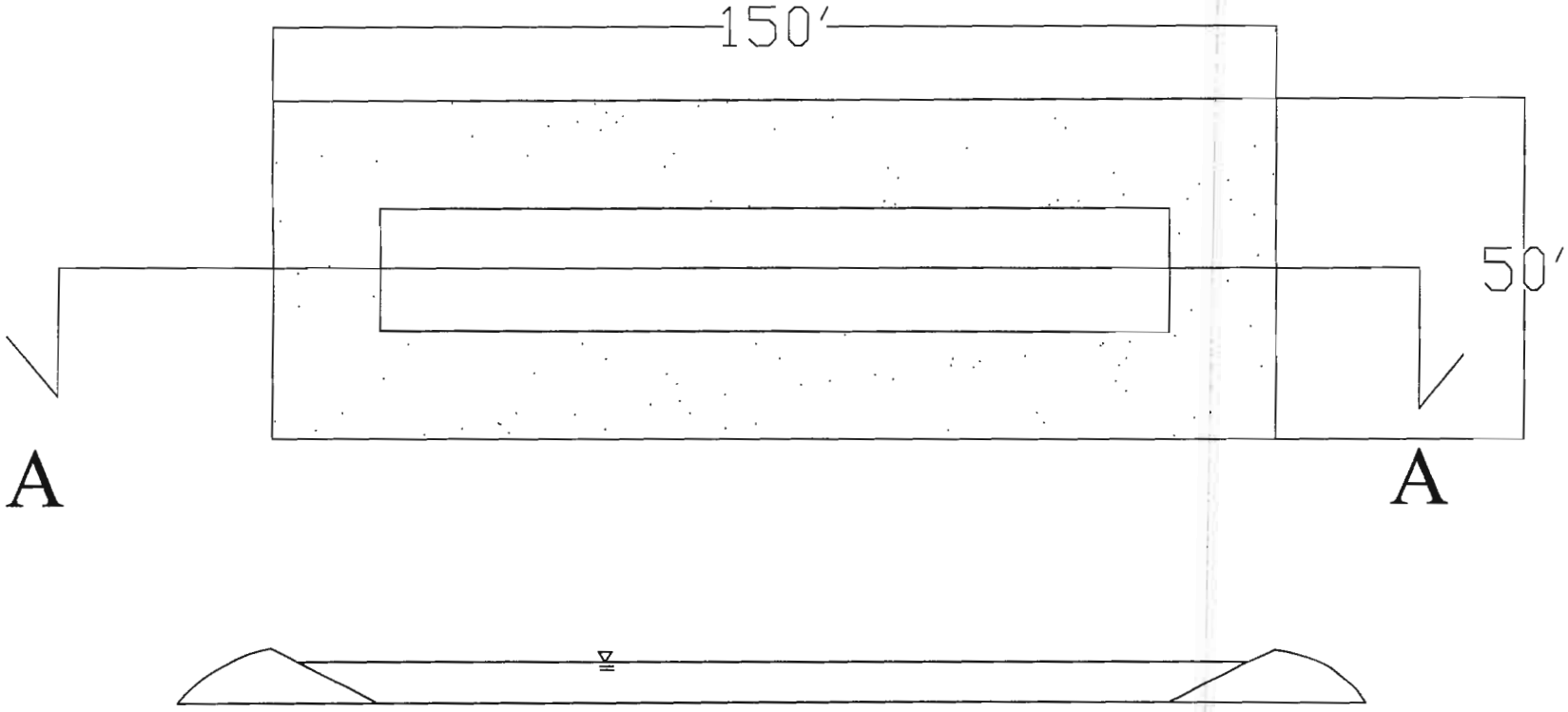


Figura 6 Desperdicios antes de composta

Figura 7 Composta

2. Desperdicios líquidos

Según lo descrito en las primeras secciones de este documento los desperdicios líquidos serán dispuestos en la charca de oxidación. El flujo de agua y el área de superficie de la charca de oxidación serán de tal manera que se mantendrá un balance por medio de evapotranspiración. El efecto neto será que el nivel de la charca será mantenido alrededor de 6 pies. Este nivel es el nivel más bajo para mantener condiciones anaeróbicas. Estas condiciones pueden ser evitadas si se mantiene el nivel a 5 pies controlando los flujos o añadiendo más charcas de oxidación en el área designada. No se prevé la necesidad



SECCIÓN A-A

9 de septiembre de 2009

Ing. Heriberto Torres Olivieri
Condominio Paseo La Princesa
Calle Monaco, Apartamento 410
Ponce, Puerto Rico, 00716

Fax: (787) 841-2082 (2 pages)
E-mail: hatorres110@gmail.com

pim

RE: INFORME SOBRE PRUEBAS DE PROFUNDIDAD DEL NIVEL FREÁTICO: FACILIDADES DE LA EMPRESA BIOCULTURE PR, INC., MUNICIPIO DE GUAYAMA, PUERTO RICO

Estimado ingeniero Torres:

Según requerido, esta carta presenta los resultados de las pruebas de verificación del nivel freático para el proyecto en referencia. Para este proyecto se solicitó determinar la elevación del nivel freático en seis (6) ubicaciones distintas dentro de las facilidades propuestas (ver Anejo 1 para la ubicación de dichas pruebas). Estos resultados se utilizarán para la evaluación de los sistemas de disposición de aguas usadas de las facilidades en referencia.

La Tabla 1.0 muestra los resultados de la ubicación del nivel freático así también como un resumen del perfil de suelos de la zona de estudio.

Tabla 1.0 Resumen de Resultados

Identificación de la Prueba	Profundidad del Barreno (pies)	Descripción General del Perfil del Subsuelo	Profundidad del Nivel Freático (pies)
B-1	5	Fragmentos de roca y arena limosa.	No encontrado
B-2	25	Arcillla, fragmentos de roca y arena limosa.	No encontrado
B-3	10	Fragmentos de roca y arena limosa.	No encontrado
B-4	10	Arcillla, fragmentos de roca y arena limosa.	No encontrado
B-5	20	Arcillla, fragmentos de roca y arena limosa.	No encontrado
B-6	25	Arcillla, fragmentos de roca y arena limosa.	No encontrado

Note que la profundidad de algunos de los barrenos exploratorios se vió limitada por la dureza del material nativo de la zona. Para una descripción detallada de la estratigrafía de los suelos en-

contrados en las localizaciones exploradas, incluyendo los resultados de las pruebas de laboratorio y de campo, refiérase al Anejo 2 que muestra los Registros de la Exploración del Subsuelo (*"Subsurface Exploration Logs"*).

Como se aprecia de la Tabla 1.0 **la posición del nivel freático no se encontró en ninguna de las exploraciones realizadas**.

Esto concluye el reporte de las pruebas de medición del nivel freático. En caso de alguna duda, siéntase en la libertad de contactarnos en cualquier momento; estamos para servirle.

Cordialmente,

Luis A. Rodríguez García, PE
Ingeniero de Proyecto
PIM Geotechnical Consultants, Inc.
Coto Laurel, Ponce, Puerto Rico

LUIS A. RODRIGUEZ GARCIA
INGENIERO LICENCIADO
LIC. 21993
PUERTO RICO

ANEJO 1: FIGURA DE LOCALIZACIÓN DE LOS BARRENOS EXPLORATORIOS PARA LA DETERMINACIÓN DEL PERFIL DE SUELOS Y EL NIVEL FREÁTICO

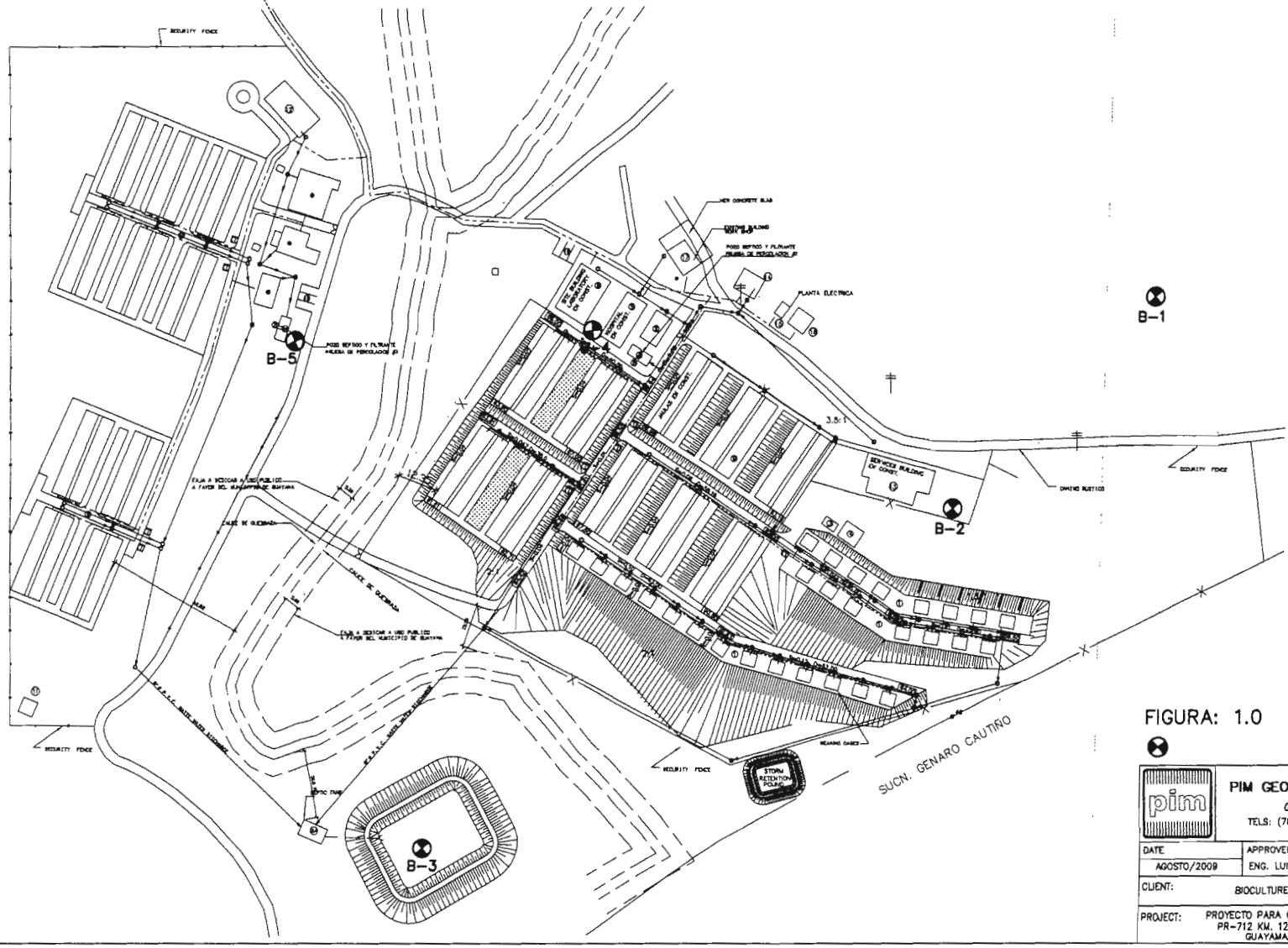


FIGURA: 1.0

PIM GEOTECHNICAL CONSULTANTS, INC

GEOTECHNICAL ENGINEERS

TELS: (787) 848-2075, 848-2085 FAX. 848-1562

DATE: AGOSTO/2009	APPROVED BY: ENG. LUIS A. RODRIGUEZ GARCIA, PE	DRAWING BY: JOSUE GARMON
CLIENT: BIOCULTURE P.R. INC.		SCALE AS SHOWN
PROJECT: PROYECTO PARA CRIANZA DE PRIMATES PR-712 KM. 12.9 BO. POZO HONDO, GUAYAMA, PUERTO RICO		1 OF 1

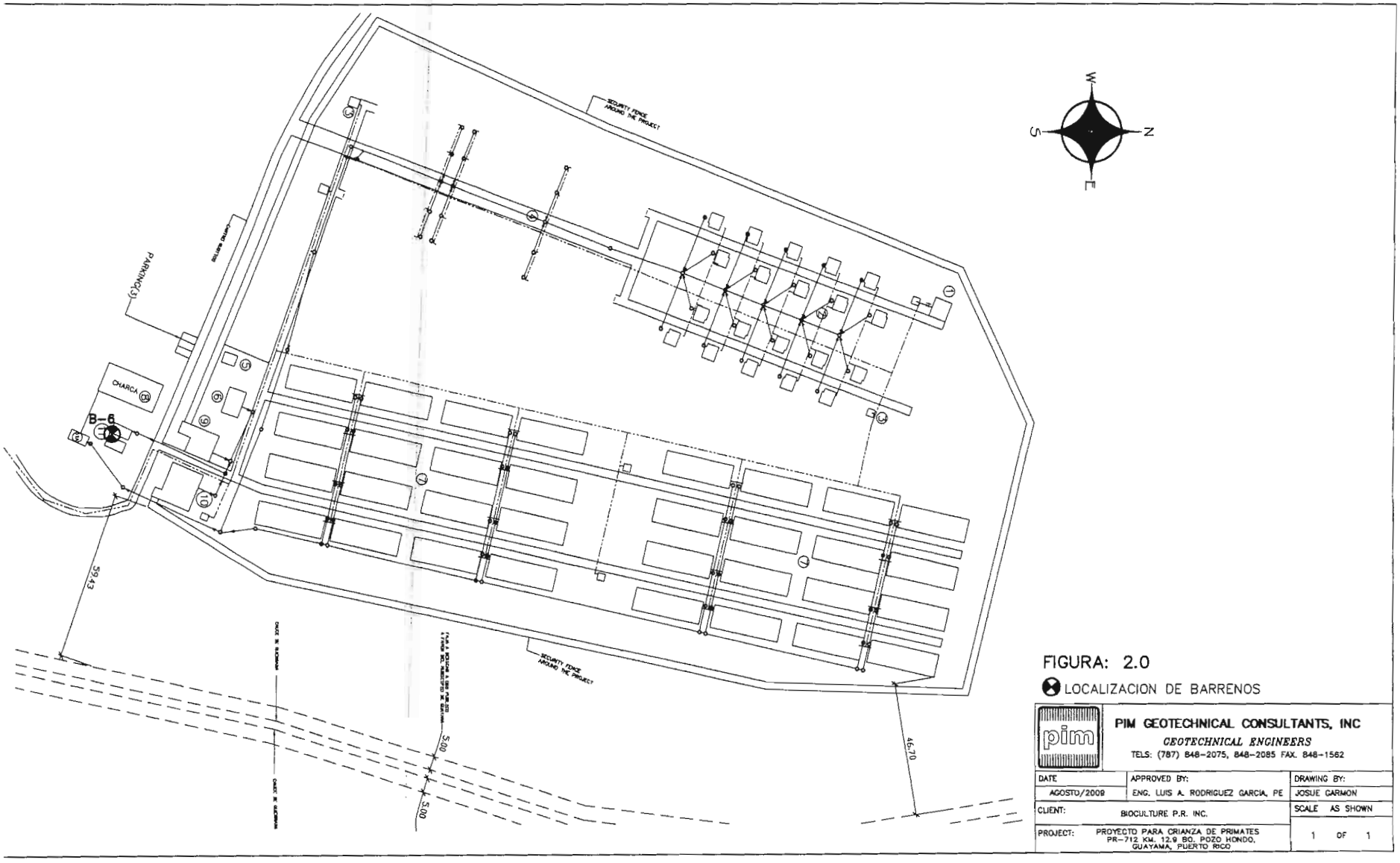


FIGURA: 2.0

LOCALIZACION DE BARRENOS

PIM GEOTECHNICAL CONSULTANTS, INC

GEOTECHNICAL ENGINEERS

TELS: (787) 848-2075, 848-2085 FAX. 848-1562

DATE	APPROVED BY:	DRAWING BY:
AGOSTO/2009	ENG. LUIS A. RODRIGUEZ GARCIA, PE	JOSUE GARMON
CLIENT: BIOCULTURE P.R. INC.		SCALE AS SHOWN
PROJECT: PROYECTO PARA CRIANZA DE PRIMATES PR-712 KM. 12.9 BO. POZO HONDO, GUAYAMA, PUERTO RICO		1 OF 1

ANEJO 2: REGISTROS DE LA EXPLORACIÓN DEL SUBSUELO

PIM Geotechnical Consultants, Inc.

SUBSURFACE EXPLORATION LOG

BORING NO. 01
SHEET 1 OF 1
LOCATION SEE SKETCH
CODE NO. PIM-09-014

PROJECT New Bioculture PR, Inc. Facilities, Guayama, PR
DRILLING METHOD: HOLLOW STEM AUGER
DRILL MACHINE CME 45 DRILLED BY E. SIERRA
HAMMER: WT 140# DROP 30" TYPE SAFETY
DEPTH OF WATER: N/A FT. AFTER COMPLETION
N/A FT. N/A HOURS AFTER COMPLETION

DATE STARTD 08/21/09
DATE CMPLTD 08/21/09
GROUND ELEV. N/A
DEPTH OF HOLE 5
LOGGED BY R. STGO.

DEPTH (FT)	SAMPLE NO.	LENGTH/ RECOVERY	SPT N-VALUE	R.Q.D.	SOIL SYMBOLS, SAMPLER SYMBOLS AND FIELD TEST DATA	MATERIAL DESCRIPTION	U.S.C.S. DESIGNATION	%<#200	MOISTURE CONTENT W_n	W_l	W_p	I_p	STRENGTH (TSF) q_u*	(x) ø**
0	01	7"/9"	REF.		12/6" 50/3"	ROCK FRAGMENTS AND SILTY SAND: brown, very dense, moist.			26					
4	02	2"/3"	REF.		50/3"	... dry.			03					
						AUGER REFUSAL 5.0-FT.								
8														
12														
16														
20														

U.S.C.S. - UNIFIED SOIL CLASSIFICATION SYSTEM DESIGNATION.
R.Q.D. - ROCK QUALITY DESIGNATION, IN PERCENT.
W_N,W_L,W_P AND I_P - NATURAL WATER CONTENT, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
REF.=REFUSAL
*q_u - UNCONFINED COMPRESSION STRENGTH; REPORTED VALUES OBTAINED FROM:
A. POCKET PENETROMETER
B. SPRING TEST
C. UNCONFINED COMPRESSION TEST
D. TRIAXIAL TEST
E. VANE TEST

** ø - EFFECTIVE INTERNAL FRICTION ANGLE; REPORTED VALUES OBTAINED FROM:
1. DIRECT SHEAR TEST REPORTING PEAK VALUE, $ø_p$
2. DIRECT SHEAR TEST REPORTING RESIDUAL VALUES $ø_r$
3. DIRECT SHEAR TEST REPORTING BOTH $ø_p$ AND $ø_r$
4. TRIAXIAL TEST REPORTING RESIDUAL VALUE, $ø_r$
5. TRIAXIAL TEST REPORTING PEAK VALUE $ø_p$
6. TRIAXIAL TEST REPORTING BOTH $ø_p$ AND $ø_r$

SAMPLER LEGEND
= AUGER = SPLIT SPOON = ROCK CORE = SHELBY TUBE = NO RECOVERY

PIM Geotechnical Consultants, Inc.

SUBSURFACE EXPLORATION LOG

BORING NO. 02
SHEET 1 OF 2
LOCATION SEE SKETCH
CODE NO. PIM-09-014

PROJECT New Bioculture PR, Inc. Facilities, Guayama, PR
DRILLING METHOD: HOLLOW STEM AUGER
DRILL MACHINE CME 45 DRILLED BY E. SIERRA
HAMMER: WT 140# DROP 30" TYPE SAFETY
DEPTH OF WATER: N/A FT. AFTER COMPLETION
N/A FT. N/A HOURS AFTER COMPLETION

DATE STARTD 08/21/09
DATE CMPLTD 08/21/09
GROUND ELEV. N/A
DEPTH OF HOLE 25
LOGGED BY R. STGO.

DEPTH (FT)	SAMPLE NO.	LENGTH/ RECOVERY	SPT N-VALUE	R.Q.D.	SOIL SYMBOLS, SAMPLER SYMBOLS AND FIELD TEST DATA	MATERIAL DESCRIPTION	U.S.C.S. DESIGNATION	%<#200	MOISTURE CONTENT W_n	W_l	W_p	I_p	STRENGTH (TSF) q_u*	(x) ø**
0	01	18"/ 18"	12		6/6" 5/6" 7/6"	CLAY: brown, stiff, rock fragments traces, moist.			15					
4	02	16"/ 18"	66		16/6" 22/6" 44/6"	ROCK FRAGMENTS AND SILTY SAND: yellowish brown, very dense, moist.			09					
8	03	1"/3"	REF.		50/3"	... very dense, dry.			04					
12	04	3.5"/ 5"	REF.		50/5"	...			07					
16	05	13"/ 16"	REF.		17/6" 34/6" 50/4"	... moist.			18					
20														

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R.Q.D. - ROCK QUALITY DESIGNATION, IN PERCENT.
W_N,W_L,W_P AND I_P - NATURAL WATER CONTENT, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
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D. TRIAXIAL TEST
E. VANE TEST

** ø - EFFECTIVE INTERNAL FRICTION ANGLE; REPORTED VALUES OBTAINED FROM:
1. DIRECT SHEAR TEST REPORTING PEAK VALUE, $ø_p$
2. DIRECT SHEAR TEST REPORTING RESIDUAL VALUES $ø_r$
3. DIRECT SHEAR TEST REPORTING BOTH $ø_p$ AND $ø_r$
4. TRIAXIAL TEST REPORTING RESIDUAL VALUE, $ø_r$
5. TRIAXIAL TEST REPORTING PEAK VALUE $ø_p$
6. TRIAXIAL TEST REPORTING BOTH $ø_p$ AND $ø_r$

SAMPLER LEGEND
= AUGER = SPLIT SPOON = ROCK CORE = SHELBY TUBE = NO RECOVERY

PIM Geotechnical Consultants, Inc.

SUBSURFACE EXPLORATION LOG

BORING NO. 02
SHEET 2 OF 2
LOCATION SEE SKETCH
CODE NO. PIM-09-014

DEPTH (FT)	SAMPLE NO.	LENGTH/ RECOVERY	SPT N-VALUE	R.Q.D.	SOIL SYMBOLS, SAMPLER SYMBOLS AND FIELD TEST DATA	MATERIAL DESCRIPTION	U.S.C.S. DESIGNATION	%<#200	MOISTURE CONTENT W_n	W_l	W_p	I_p	STRENGTH (TSF) q_u*	(x) ø**
24	06	3"/5"	REF.		50/5"	. . .			10					
						AUGER REFUSAL 25.0-FT.								
28														
32														
36														
40														
44														
48														
52														

PIM Geotechnical Consultants, Inc.

SUBSURFACE EXPLORATION LOG

BORING NO. 03
SHEET 1 OF 1
LOCATION SEE SKETCH
CODE NO. PIM-09-014

PROJECT New Bioculture PR, Inc. Facilities, Guayama, PR
DRILLING METHOD: HOLLOW STEM AUGER
DRILL MACHINE CME 45 DRILLED BY E. SIERRA
HAMMER: WT 140# DROP 30" TYPE SAFETY
DEPTH OF WATER: N/A FT. AFTER COMPLETION
N/A FT. N/A HOURS AFTER COMPLETION

DATE STARTD 08/20/09
DATE CMPLTD 08/20/09
GROUND ELEV. N/A
DEPTH OF HOLE 10
LOGGED BY R. STGO.

DEPTH (FT)	SAMPLE NO.	LENGTH/ RECOVERY	SPT N-VALUE	R.Q.D.	SOIL SYMBOLS, SAMPLER SYMBOLS AND FIELD TEST DATA	MATERIAL DESCRIPTION	U.S.C.S. DESIGNATION	%<#200	MOISTURE CONTENT W_n	W_l	W_p	I_p	STRENGTH (TSF) q_u*	(x) ø**
0	01	14"/ 18"	41		12/6" 15/6" 26/6"	ROCK FRAGMENTS AND SILTY SAND: brownish gray, dense, coarse to fine, dry.			07					
4	02	3"/5"	REF.		50/5"	... very dense.			06					
8	03	3"/4"	REF.		50/4"	...			03					
						AUGER REFUSAL 10.0-FT.								
12														
16														
20														

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R.Q.D. - ROCK QUALITY DESIGNATION, IN PERCENT.
W_N,W_L,W_P AND I_P - NATURAL WATER CONTENT, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
REF.=REFUSAL
*q_u - UNCONFINED COMPRESSION STRENGTH; REPORTED VALUES OBTAINED FROM:
A. POCKET PENETROMETER
B. SPRING TEST
C. UNCONFINED COMPRESSION TEST
D. TRIAXIAL TEST
E. VANE TEST

** ø - EFFECTIVE INTERNAL FRICTION ANGLE; REPORTED VALUES OBTAINED FROM:
1. DIRECT SHEAR TEST REPORTING PEAK VALUE, $ø_p$
2. DIRECT SHEAR TEST REPORTING RESIDUAL VALUES $ø_r$
3. DIRECT SHEAR TEST REPORTING BOTH $ø_p$ AND $ø_r$
4. TRIAXIAL TEST REPORTING RESIDUAL VALUE, $ø_r$
5. TRIAXIAL TEST REPORTING PEAK VALUE $ø_p$
6. TRIAXIAL TEST REPORTING BOTH $ø_p$ AND $ø_r$

SAMPLER LEGEND

= AUGER = SPLIT SPOON = ROCK CORE = SHELBY TUBE = NO RECOVERY

PIM Geotechnical Consultants, Inc.

SUBSURFACE EXPLORATION LOG

BORING NO. 04
SHEET 1 OF 1
LOCATION 3SEE SKETCH
CODE NO. PIM-09-014

PROJECT New Bioculture PR, Inc. Facilities, Guayama, PR
DRILLING METHOD: HOLLOW STEM AUGER
DRILL MACHINE CME 45 DRILLED BY E. SIERRA
HAMMER: WT 140# DROP 30" TYPE SAFETY
DEPTH OF WATER: N/A FT. AFTER COMPLETION
N/A FT. N/A HOURS AFTER COMPLETION

DATE STARTD 08/18/09
DATE CMPLTD 08/18/09
GROUND ELEV. N/A
DEPTH OF HOLE 10
LOGGED BY R. STGO.

DEPTH (FT)	SAMPLE NO.	LENGTH/ RECOVERY	SPT N-VALUE	R.Q.D.	SOIL SYMBOLS, SAMPLER SYMBOLS AND FIELD TEST DATA	MATERIAL DESCRIPTION	U.S.C.S. DESIGNATION	% <#200	MOISTURE CONTENT W_n	W_l	W_p	I_p	STRENGTH (TSF) q_u*	(x) ø**
0	01	18"/ 18"	16		6/6" 5/6" 11/6"	CLAY: dark brown, very stiff, moist.			27				4.0A	
4	02	16"/ 18"	35		8/6" 11/6" 24/6"	... hard.			23				4.5A	
8	03	7"/9"	REF.		44/6" 50/3"	ROCK FRAGMENTS AND SILTY SAND: brown, very dense, coarse to fine, dry. AUGER REFUSAL 10.0-FT.			06					
12														
16														
20														

U.S.C.S. - UNIFIED SOIL CLASSIFICATION SYSTEM DESIGNATION.
R.Q.D. - ROCK QUALITY DESIGNATION, IN PERCENT.
W_N,W_L,W_P AND I_P - NATURAL WATER CONTENT, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
REF.=REFUSAL
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D. TRIAXIAL TEST
E. VANE TEST

** ø - EFFECTIVE INTERNAL FRICTION ANGLE; REPORTED VALUES OBTAINED FROM:
1. DIRECT SHEAR TEST REPORTING PEAK VALUE, $ø_p$
2. DIRECT SHEAR TEST REPORTING RESIDUAL VALUES $ø_r$
3. DIRECT SHEAR TEST REPORTING BOTH $ø_p$ AND $ø_r$
4. TRIAXIAL TEST REPORTING RESIDUAL VALUE, $ø_r$
5. TRIAXIAL TEST REPORTING PEAK VALUE $ø_p$
6. TRIAXIAL TEST REPORTING BOTH $ø_p$ AND $ø_r$

SAMPLER LEGEND

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HERIBERTO A. TORRES OLIVIERI, MS, PE

CIVIL AND ENVIRONMENTAL ENGINEERING CONSULTANT
2109 CALLE MÓNACO APT 410, PONCE, PR 00716
TEL. (787) 501-0839Fax (787) 841-2082 email: hatorres11@gmail.com; hatorres@coqui.net

CERTIFICACIÓN

PRUEBA DE PERCOLACIÓN

TIEMPO DE PERCOLACIÓN PARA LAS ÚLTIMAS 6 PULGADAS

65.5 MINUTOS

PROMEDIO DE TIEMPO (MINUTOS/ PULGADA)

10.92

LOCALIZACIÓN DE LA PRUEBA

N 18-00-58
W 66-09-12

CERTIFICO QUE ESTA PRUEBA FUE REALIZADA SEGÚN EL PROCEDIMIENTO ESTÁNDAR DE PRUEBAS DE PERCOLACIÓN (SEGÚN EJEMPLO EN DOCUMENTO ARPE15.69 REV. ABR 2003)

ING. HERIBERTO A. TORRES OLIVIERI
LIC 14527-PE
8 DE SEPTIEMBRE DE 2009

PIM Geotechnical Consultants, Inc.

SUBSURFACE EXPLORATION LOG

BORING NO. 04
SHEET 1 OF 1
LOCATION 3SEE SKETCH
CODE NO. PIM-09-014

PROJECT New Bioculture PR, Inc. Facilities, Guayama, PR
DRILLING METHOD: HOLLOW STEM AUGER
DRILL MACHINE CME 45 DRILLED BY E. SIERRA
HAMMER: WT 140# DROP 30" TYPE SAFETY
DEPTH OF WATER: N/A FT. AFTER COMPLETION
N/A FT. N/A HOURS AFTER COMPLETION

DATE STARTD 08/18/09
DATE CMPLTD 08/18/09
GROUND ELEV. N/A
DEPTH OF HOLE 10
LOGGED BY R. STGO.

DEPTH (FT)	SAMPLE NO.	LENGTH/ RECOVERY	SPT N-VALUE	R.Q.D.	SOIL SYMBOLS, SAMPLER SYMBOLS AND FIELD TEST DATA	MATERIAL DESCRIPTION	U.S.C.S. DESIGNATION	%<#200	MOISTURE CONTENT W_n	W_l	W_p	I_p	STRENGTH (TSF) q_u*	(x) ø**
0	01	18"/ 18"	16		6/6" 5/6" 11/6"	CLAY: dark brown, very stiff, moist.			27				4.0A	
4	02	16"/ 18"	35		8/6" 11/6" 24/6"	... hard.			23				4.5A	
8	03	7"/9"	REF.		44/6" 50/3"	ROCK FRAGMENTS AND SILTY SAND: brown, very dense, coarse to fine, dry. AUGER REFUSAL 10.0-FT.			06					
12														
16														
20														

U.S.C.S. - UNIFIED SOIL CLASSIFICATION SYSTEM DESIGNATION.
R.Q.D. - ROCK QUALITY DESIGNATION, IN PERCENT.
W_N,W_L,W_P AND I_P - NATURAL WATER CONTENT, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
REF.=REFUSAL
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** ø - EFFECTIVE INTERNAL FRICTION ANGLE; REPORTED VALUES OBTAINED FROM:
1. DIRECT SHEAR TEST REPORTING PEAK VALUE, $ø_p$
2. DIRECT SHEAR TEST REPORTING RESIDUAL VALUES $ø_r$
3. DIRECT SHEAR TEST REPORTING BOTH $ø_p$ AND $ø_r$
4. TRIAXIAL TEST REPORTING RESIDUAL VALUE, $ø_r$
5. TRIAXIAL TEST REPORTING PEAK VALUE $ø_p$
6. TRIAXIAL TEST REPORTING BOTH $ø_p$ AND $ø_r$

SAMPLER LEGEND

= AUGER = SPLIT SPOON = ROCK CORE = SHELBY TUBE = NO RECOVERY

PIM Geotechnical Consultants, Inc.

SUBSURFACE EXPLORATION LOG

BORING NO. 05
SHEET 1 OF 1
LOCATION SEE SKETCH
CODE NO. PIM-09-014

PROJECT New Bioculture PR, Inc. Facilities, Guayama, PR
DRILLING METHOD: HOLLOW STEM AUGER
DRILL MACHINE CME 45 DRILLED BY E. SIERRA
HAMMER: WT 140# DROP 30" TYPE SAFETY
DEPTH OF WATER: N/A FT. AFTER COMPLETION
N/A FT. N/A HOURS AFTER COMPLETION

DATE STARTD 08/19/09
DATE CMPLTD 08/19/09
GROUND ELEV. N/A
DEPTH OF HOLE 20
LOGGED BY R. STGO.

DEPTH (FT)	SAMPLE NO.	LENGTH/ RECOVERY	SPT N-VALUE	R.Q.D.	SOIL SYMBOLS, SAMPLER SYMBOLS AND FIELD TEST DATA	MATERIAL DESCRIPTION	U.S.C.S. DESIGNATION	%<#200	MOISTURE CONTENT W_n	W_l	W_p	I_p	STRENGTH (TSF) q_u*	(x) ø**
0	01	18"/ 18"	12		4/6" 6/6" 6/6"	CLAY: dark brown, stiff, moist.			19				4.5A	
4	02	7"/ 18"	28		5/6" 16/6" 12/6"	... very stiff.			14				4.5A	
8	03	3"/5"	REF.		50/5"	ROCK FRAGMENTS AND SILTY SAND: grayish brown, very dense, coarse to fine, dry.			06					
12	04	2.5"/ 5"	REF.		50/5"	...			04					
16	05	4"/5"	REF.		50/5"	...			06					
20						AUGER REFUSAL 20.0-FT.								

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R.Q.D. - ROCK QUALITY DESIGNATION, IN PERCENT.
W_N,W_L,W_P AND I_P - NATURAL WATER CONTENT, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
REF.=REFUSAL
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** ø - EFFECTIVE INTERNAL FRICTION ANGLE; REPORTED VALUES OBTAINED FROM:
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2. DIRECT SHEAR TEST REPORTING RESIDUAL VALUES $ø_r$
3. DIRECT SHEAR TEST REPORTING BOTH $ø_p$ AND $ø_r$
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5. TRIAXIAL TEST REPORTING PEAK VALUE $ø_p$
6. TRIAXIAL TEST REPORTING BOTH $ø_p$ AND $ø_r$

SAMPLER LEGEND
= AUGER = SPLIT SPOON = ROCK CORE = SHELBY TUBE = NO RECOVERY

PIM Geotechnical Consultants, Inc.

SUBSURFACE EXPLORATION LOG

BORING NO. 06
SHEET 1 OF 2
LOCATION SEE SKETCH
CODE NO. PIM-09-014

PROJECT New Bioculture PR, Inc. Facilities, Guayama, PR
DRILLING METHOD: HOLLOW STEM AUGER
DRILL MACHINE CME 45 DRILLED BY E. SIERRA
HAMMER: WT 140# DROP 30" TYPE SAFETY
DEPTH OF WATER: N/A FT. AFTER COMPLETION
N/A FT. N/A HOURS AFTER COMPLETION

DATE STARTD 08/20/09
DATE CMPLTD 08/20/09
GROUND ELEV. N/A
DEPTH OF HOLE 25
LOGGED BY R. STGO.

DEPTH (FT)	SAMPLE NO.	LENGTH/ RECOVERY	SPT N-VALUE	R.Q.D.	SOIL SYMBOLS, SAMPLER SYMBOLS AND FIELD TEST DATA	MATERIAL DESCRIPTION	U.S.C.S. DESIGNATION	%<#200	MOISTURE CONTENT W_n	W_l	W_p	I_p	STRENGTH (TSF) q_u*	(x) ø**
0	01	12"/ 18"	17		4/6" 6/6" 11/6"	CLAY: grayish brown, very stiff, organic roots traces, moist.			15					
4	02	14"/ 18"	22		7/6" 9/6" 13/6"	... gray, no roots.			13					
8	03	12"/ 18"	86		14/6" 44/6" 42/6"	ROCK FRAGMENTS AND SILTY SAND: grayish brown, very dense, dry.			05					
12	04	3"/5"	REF.		50/5"	...			03					
16	05	2.5"/ 4"	REF.		50/4"	...			03					
20														

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R.Q.D. - ROCK QUALITY DESIGNATION, IN PERCENT.
W_N,W_L,W_P AND I_P - NATURAL WATER CONTENT, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
REF.=REFUSAL
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A. POCKET PENETROMETER
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E. VANE TEST

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3. DIRECT SHEAR TEST REPORTING BOTH $ø_p$ AND $ø_r$
4. TRIAXIAL TEST REPORTING RESIDUAL VALUE, $ø_r$
5. TRIAXIAL TEST REPORTING PEAK VALUE $ø_p$
6. TRIAXIAL TEST REPORTING BOTH $ø_p$ AND $ø_r$

SAMPLER LEGEND

= AUGER = SPLIT SPOON = ROCK CORE = SHELBY TUBE = NO RECOVERY

PIM Geotechnical Consultants, Inc.

SUBSURFACE EXPLORATION LOG

BORING NO. 06
SHEET 2 OF 2
LOCATION SEE SKETCH
CODE NO. PIM-09-014

DEPTH (FT)	SAMPLE NO.	LENGTH/ RECOVERY	SPT N-VALUE	R.Q.D.	SOIL SYMBOLS, SAMPLER SYMBOLS AND FIELD TEST DATA	MATERIAL DESCRIPTION	U.S.C.S. DESIGNATION	%<#200	MOISTURE CONTENT W_n	W_l	W_p	I_p	STRENGTH (TSF) q_u*	(x) ø**
24	06	.5"/ 1"	REF.		50/1"	AUGER REFUSAL 25.0-FT.								
28														
32														
36														
40														
44														
48														
52														

BIOCULTURE (Puerto Rico) WORK INSTRUCTIONS

Section	**: WI64-02**	**Issue No.**	**: 6**
Title	**: Use of water**	**Date of Issue**	**: 13 October 2008**
Compiled by	**:Vice-President**	**Approved by**	**: President**

Sites applicable: All

Policies:

1. Town water is available at all sites for all animals on a 24 hour basis for drinking purposes.

Types of water used

Town water	- Drinking purposes - Cleaning purposes
Treated borehole water	- Cleaning purposes – used as reserve in case there is no water

	Activities	Responsibilities	Notes	Records
1	– Ensure adequate supply for drinking purposes.	Site Supervisor/ Infrastructure Personnel	– Stored in high capacity storage tanks with at least 24 hours stock. – Distributed to all cages through water nipples. – Complete Dosing Pump Daily Inspection Form (QR63-14A) and Water Pump Weekly Inspection Form (QR63-14B) for borehole water.	QR63-14A QR63-14B
2	**Monitoring of water nipples.** – Verify all water nipples on a daily basis to ensure they are in good working condition.	Site Supervisor / Animal Caretaker Infrastructure Personnel	– Done during daily cleaning. – Ensure that nipples in internal buildings are also verified. – Liaise with Maintenance Officer in case of repairs.	QR63-04
	– Disinfection of all water nipples twice weekly.	Site Supervisor/ Animal Caretaker	– DSC 200 in high pressure network. Use dilution chart **(TAB7-1).**	**(TAB7-1)**
3	**Disinfection of water tanks.** – Planning for disinfection.	Site Supervisor/ Infrastructure Personnel	– Done every six months. – Ensure that there will be no shortage of water. – Indoor cages must be empty. – Plan for personnel.	–
	– Empty all tanks and water lines due for disinfection.	Site Supervisor/ Infrastructure Personnel	– Water inlet valves closed on the eve where needed.	–
	– Introduce disinfectant 4:1000 into storage tank and pump throughout piping distribution network. – Dilution to be done by Site Supervisor/ Materials Storekeeper.	Site Supervisor/ Infrastructure Personnel	– Sodium Hypochlorite (Javel) used as disinfectant. – Use dilution chart (TAB7-1). – Place water nipples outside cages or in corridors. – Personnel to stand by to prevent animals having access to water nipples. – Disinfectant allowed to stand for 30 minutes in storage tanks.	**TAB7-1**
	– Thorough cleaning of tank interior	Site Supervisor/ Infrastructure Personnel	– Personnel designated to enter storage tank must wear appropriate boots. – Tank is brushed thoroughly and cleaned with hose water to remove all dirt.	–
	– Flushing of disinfectant	Site Supervisor/ Infrastructure Personnel	– All solution flushed through taps and water nipples.	–

	Activities	Responsibilities	Notes	Records
	– Rinsing	Site Supervisor/ Infrastructure Personnel	– Tank is rinsed thoroughly with water and flushed out. – Repeated to ensure network is free from disinfectant.	--
	– Use of storage tank	Site Supervisor/ Infrastructure Personnel	– Tank exterior is cleaned and rinsed. – Tank is filled and made operational. – All water nipples secured back to normal position. – Maintain records in QR63-23: Disinfection of water tanks/lines.	QR63-23
4	**Monitor quality of water.** – Liaise with BCM approved laboratory for regular testing of water.	Operations Manager	– Contractual agreement. – Tests performed every three months. – Drinking water to comply with CWA requirements.	--
	– Follow-up with testing laboratory to ensure schedule for testing is adhered to.	Operations Manager/ Site Supervisor/ Maintenance Officer	– Inform Site Supervisor and Maintenance Officer on scheduled date of sampling. – Samples collected from: .Water nipples * Water before entry into storage * .tanks .Water at exit of storage tanks *	--
	– Receipt of test results and review.	Operations Manager	– Compare results received with acceptable norms. – Take corrective action in case of unsatisfactory results. – File all test results in file for water analysis.	File for water analysis

Records and Specification Tables

Record Ref	Title
QR63-14A	Dosing Pump Daily Inspection Form
QR63-14B	Water Pump Weekly Inspection Form
QR63-23	Disinfection of Water Tanks/Lines
TAB7-1	Dilution Chart
--	File-Water Analysis

Animal Welfare issues

1. Ensure availability of drinking water at all times.
2. Water nipples must be carefully positioned and easily accessible for infants as well as adults.
3. Any shortage/problem with drinking water must be considered as serious and dealt with as high priority.
4. In case of shortage of town water, immediately seek for alternate supply.
6. A minimum stock of 48 hours consumption of water must be available.

BIOCULTURE Puerto Rico Inc
WORK INSTRUCTION

Section	**: WI64-04**	**Issue No.**	**: 1**
Title	**: Cleaning and disinfection of outdoor cages**	**Date of Issue**	**: 1st Sept 2009**
Compiled by	**: Vice-President**	**Approved by**	**: President**

Sites applicable: All

Working Protocol

Policies:

1. All cages are cleaned on a daily basis in order to ensure that animals are housed in good conditions.
2. All cages are bleached prior to housing of new colonies.
3. Each block of cages is equipped with a dedicated set of cleaning tools except for water pressure cleaner accessories.

4.

	Activities	Responsibilities	Notes
1	**OUTDOOR CAGES** **Cleaning:** - Wear protective equipment. - Ensure adequacy of cleaning tools. - Enter cages. - For breeding cages, direct animals through communicating door to other side of cage if necessary.	Animal Caretaker	- Follow instructions WI71-01 for entering of cages.
	- Observe for any abnormal situation and report to Veterinarian, if any. - Immediately report on serious injuries, deaths, sick/weak animals, births. - Also verify cages for any damage/ deterioration.	Animal Caretaker	-
	- Corn cobs, solid pineapple heads and damaged toys are removed manually from cages if necessary. - Where empty cages get splashing, this must also be cleaned.	Animal Caretaker	-
	- Disposal of solid waste to the compost production area.	Site Supervisor/ Animal Caretaker	
	- Connect pressure gun to central pressure piping system.	Animal Caretaker	- Wear protective equipment.
	- Pressure cleaning of cages. - Do not point pressure gun towards animals. - Pressure clean in an orderly manner, i.e. upper half of cage first (including shutters), followed by playing devices, platforms and finally floors. - For internal cages, cleaning done with water hose and brush. - Food hoppers are pressure cleaned twice weekly but cleaned with tap water on a daily basis	Animal Caretaker Animal Caretaker	
	- Start spraying in a systematic manner. - Ensure whole cage including corners, hidden surfaces, enrichment devices are sprayed. - Ensure manholes are sprayed fortnightly with insecticide. - Wash sprayer thoroughly and return to storekeeper. - Spraying is done in a diligent and thorough manner.	Animal Caretaker/ Site Supervisor	- No other activity must be done in cage/block of cages.

	Activities	Responsibilities	Notes
	Disinfection: – Disinfection of cages including enrichment devices and food hoppers twice weekly except for weaner cages which is thrice weekly. – Ensure whole cage including corners, hidden surfaces, enrichment devices are thoroughly disinfected after having been thoroughly cleaned.	Animal Caretaker	– Wear protective equipment. – Disinfection: Through pressure cleaning system
	– Site Supervisor/Storekeeper to prepare disinfectant in the prescribed dilution ratio. – Animal Caretaker proceeds with disinfection,	Site Supervisor/ Storekeeper	– Disinfectant used as per Dilution Chart
	– Spraying of cages. – Done with bleach within 24 hours after cages have been emptied.	Animal Caretaker/ Animal Technician	– Done at the request of Vet Staff in case of diseases (e.g. diarrhoea). – Done in case of lice infestation (insecticide spraying, prophylactic dip).
2	**TRANSPORT CAGES** – Ensure transport cages are cleaned and disinfected after every use.	Site Supervisor/ Animal Handler	– When used within site must be done on same day or next morning. – When used to transfer animals to other sites, Site Supervisor at transit site ensures cleaning and disinfection. Furthermore return transport cages back to designated site within 2 working days. – Use dilution chart for dilution ratio of disinfectant.

	Activities	Responsibilities	Notes
3	**FOOT BATHS** - Cleaning done on weekly basis and disinfectant renewed. - In case of intensive activity, disinfectant changed as frequently as necessary. - In periods of heavy rainfall use test tape kit to ensure effectiveness of solution.	Site Supervisor	- Make use of Dilution Chart.
	- Monitoring of all sites to ensure cages are kept clean and disinfected.	Facility Manager	--

Records

Record ref	Title
QR5-05	Minutes of Meeting
QR63-28	Management Checklist for Site Inspection
TAB6-7	Checklist for uniforms and PPE
TAB7-1	Dilution Chart
TAB64-01	Cleaning and disinfection Matrix

Animal welfare issues:

- Enter cages with minimum noise.
- Enter cages slowly, do not rush through.
- Do not stare at animals.
- Spend minimal time in cage when spraying.
- Do not spray directly on animals or food.
- Use only chemicals that are safe for animals and adhere to the dilution ratio.
- Ensure that chemicals are used by trained personnel.

BIOCULTURE Puerto Rico WORK INSTRUCTIONS

Section	**: WI64-06**	**Issue No.**	**: 1**
Title	**: Pest control**	**Date of Issue**	**: 1st Sept 2009**
Compiled by	**: Vice-President**	**Approved by**	**: President**

Sites applicable: All

Working Protocol

Policy:

1. BCPR implements a program for pest control at all its sites.

Possible types of pests: Cockroaches, flies, snails, rats, mice, ants

Type of pest	Possible location	Method of control	Responsibilities
Cockroaches	Outdoors (including fresh food store).	– Keep premises clean and tidy. – Areas where waste bins are located must be kept clean and tidy. – In case of infestation, spray infested area every alternate day for one week.	Site Supervisor
	Indoors – Office – Hospital Complex – Stores – Laundry area – Mess room	– Areas to be kept clean, neat and tidy. – Insecticide spraying every three months. In case of infestation, spray area and repeat after 2 weeks.	Site Supervisor/
Flies	Outdoors	– Place fly traps around food store area if necessary (In case of fly infestation). – All waste bins for composting removed and cleaned daily. – Site to be kept clean and tidy. – Insecticide spraying of infested areas in case of major fly-infestation.	Site Supervisor/ Food Storekeeper
	Indoors	– Areas to be kept clean, neat and tidy. – Insect netting placed at the openings of all internal buildings that house animals. – Insecticide spraying every three months. – Insecticide spraying done in case of infestation.	Site Supervisor

Type of pest	Possible location	Method of control	Responsibilities
Snails	Outdoors	- Keep perimeter of cages clean and tidy. - During rainy periods, place snail pellets around cages and rat poison stations. - During rainy periods, regularly monitor for snail presence around cages. Destroy them upon detection.	Site Supervisor
Rats, mice	Outdoors	- All cages to have at least one meter wall either raised above ground level or around perimeter. - Drainage pipes equipped with metal strainers. - Manhole covers rat proof and fixed tightly at all times. Closed immediately after cleaning of manholes. - Physical rodent destruction campaign every 3 months. - Sites kept clean and tidy. - Monitoring of rat bait stations to be done weekly. However, if presence of rodents suspected in a zone, to conduct twice weekly inspection.	Site Supervisor
	Indoors	- Keep areas clean and tidy. - Physical traps and poison baits verified regularly.	Site Supervisor/

Type of pest	Possible location	Method of control	Responsibilities
Ants	Outdoors	– Insecticide spraying upon infestation.	Site Supervisor
	Indoors	– Keep areas clean and tidy. – Insecticide spraying every three months and also upon infestation.	Site Supervisor/
Stray animals	All types	– All BPR sites are fenced and have razor wire and thus no stray animals should be found on sites. – Entrance gates to be kept closed.	Site Supervisor

Records

Record ref	Title
QR5-05	Minutes of Management/Staff meeting
QR63-01	Security Log Book
QR64-12	Cleaning, Disinfection and Pest Control Record

Animal welfare issues:

1. All precautions must be taken to avoid any diseases to monkeys as a result of presence of pests.
2. Traps/poison baits only to be placed in such areas where monkeys cannot have direct access.
3. Insecticides must be carefully sprayed to avoid contact with monkeys as far as possible.

Section	: QP501	Issue No.	: 6
Title	: Visitors control	Date of Issue	: 25 February 2009
Compiled by	: General Manager	Approved by	: General Manager

1. **Scope**

The purpose of this section is to define the procedures for the control of visitors at BCPR.

2. **Responsibilities**

2.1. The General Manager/Operations Manager/Senior Vet/ Site Supervisor are responsible to grant/deny access to any visitor to our premises as applicable.

4. **Policy**

4.1 BCPR has a no visitor policy except otherwise authorized by Management.

7. Procedures

Type of visitor	Definition	Access zone	Pass	Control measures
Group 1	– Job seekers – Private visits – Business visits	Zone A	Green	– Approval received from BCPR contact person. – Visitor accompanied at all times
Group 2	– Suppliers – Service providers – Govt. officials	Zone A	Orange	– For construction: list of personnel + photo approved by Operations Manager – Non regular visitors must be accompanied and approval obtained.
		Zone B	Red	– Approval from Management required. – Visitors to be accompanied unless otherwise instructed by Management. – Inform Site Supervisor/ contact person for monitoring purposes.
Group 3	– Customers – Foreign Govt. officials	Zone B	Red	– Approval of General Manager/ Accounts and Planning Manager required. – General Manager / Accounts and Planning Manager to request completion of Visitor's Form (QR5-09) prior to visit. – Visitor to be accompanied at all times. – Protective clothing to be worn in case of entering Zone B.

Zone A: Reception, delivery areas, changing areas and administrative section.

Zone B: All areas where use of Personal Protective Equipment is mandatory and access restricted, authorization must be obtained for visitors.

	Activities	Responsibilities	Records
1	**Visitor reports to Security Officer**: - In case of regular visitors, issue relevant pass, complete the Vehicle/Visitor's Log Book. Record the pass number issued and let visitor in.	Security Officer	QR5-01
	- In case visitor is not known, confirm purpose of visit, seek authorization from concerned person (must be a Head of Department). Issue relevant pass and complete Vehicle/ Visitor's Log Book. Record pass number issued. Accompany visitor to concerned person. DO NOT ALLOW ACCESS IF AUTHORISATION HAS NOT BEEN OBTAINED.	Security Officer	QR5-01
	- In case of group 3 visitors, General Manager/ Accounts and Planning Manager to ensure adequacy of health status.	General Manager/ Accounts and Planning Manager	QR5-09
2	For visitors involved in construction works in Zone B, Technical Officer/ Operations Manager to prepare list of names along with I.D photographs. These are affixed at all sites and reviewed every six months. Before every major project such visitors are also briefed on the importance of animal wellbeing.	Operations Manager/ Technical Officer/ Animal Welfare Officer	QR5-08
3	Upon departure, visitor to return visitor's pass. Security Officer confirms same pass is returned and records entry in Vehicle/Visitor's Log Book.	Security Officer	QR5-01
4	In case visitor has not returned pass, report to Security Manager for necessary action.	Security Officer	--
5	Report to Site Supervisor in case any person external to BCMPR is found on the premises without a visitor's pass. Complete Process Nonconformity Record on IAMS.	All personnel	--
6	Vehicle control by Security Officer: - For every entry to or exit from site, record is made in Vehicle/Visitor's Log Book.	Security Officer	QR5-01
7	Number of Access Pass per security gate: - A minimum of 5 Green Access Pass 15 Orange Access Pass 15 Red Access Pass - Technical Officer to inform Security Manager when planning for major works on site. - Amount to be reviewed and maintained as and when required so that every visitor and contractors personnel can be issued with an access pass.	Security Manager Technical Officer Security Manager	--

Records

Record ref	Title
QR5-01	Vehicle/Visitor's Log Book
QR5-08	List of Contractor's Personnel on Site
QR5-09	Visitor's Form

Animal welfare issues

1. Visitors are not authorized to come close to cages unnecessarily.

BIOCULTURE PR LTD
PROCEDURE MANUAL

Section	**: QP 805-03**	**Issue No.**	**: 2**
Title	**: Disaster preparedness plan**	**Date of Issue**	**: 20 August 2009**
		Page	**: 1 of 3**

1. Scope

The purpose of this procedure is to define how the Organization responds to a disaster in the event of its occurrence.

2. Associated documents

ISO 9001: 2000 Section 8.5
NRC Guide for the care and use of laboratory animals: Chapter 1
Quality Manual: QM108
Procedure Manual: QP805-01, QP805-02

3. Distribution list:

All Heads of Department
Mechanical & Electrical Supervisor
Site Supervisors
Vet Staff
Technical Officer

4. Responsibilities

.1 BCPR Management team is responsible for the effective implementation of this procedure.

.2 All designated persons identified shall make themselves available as required.

5. Working protocol

6. Policies:

.1 BCPR prepares an action plan in response to any disaster based on its specificities.

7. Definition of "disaster" within context of BCPR activities/operations:

Any situation which leads to the significant disruption of normal activities as a result of natural calamities or other acts is termed a disaster.

Compiled by:
Management Team

8. Situations for a disaster

.1 BCPR could face a disaster situation under any of the following conditions:

- After a severe Tropical storm
- Severe flood
- Severe drought
- Fire
- Disease outbreak (human or animal)
- Sabotage
- Attack of BCPR premises by animal rights activists
- Explosion on site
- Epidemic in neighbouring human population
- Complete loss of computer data

.2 It is pointed out that the above situations will be deemed disasters based upon their severity and impact on BCPR operations.

.3 The decision to classify any of the above situations as disaster is determined by BCMPR Management team.

9. General procedures

.1 BCPR Management team meets urgently in disaster situation and prepares an action plan for response. The action plan is specific based on the nature/situation which caused the disaster and generally includes the following:

- An assessment of the disaster and its impact on : Humans
  Animals
  Infrastructure

- Determination of the root cause of the disaster.

- Establish list of actions and prioritize them.

- Establish working group(s), identify leader(s) and define responsibilities with timeframes, if applicable.

- Consider the need to inform/communicate to:

  - Police department
  - Health authorities
  - Fire services
  - Neighbourhood community representatives
  - Press releases/communiqués
  - Division of Veterinary Services
  - Customers
  - Major suppliers
  - Airlines
  - Natural Resources
  - Hospitals/Clinics
  - Vet Consultant(s)
  - Personnel
  - Any other stakeholder

- Decide who will communicate and the extent of information to be communicated.

- Consider the need to restrict access/movement within/between sites.

- Identify institutions (local/overseas) to be contacted for technical/expert advice.

- Determine whether additional assistance (e.g. police) would be required.

- Forecast how much time would be needed to get BCPR back to normal and plan for essential activities for this period of time.

.2 BCPR maintains a list of persons along with contact details for disaster response. This list is updated by the Confidential Secretary on a yearly basis.

.3 The procedures for corrective and preventive actions (QP 805-01) and emergency situations (QP 805-02) are reviewed after any disaster.

10. Records

Record ref	Title
QR 85-09	Disaster response contact list
QR 85-10	Disaster Assessment Report

BIOCULTURE Puerto Rico PROCEDURE MANUAL

Section	**: QP805-02**	**Issue No.**	**: 1**
Title	**: Emergency situations**	**Date of Issue**	**: 1st Sept 2009**
Compiled by	**: Vice -President**	**Approved by**	**: President**

1. **Scope**

The purpose of this procedure is to define the steps to be followed at BCPR in the event of an emergency.

4. **Responsibilities**

4.1 The Facility Manager is responsible for the effective implementation of this procedure.

5. **Working Protocol**

6. **Policies**

6.1. The Storm Emergency Team list should be available in each Security personnel Office.

7. **Procedures**

	Activities	Responsibilities
1.	**Tropical Storm Watch** Establish Storm emergency team for an annual basis for each site and designate team leaders.	Facility Manager
	Upon issue of storm warning by the Meteorological office, carefully study the trajectory forecast and its magnitude.	Facility Manager
	Site Supervisor to liaise with concerned dept and ensure all items in checklist have been thoroughly verified.	Site Supervisor
	Visit all sites and ensure the safety of equipment and installations.	Site Supervisor/ Maintenance Officer
	Upon Issue of Hurricane Watch (refer to Annex 1): All company vehicles users to fill up their respective vehicle.	All company vehicles users
	For tunnel cages, close access to tunnels depending on assessment of weather conditions.	Site Supervisor
	Upon Issue of Hurricane warning: If early during the day, immediately upon issue of **warning** (refer to Annex 1), ensure all animals are fed with their normal food ration. Pellets and bread are also provided weather permits. If heavy rains prevail, a double fresh food ration is given in lieu of pellets.	Food Storekeeper
	All personnel go back home except those in Emergency Teams unless otherwise decided by Management based upon hurricane magnitude or trajectory forecast.	Site Supervisor

	Activities	Responsibilities
	Note: While doing the following, the team leader shall make proof of good judgment in order not to compromise safety of team members. Emergency team to make hourly rounds of site in groups and: a. Check any major damage to cages due to fallen trees or branches. b. Stop the generator for one hour after each 3 hours running. Clear drains in case they are blocked. c. Transfer any sick/injured animals to appropriate indoor buildings. d. Attend to provisional repairs where possible to buildings damaged (e.g. seal broken windows).	Emergency team
	After the Hurricane: a. Make preliminary assessment of damage sustained. b. Attend to urgent actions required if possible. c. Feed animals with their normal ration (pellets can be given if weather permits otherwise double fresh food ration given). d. Report salient issues to personnel upon their arrival. e. Emergency teams leave the sites. f. Vet staff to conduct thorough verification and report their findings in cyclone report. g. Ensure availability of water for animals in case there is no town water supply.	Each Head of Department Food Storekeeper Vet Staff
	Hurricane Report a. Emergency team leader to complete Hurricane Report and submit to Facility Manager. b. Maintenance officer to conduct survey on all sites and prepare the Infrastructure Damage Report within 24 hours of lifting of hurricane warning.	Emergency Team Leader Maintenance officer
	Both Hurricane Report and Infrastructure Damage Report are discussed by Management. The effectiveness of this procedure is assessed and actions deemed necessary are initiated.	Facility Manager/ Management
	Actions taken with respect to hurricane reports are discussed during Ethical Review Committee meetings if relevant.	Facility Manager

	Activities	Responsibilities
2.	**Floods** In case of heavy rains, likely to result in flooding of premises, Site Supervisor to ensure: a. All water exits are cleared and free from any material which might prevent the flow of water b. Create temporary/additional water exits if necessary and direct water to the stream or furthest possible location from premises. c. Regularly inspect water exits to remove any accumulated mud / materials, which may obstruct the water flow. d. After heavy rains have stopped, discharge any accumulated water.	Site Supervisor
3.	**Fire** Ensure adequacy of fire extinguishers and their locations at all sites Ensure that each site has at least 2 persons trained in the use of fire extinguishers.	Security Manager/ Health & Safety Officer
	In the event of fire outbreak, use water or fire extinguishers accordingly.	All persons
	In case it is found that fire is not within control, immediately phone the Fire Brigade. Inform Facility Manager to sound alarm.	Site Supervisor Facility Manager
	Personnel must not endanger their lives while putting out fire.	--
	Collaborate/ Provide assistance to Fire Brigade. Remove obstruction to facilitate access to fire outbreak.	All persons

8. In case of a disease outbreak, the Veterinarian immediately inform the Facility Manager. An urgent management meeting is convened to decide upon lines of action on a case to case basis.

9. All Site Supervisors are members of BCPR Health and Safety Committee.

Records and Specification Table

Record ref	Title
QR5-05	Minutes of Meeting
QR62-07	Training Record Sheet
QR64-19	List of Fire Extinguishers
QR85-05	Hurricane Checklist
QR85-06	Hirricane Report
QR85-07	Infrastructure Damage Report (Hurricane)
TAB8-1	Hurricane Emergency Team

Animal welfare issues

1. After any emergency situation, priority shall be given to depicting/attending sick/wounded animals.
2. Ensure all enrichment devices have been removed (based on intensity of cyclone).
3. Ensure availability of food and water.
4. Priority shall be given to all repairs related to cage infrastructure.

Annex 1

- **TROPICAL STORM WATCH**
  A tropical storm watch is issued when tropical storm conditions, including winds from 39 to 73 miles per hour (mph), pose a possible threat to a specified coastal area within 36 hours.
- **TROPICAL STORM WARNING**
  A tropical storm warning is issued when tropical storm conditions, including winds from 39 to 73 mph, are expected in a specified coastal area within 24 hours or less.
- **HURRICANE WATCH**
  A hurricane watch is issued for a specified coastal area for which a hurricane or a hurricane-related hazard is a possible threat within 36 hours.
- **HURRICANE WARNING**
  A hurricane warning is issued when a hurricane with sustained winds of 74 mph or higher is expected in a specified coastal area in 24 hours or less. A hurricane warning can remain in effect when dangerously high water or a combination of dangerously high water and exceptionally high waves continues, even though the winds may have subsided below hurricane intensity.

. **Termination**: Issued when there is no longer any appreciable danger of gusts exceeding 120 km per hour.

6 Hour Forecast Cycle

When a storm threatens the following occurs

0:00 A new hurricane forecast cycle begins.

0:45 Receive the location of the center of the hurricane.

1:00 Initialize or start the hurricane models with the storm's location and intensity

1:20 Receive model guidance and prepare a new hurricane forecast.

2:00 Coordinate with National Weather Service and Dept. of Defense.

3:00 Issue the full hurricane advisory package.

ISSUANCE TIME:
5am EDT (4 CDT)
11am EDT (10 CDT)
5pm EDT (4 CDT)
11pm EDT (10 CDT)

3:15 Participate in the Federal Emergency Management Agency (FEMA) conference call with the affected states.

6:00 A new hurricane forecast cycle begins.

** When a Watch or a Warning is issued, intermediate advisories are initiated.

MORE INFO ON FORECAST PRODUCTS

BIOCULTURE PR LTD
PROCEDURE MANUAL

Section	**: QP805-02**	**Issue No.**	**: 5**
Title	**: Emergency situations - Tropical storm**	**Date of Issue**	**: 12 November 2008**
Compiled by	**: Operations Manager**	**Approved by**	**: General Manager**

1. Scope

The purpose of this procedure is to define the steps to be followed at BCPR in the event of an emergency.

4. Responsibilities

4.1 The Operations Manager is responsible for the effective implementation of this procedure.

4.2 All designated persons identified to deal with an emergency situation shall make themselves available in case of need.

5. Working Protocol

6. Policies

6.1. The Tropical storm Emergency Team list **(TAB8-1),** should be available in each Security personnel Office.

7. Procedures

	Activities	Responsibilities	Records
1.	**Tropical storm** Establish Tropical storm emergency team for an annual basis for each site and designate team leaders. Operations Manager to submit Tropical storm checklist to Site Supervisor.	Operations Manager/ Site Supervisor / Quality Assurance Officer	TAB8-1
	Upon issue of **Class I** Tropical storm warning by the Meteorological office (refer to Annex 1), carefully study the trajectory forecast and its magnitude.	General Manager/ Operations Manager	--
	Site Supervisor to liaise with concerned dept. and ensure all items in checklist have been thoroughly verified.	Site Supervisor	QR85-05
	Visit all sites and ensure the safety of equipment and installations.	Mechanical & Electrical Manager Technical Officers	--
	Upon Issue of **Class II** warning (refer to Annex 1): All company vehicles users to fill up their respective vehicle.	All company vehicles users	--
	For tunnel cages, close access to tunnels depending on assessment of weather conditions.	Site Supervisor	--
	Upon Issue of Class III warning: If early during the day, immediately upon issue of **Class III warning** (refer to Annex 1), ensure all animals are fed with their normal food ration. Pellets and bread are also provided if weather permits. If heavy rains prevail, a double fresh food ration is given in lieu of pellets.	Food Storekeeper	--
	All personnel go back home except those in Emergency Teams unless otherwise decided by Management based upon Tropical storm magnitude or trajectory forecast.	Site Supervisor	--

	Activities	Responsibilities	Records
	Note: While doing the following, the team leader shall make proof of good judgment in order not to compromise safety of team members. Emergency team to make hourly rounds of site in groups and: a. Check any major damage to cages due to fallen trees or branches. b. Stop the generator for one hour after each 3 hours running. c. Clear drains in case they are blocked. d. Transfer animals requiring intensive (e.g. incubator and heater) care to where electricity supply is continuous. e. Transfer any sick or injured animals to internal building. f. Attend to provisional repairs where possible to buildings damaged (e.g. seal broken windows).	Emergency team	--
	After the Tropical storm: a. Make preliminary assessment of damage sustained. b. Attend to urgent actions required if possible. c. Feed animals with their normal ration (pellets can be given if weather permits otherwise double fresh food ration given). d. Report salient issues to personnel upon their arrival. e. Emergency teams leave the sites. f. Vet staff to conduct thorough verification and report their findings in Tropical storm report. g. Ensure availability of water for animals in case there is no town water supply.	Each Head of Department Food Storekeeper Vet Staff	QR85-06
	Tropical storm Report a. Emergency team leader to complete Tropical storme Report and submit to Operations Manager. b. Technical officer to conduct survey on all sites and prepare the Infrastructure Damage Report within 24 hours of lifting of Tropical storm warning.	Emergency Team Leader Technical officer	QR85-06 QR85-07
	Both Tropical storm report and Infrastructure Damage Report are discussed by Management. The effectiveness of this procedure is assessed and actions deemed necessary are initiated.	General Manager/ Operations Manager/ Accounts & Planning Manager	QR85-06 QR85-07
	Actions taken with respect to Tropical storm reports are discussed during Ethical Review Committee meetings if relevant.	General Manager	QR5-05

	Activities	Responsibilities	Records
2.	**Floods** In case of heavy rains, likely to result in flooding of premises, Site Supervisor to ensure: a. All water exits are cleared and free from any material which might prevent the flow of water b. Create temporary/additional water exits if necessary and direct water to the stream or furthest possible location from premises. c. Regularly inspect water exits to remove any accumulated mud / materials, which may obstruct the water flow. d. After heavy rains have stopped, discharge any accumulated water.	Site Supervisor	--
3.	**Fire** Ensure adequacy of fire extinguishers and their locations at all sites Ensure that each site has at least 2 persons trained in the use of fire extinguishers.	Security Manager/ Health & Safety Officer	QR64-19 QR62-07
	In the event of fire outbreak, use water or fire extinguishers accordingly.	All persons	--
	In case it is found that fire is not within control, immediately phone the Fire Brigade. Inform Operations Manager/General Manager. Security Officer/ Site Supervisor to sound alarm.	Site Supervisor Operations Manager Security Officer	--
	Personnel must not endanger their lives while putting out fire.	--	--
	Collaborate/ Provide assistance to Fire Brigade. Remove obstruction to facilitate access to fire outbreak.	All persons	--

8. In case of a disease outbreak, the Vet Manager shall immediately inform the General Manager. An urgent management meeting is convened to decide upon lines of action on a case to case basis.

9. All Site Supervisors are members of BCPR Health and Safety Committee.

Records and Specification Table

Record ref	Title
QR5-05	Minutes of Meeting
QR62-07	Training Record Sheet
QR64-19	List of Fire Extinguishers
QR85-05	Tropical storm Checklist
QR85-06	Tropical storm Report
QR85-07	Infrastructure Damage Report (Tropical storme)
TAB8-1	Tropical storm Emergency Team

Animal welfare issues

1. After any emergency situation, priority shall be given to depicting/attending sick/ wounded animals.
2. Ensure all enrichment devices have been removed (based on intensity of Tropical storm).
3. Ensure availability of food and water.
4. Priority shall be given to all repairs related to cage infrastructure.

Annex 1

THE TROPICAL STORM WARNING SYSTEM:

Class I
Issued 36 to 48 hours before the advent of Tropical storm conditions.

Class II:
Issued so as to allow, as far as practicable, 12 hours of daylight before the occurrence of gusts of 120 kilometers (km) per hour.

Class III:
Issued so as to allow, as far as practicable, 6 hours of daylight before the occurrence of gusts of 120 kilometers (km) per hour.

Class IV:
Issued when gusts of 120 km per hour have been recorded and are expected to continue to occur.

Termination: Issued when there is no longer any appreciable danger of gusts exceeding 120 km per hour.

CLASSIFICATION OF TROPICAL STORM:

Zone of disturbed weather (or tropical disturbance):
An area of low pressure relative to the surrounding region; the associated cloud masses are usually not well-organized.

Tropical depression:
A non-frontal synoptic scale low-pressure system originating over tropical waters with enhanced convection and/or some indications of Tropical storm wind circulation. Winds circulate clockwise around low-pressure and Tropical storm systems in the southern hemisphere. Gusts associated with tropical depression are generally less than 89 kilometers (km) per hour.

Moderate tropical storm:
A non-frontal synoptic scale low-pressure system originating over tropical waters with organized convection and definite Tropical storm wind circulation. Estimated gusts associated with moderate tropical storms range from 89 to 124 km per hour.

Severe tropical storm:
A tropical storm in which the estimated wind gusts range from 125 to 165 km per hour.

Tropical Tropical storm:
A tropical storm in which the estimated wind gusts range from 166 to 233 km per hour.

Intense tropical Tropical storm:
A tropical storm in which the estimated wind gusts range from 234 to 299 km per hour.

Very intense tropical Tropical storm:
A tropical storm in which estimated gusts exceed 300 km per hour.

Hazards	Activities	Responsibility	Probability (likelihood)	Severity	Hazard Rating	Uniforms	Face mask	Boots	Vinyl gloves/Latex Gloves	Lab Coats	Helmets	Goggles	Face shields	Boots with top laces	Industrial shoes	Rubber gloves (black)	Rubber gloves (yellow)	Sterile gloves	Shark mesh gloves	Long arm gloves	Standard raincoat	Raincoat (p/cleaner)	Leather gloves	Welder face shield	Ear muffs	Apron (leather)	Apron (plastic)	Full face mask	PAPR	Disposable Lab coat	Disposable head cap	Clogg
Bite Wounds	Catching of animals	AH	3	4	12	✓	✓	✓	✓	✓	✓																					
	Transporting animals	AH	1	4	4	✓	✓	✓	✓																							
	Presenting animals for procedure	AH	2	4	8	✓																										
	Cage Rounds	AT	1	1	1	✓	✓	✓	✓																							
	Administration of Substances	AT	2	4	8	✓	✓	✓	✓	✓	✓																					
	Tattooing of animals	AT	1	1	1	✓	✓	✓	✓	✓																						
	Blood Sample collection	AT	3	4	12	✓	✓	✓	✓	✓																						
	Weighing of animals	AH	3	4	12	✓	✓	✓	✓	✓	✓																					
	Distribution of food to animals	AC	1	1	1	✓	✓	✓	✓	✓	✓						✓															
Animal scratches	Catching animals	AH	4	2	8	✓	✓	✓	✓	✓	✓																					
	Weighing of animals	AH	4	2	8	✓	✓	✓	✓	✓	✓																					
	Transporting animals	AH	3	2	6	✓	✓	✓	✓	✓	✓																					
	Presenting animals for procedure	AH	3	2	6	✓	✓	✓	✓	✓	✓																					
	Cage Rounds	AT	1	1	1	✓	✓	✓	✓		✓																					
	Administration of substances	AT	3	2	6	✓	✓	✓	✓																							
	Blood Sample collection	AT	3	2	6	✓	✓	✓	✓	✓																						
	Tattooing of babies	AT	1	1	1	✓																										
Slipping & falling	Catching animals	AH	2	2	4	✓	✓	✓	✓	✓	✓																					
	Transporting of animals	AH	1	2	2	✓	✓	✓	✓	✓	✓					✓																
	Administration of substances	AT	1	1	1	✓	✓	✓	✓												✓	✓	✓									
	Laboratory activities	AT	1	1	1	✓																										
	Food Store	FSK	1	1	1	✓			✓						✓	✓																
	Medical Store	MSO	1	1	1	✓																										
	Chemical & Material stores	SO	1	1	1	✓	✓	✓		✓		✓			✓	✓												✓				
	Pressure cleaning of cages	AC	2	3	6	✓	✓	✓														✓	✓									
	Distribution of food to animals	AC	2	2	4	✓	✓	✓			✓						✓															
	Removal of waste from sites	AC	2	2	4	✓	✓	✓								✓																
	Gardening	G	1	1	1	✓		✓								✓							✓									
	Welding & Electrical	MES, MEA MS, MO	2	3	6	✓																										
	Carpentry	C	2	3	6	✓																										
	Site Supervisor	SS	2	2	4	✓																										
Slipping & falling	Laundry	LA	2	2	4	✓																										
	Truck Helper	TH	3	3	9	✓									✓																	
	Incinerator Operator	IO	1	1	1	✓																										
	Composting Workers	AC	3	3	9	✓																										
Bumping into cage accessories		AH			0	✓																										
	Catching animals	AH	3	3	9	✓	✓	✓	✓	✓	✓																					

Hazards	Activities	Responsibility	Probability (likelihood)	Severity	Hazard Rating	Uniforms	Face mask	Boots	Vinyl gloves/Latex Gloves	Lab Coats	Helmets	Goggles	Face shields	Boots with top laces	Industrial shoes	Rubber gloves (black)	Rubber gloves (yellow)	Sterile gloves	Shark mesh gloves	Long arm gloves	Standard raincoat	Raincoat (p/cleaner)	Leather gloves	Welder face shield	Ear muffs	Apron (leather)	Apron (plastic)	Full face mask	PAPR	Disposable Lab coat	Disposable head cap	Clogg
	Transporting animals	AH	2	3	6	✓	✓	✓	✓	✓	✓					✓																
	Administration of substances	AT	1	1	1	✓																										
	Pressure cleaning of cages	AC	3	3	9	✓	✓	✓			✓					✓						✓	✓									
	Distribution of food to animals	AC	2	2	4	✓																										
Foreign matters or dust in eyes	Catching animals	AH	4	3	12	✓	✓	✓	✓	✓	✓	✓	✓																			
	Cleaning of cages	AC	3	3	9	✓	✓	✓			✓		✓										✓									
	Gardening	G	3	3	9	✓	✓	✓				✓				✓							✓									
	Welders and Electricians	MES, MEA MS, MO	3	3	9	✓																										
	Crate building workers		3	3	9	✓																										
					0	✓																										
Facial injury from animal tail	Catching animals	AH	3	2	6	✓	✓	✓	✓	✓	✓	✓																				
Back injury from lifting heavy weights	Transporting animals	AH	2	4	8	✓																										
	X-ray personnel	AH	2	4	8	✓																										
	Stores Personnel				0	✓																										
	Food Store	FSK	3	4	12	✓		✓							✓																	
	Chemical & Material Stores	SO	3	4	12	✓																										
	Caretakers				0	✓																										
	Chopping of food for animals	AC	2	2	4	✓		✓									✓		✓							✓						
	Removal of waste from sites	AC	3	4	12	✓																										
	Welding & Electrical	W, E	4	4	16	✓																										
	Carpentary workers	C	4	4	16	✓																										
	Loading & unloading truck	TH	4	4	16	✓									✓																	
	Hospital complex Management		2	4	8	✓																										
	Medical Store					✓																										
Needle Stick					0	✓																										
	Animal Handlers				0	✓																										
	Presenting animals for procedure	AH	3	4	12	✓	✓	✓	✓	✓	✓																					
	Animal Technicians				0	✓																										
	Administration of Substances	AT	4	4	16	✓	✓	✓	✓	✓																						
	Assisting Vet Staff in pre surgery	AT	3	4	12	✓	✓	✓	✓									✓													✓	
	Assisting Vet Staff in post surgery		1	4	4	✓	✓	✓										✓													✓	
	Blood Sample collection	AT	3	4	12	✓	✓	✓	✓	✓																						
Needle Stick	Tattooing	AT	2	2	4	✓	✓	✓	✓	✓																						
Eye Splash					0	✓																										
	Animal handlers				0	✓																										
	Presenting animals for procedure	AH	3	2	6	✓	✓	✓	✓	✓	✓																					
	Animal technicians				0	✓																										
	Administration of substances	AH	3	2	6	✓	✓	✓	✓	✓																						

Hazards	Activities	Responsibility	Probability (likelihood)	Severity	Hazard Rating	Uniforms	Face mask	Boots	Vinyl gloves/Latex Gloves	Lab Coats	Helmets	Goggles	Face shields	Boots with top laces	Industrial shoes	Rubber gloves (black)	Rubber gloves (yellow)	Sterile gloves	Shark mesh gloves	Long arm gloves	Standard raincoat	Raincoat (p/cleaner)	Leather gloves	Welder face shield	Ear muffs	Apron (leather)	Apron (plastic)	Full face mask	PAPR	Disposable Lab coat	Disposable head cap	Clogg
	Assisting Vet staff in surgery	AH	3	2	6	✓	✓	✓	✓	✓								✓												✓		
	Tattooing	AH	2	2	4	✓	✓	✓	✓	✓																						
	Assisting Vet staff in Necropsy	AH	2	2	4	✓	✓	✓	✓																					✓	✓	
	X-Ray personnel		3	4	12	✓																										
	Food store personnel	FSK	2	3	6	✓					✓	✓																				
	Chemical store personnel	SO	3	5	15	✓																										
	Caretaker				0	✓																										
	Pressure cleaning of cages	AC	3	4	12	✓	✓	✓			✓		✓			✓							✓									
	Laundry attendant	AC	2	2	4	✓																										
	Laboratory activities		2	2		✓																										
Scalpel cut	Animal technicians				0	✓																										
	Animal Technicians activities	AT	2	4	8	✓	✓	✓	✓																							
Exposure to chemicals	Animal technicians				0	✓																										
	Animal Technicians activities	AT	2	4	8	✓	✓	✓	✓	✓	✓		✓																			
	Hospital complex management	AT	2	4	8	✓	✓	✓	✓	✓																						
	Chemical & material stores	SO	3	5	15	✓																										
	Laboratory staff		2	4	8	✓																										
Exposure to zoonotic pathogens	Laboratoly staff	LA	3	4	12	✓																										
					0	✓																										
	Sweeping of cages	AC	2	3	6	✓	✓	✓			✓					✓																
	Pressure cleaning of cages	AC	2	3	6	✓	✓	✓			✓		✓			✓							✓									
	Removal of waste from sites	AC	2	3	6	✓	✓	✓								✓																
	Truck helpers	TH	2	3	6	✓																										
	Incinerator operator	IO	2	3	6	✓																										
	Composting workers	AC	2	3	6	✓																										
					0	✓																										
Burns with autoclave, burner or incubator	Laboratory staff	LA	3	4	12	✓																										
	Welding & electrical		3	4	12	✓																										
	Incinerator operator	IO	2	4	8	✓																										
Electric shock	Laboratory staff	LA	1	5	5	✓																										
	Pressure cleaning of cages	AC	1	5	5	✓	✓	✓			✓		✓		✓						✓											
	Carpentry personnel	C	3	5	15	✓																										
	Welding & Electrical workers	W, E	4	5	20	✓																										
	Site supervisor	SS	2	5	10	✓																										
	Infrastructure personnel		4	5	20	✓																										
Fire	Laboratory	LA	1	5	5	✓																										
	Chemical store		2	5	10	✓																										
	Welding & electrical		3	5	15	✓																										
Cuts from broken glassware	Laboratory staffs	LA	2	2	4	✓																										
	Office Attendants		2	2	4	✓																										

Hazards	Activities	Responsibility	Probability (likelihood)	Severity	Hazard Rating	Uniforms	Face mask	Boots	Vinyl gloves/Latex Gloves	Lab Coats	Helmets	Goggles	Face shields	Boots with top laces	Industrial shoes	Rubber gloves (black)	Rubber gloves (yellow)	Sterile gloves	Shark mesh gloves	Long arm gloves	Standard raincoat	Raincoat (p/cleaner)	Leather gloves	Welder face shield	Ear muffs	Apron (leather)	Apron (plastic)	Full face mask	PAPR	Disposable Lab coat	Disposable head cap	Clogg
					0	✓																										
Exposure to Radiation	X-Ray personnel		2	5	10	✓																										
					0	✓																										
Collapse of pellets bags	Food store workers	FSK	1	2	2	✓																										
					0	✓																										
Falling from food silo	Food store workers	FSK	2	5	10	✓		✓			✓				✓																	
					0	✓																										
Injury with pressure cleaner	Food store workers	FSK	3	4	12	✓		✓					✓			✓						✓										
	Caretakers				0	✓																										
	Pressure cleaning of cages	AC	3	4	12	✓	✓	✓			✓		✓			✓						✓										
Scratches and bruises	Food store personnel	FSK	1	1	1	✓																										
	Chemical store personnel	FSK	2	2	4	✓																										
					0	✓																										
	Chopping of food for animals	AC	2	2	4	✓		✓									✓		✓								✓					
	Pressure cleaning of cages	AC	2	2	4	✓	✓	✓			✓					✓						✓	✓									
	Distribution of food to animals	AC	2	2	4	✓	✓	✓			✓						✓															
	Gardening	AC	2	2	4	✓		✓								✓							✓									
	Site supervisor	SS	2	2	4	✓																										
	welders and electricians	W, E	2	2	4	✓																										
	Carpenters	C	2	2	4	✓																										
	Truck helpers	TH	2	2	4	✓																										
	Composting personnel	AC	2	2	4	✓																										
	Incinerator operator	IO	2	2	4	✓																										
Injury with machete	Caretakers				0	✓																										
	Chopping of food for animals	AC	2	4	8	✓													✓								✓					
Falling from ladder	Welders and electricians	W, E	3	5	15	✓																										
	Animal Caretakers				0	✓																										
	Gardeners				0	✓																										
						✓																										
					0	✓																										
Arc welding injury	Welders and electricians	W,E	3	3	9	✓																										
					0	✓																										
Injury with portable electric tools	Welders and electricians	W, E	3	4	12	✓																										
Exposure to noise	Gardening	G	2	3	6	✓																										
					0	✓																										
Injury with branches or trees	Gardening	G	2	2	4	✓																										
Injury with bush cutter	Gardening	G	2	4	8	✓																										
Injury with planing machine	Crate building workers		3	5	15	✓																										
Injury with sawing machine	Crate building workers		3	5	15	✓																										
Injury with wood stapler	Crate building workers		3	4	12	✓																										
Injury with hammer	Crate building workers		3	2	6	✓																										

Insurance

Bioculture P.R. will be primarily responsible for damages caused by its animals in the facilities or, in the improbable event that an animal escapes the facility, damages caused to third parties.

Bioculture P.R. will have a general liability insurance policy that will cover all damages caused by the animals, including physical, agricultural and personal property. If requested, a copy of the insurance policy will be presented at the Natural Resources Department of Puerto Rico.

Exit Plan

In the event that Bioculture P.R. decides to exit or shut down its operation in Puerto Rico, it will take all animals outside of the island to a destiny of its choosing.

Bioculture P.R. will immediately inform all state and federal agencies about its decision to cease operations as well as a tentative date where all the animals will be completely removed so that a final inspection of the property can be scheduled.

FOMENTO

ESTADO LIBRE ASOCIADO DE PUERTO RICO
Compañía de Fomento Industrial

7 de abril de 2009

Lcdo Emil Rodríguez Escudero
M.L. & R.E. Law Firm
Calle Juan J. Jiménez Núm. 513
Hato Rey, Puerto Rico 00918

Consulta - Bioculture PR

Estimado licenciado Rodríguez:

Hacemos referencia a su solicitud para que evaluemos la actividad que realiza su cliente, Bioculture PR, Inc. a los fines de determina si es elegible para los beneficios de la Ley Núm. 73 de 28 de mayo de 2009, mejor conocida como Ley de Incentivos Económicos para el Desarrollo de Puerto Rico (la Ley).

I. Trasfondo

Bioculture PR, Inc. ("Bioculture PR") es una compañía afiliada a Bioculture Mauritius Ltd ("Bioculture") que está localizada en la Isla de Mauricio ubicada al suroeste del Océano Índico, específicamente a 900 kilómetros de las costas orientales de Madagascar y aproximadamente a 3.943 kilómetros al suroeste de la India. Bioculture PR se dedicará a la reproducción y crianza de animales de laboratorio destinados específicamente para investigación biomédicos. Estos animales son para la exportación a sus clientes a nivel global, especialmente a aquellos clientes ubicados en Estados Unidos. Sus potenciales clientes, al igual que Bioculture pertenecen a la industria farmacéutica (tradicionales y de bio-fármacos), y las compañías de investigación por contrato, con sede en los Estados Unidos y Europa. Algunos de sus clientes incluyen a Pfizer, Novartis, Astra-Zeneca, Glaxo-Smith-Kline, Roche y Charles Rivet, entre otros.

Con el establecimiento de esta operación en Puerto Rico Bioculture planifica su expansión a los mercados de América Latina. Según expone la empresa, Bioculture posee una vasta experiencia en el manejo de estos simios, ya que por más de veinte (20) años se ha dedicado a este negocio desde la Isla de Mauricio. Como muestra de su capacidad de producción, la misma señala que las exportaciones anuales de monos a Europa ascienden a 2,200 primates, mientras que para los Estados Unidos esta cifra asciende a 3,000 primates. No obstante, la empresa plantea que una parte de estos animales mueren a causa de estrés provocado por el extenso viaje y de los extensos periodos de cuarentena a los que están expuestos a la entrada de Estados Unidos o

países de Europa. Por tal razón, la localización de esta empresa en Puerto Rico beneficiaría las operaciones de la misma a la vez que satisface a sus clientes.

Es importante destacar que estos primates son usados para las investigaciones biomédicas y el desarrollo de medicamentos y vacunas exclusivamente. La naturaleza de estos monos es única y son altamente valorados por las compañías de investigación biomédica en el mundo. Estos monos, son de la especie Cynomulgus (*Macaca Fascicularis*), los cuales están libre de patógenos específicos como el Herpes B, STLV 1 y SRV. Esto de por si le da una ventaja a los investigadores en el uso de este mono, en lugar de los monos tipo *rhesus* asiáticos u otros. Las primeras colonias de estos monos Cynomulgus serán importadas desde las Islas de Mauricio para la producción de camadas a ser criadas en Puerto Rico.

II. Descripción del Proyecto

La empresa propone localizar el proyecto en el Municipio de Guayama y constará de tres etapas.

1. Construcción de las oficinas, el almacén de alimentos, la mitad de la capacidad en jaulas de cría y destete y la clínica veterinaria. En esta fase, Bioculture importará un total de 200 primates para el comienzo de la crianza.

2. Construcción de las restantes jaulas para alcanzar la capacidad de albergue de 3,000 primates para la crianza, destete, crecimiento y cuarentena contratada.

3. Equipamiento del laboratorio de la empresa para que los científicos visitantes puedan llevar a cabos sus experimentos.

Bioculture PR posee para este proyecto alrededor de 400 cuerdas de terreno. Las facilidades contarán con 17 estructuras que estarán distribuidas en 65 cuerdas y las cuales tendrán en un área de amortiguamiento de 147 cuerdas de terreno. El remanente de las 400 cuerdas serán destinadas como zonas de conservación en su estado natural. La empresa ha representado que en la parte restante de los terrenos no usados, se estarán sembrando árboles endémicos de Puerto Rico y que los mismos serán atizados como barrea natural. Las colonias a ser importadas serán seleccionadas según los estándares de la industria de investigación animal. Durante el proceso de producción, las colonias serán enviadas a Estados Unidos en donde pasarán el periodo de cuarentena antes de hacer entrada a Puerto Rico. Posteriormente, las agencias reguladoras estadounidenses acreditarán el periodo de cuarentena para entonces ser trasladados a Puerto Rico.

La empresa tiene proyectado producir mil primates en un término de 36 meses, lo que equivaldrá a un valor de ventas de cinco ($5) millones. Proyecta, además, que estará incrementando su producción y ventas a $10 y $15 millones en un periodo de 48 a 60 meses, respectivamente. Las jaulas están diseñadas con la más avanzada tecnología y con altas medidas de seguridad para evitar la fuga de estos animales. Estos animales serán atendidos y alimentados correctamente hasta alcanzar la mayoría de edad y las dimensiones especificas requeridos por los clientes de Bioculture. Los monos adultos hembras alcanzan un peso 4 kilogramos (9 libras), mientras que los machos alcanzan un peso de 6 kilogramos (13 libras). El tamaño aproximado de esta clase de monos es de un gato. Bioculture espera tener una proporción poblacional de hembras a macho de 9:1.
La empresa ha representado que estos primates se van a criar en cautiverio exclusivamente y que el diseño de sus jaulas cumple con los más altos estándares en la industria. Bioculture utiliza sistemas de contención primarios y secundarios en el área de las jaulas para evitar las fugas de los primates, entre los que se encuentran: 1) Cerrojos a prueba de primates en las jaulas de destete crianza y crecimiento; 2(Verjas triples alrededor del perímetro de las jaulas y de éstas 3 verjas una es electrificada; y 3) Sistema de triple puerta para entrada, las cuales están interconectadas para que la próxima puerta no se pueda abrir mientras la puerta anterior esta abierta.

Según la información evaluada, la Administración de Reglamentos y Permisos (ARPE) condiciono el otorgamiento del permiso de construcción a que Bioculture sometiese los endosos del Departamento de Salud, Departamento de Agricultura y del Departamento de Recursos Naturales y Ambientales. Estas agencias analizaron el proyecto en cuestión y no presentaron objeciones al mismo, siempre y cuando existan las condiciones por parte del empresario para garantizar la remediación y cumplimiento de las leyes locales y de la política pública al respecto. Bioculture está acreditada por la Asociación Internacional para la Evaluación y Acreditación del Cuidado de Animales de Laboratorio (AAALAC, por sus siglas en inglés), por TÜA (Technischer Überwachungs-Verein-agencia dedicada a la vigilancia de la seguridad y calidad de los productos tanto para el ser humano como para el ambiente de acuerdo a las especificaciones de ISO) y por la Internacional Organization for Standardization (ISO) De acuerdo a Bioculture, desde 1985 ha desarrollado una reputación a nivel global por la alta calidad de los primates criados o la producción de primates, los servicios que ofrecen y por su eficiencia en el suplido de sus productos a grandes empresas farmacéuticas de Estados Unidos y Europa.

Impacto Económico

Según la información provista, la inversión inicial en maquinaria y equipo, materia prima, terrenos y edificios propuesta por Bioculture PR asciende a $1.2 millones, mientras el empleo comprometido para las operaciones iniciales de la compañía es de 10 personas con una nómina comprometida de $215 mil. De éstos, 6 estarán

dedicados al área de servicios y producción, 1 para administración, 1 temporero y 2 contratados. A partir del segundo año de operaciones, el empleo de Bioculture aumentará a 20 personas, de los cuales 12 estarán dedicados al área de servicios y producción, 1 para supervisión, 1 para administración, 3 temporeros y 3 contratados. La nómina de estos 20 empleados será de $380,000 en el segundo año Entre estos empleados, 2 contaran con grados de Maestría y 1 con grado de Doctorado relacionado con la investigación y el desarrollo científico

Por otro lado, OPC contempla el uso de 2 a 3 edificios de nueva construcción para un total de pies cuadrados necesarios de entre 8,000 a 11,000 pies cuadrados. El valor estimado por OPC de estos edificios es de $1.5 millones.

Los planes futuros de la empresa están enmarcados en una expansión de sus servicios a empresas manufactureras, en especial a las farmacéuticas y compañías de investigación biomédicas en América Latina.

La empresa proyecta además comprar un terreno para sus operaciones por un espacio de 400 cuerdas, además de la construcción del edificio principal, uno de apoyo, las jaulas, y el estacionamiento Estos costarán, según la empresa, $900,000. En términos de otros costos en la operación, la empresa reporta que tendrá costos por concepto de materia prima ascendentes a $250,000, los que con toda probabilidad serán gastados en su mayoría localmente, beneficiando a otras empresas locales. Mientras que gastará $40,000 en maquinaria y $30,000 en la construcción de un laboratorio. Esto se podría catalogar como la inversión inicial ya que en la consulta no se especifica la inversión que se hará.

Las ventas proyectadas por la empresa al término de 36 meses y luego de haber producido 1,000 primates indican que las mismas serán de $5.0 millones. Las ventas de estos primates en un periodo de 48 a 60 meses luego del inicio de operaciones se proyectan en $10 y $15 millones, respectivamente.

Reconocemos que este proyecto, a pesar de que no generará grandes cantidades empleos y/o inversión en Puerto Rico, al igual que recaudos al Estado, sí constituye una pieza fundamental si Puerto Rico quiere insertarse en el mercado de Investigación y Desarrollo (R&D). El establecimiento en Puerto Rico de esta empresa podría incentivar a que estas empresas estadounidenses y europeas usen los monos criados en Puerto Rico. De otra parte, también podrían aplicar a empresas de R&D o considerar a Puerto Rico para realizar pruebas con el beneficios de usar el talento científico local.

Según Bioculture, algunas empresas como Astra Zeneca y GlaxoSmithKline, han mostrado el interés en el proyecto y así se lo han comunicado a la gerencia de Bioculture.

Clasificación Industrial

La actividad principal de la empresa está bajo la clasificación industrial NAICS **115210 Support Activities for Animal Production.** La misma se define como: This industry comprises establishments primarily engaged in performing support activities related to raising livestock (e.g., cattle, goats, hogs, horses, poultry, sheep). These establishments may perform one or more of the following: (1) breeding services for animals, including companion animals (e.g., cats, dogs, pet birds); (2) pedigree record services; (3) boarding horses; (4) dairy herd improvement activities; (5) livestock spraying; and (6) sheep dipping and shearing.

La siguiente tabla muestra las distintas definiciones de industrias bajo esta clasificación industrial 562213.

2007 NAICS	2002 NAICS	1997 NAICS	Corresponding Index Entries
115210	115210	115210	Animal semen banks
115210	115210	115210	Artificial insemination services for livestock
115210	115210	115210	Artificial insemination services for pets
115210	115210	115210	Boarding horses (except racehorses)
115210	115210	115210	Branding
115210	**115210**	**115210**	**Breeding, animal, services**
115210	115210	115210	Bull testing stations
115210	115210	115210	Cattle spraying
115210	115210	115210	Cleaning poultry houses
115210	115210	115210	Corralling, drovers
115210	115210	115210	Dairy herd improvement associations
115210	115210	115210	Equine boarding
115210	115210	115210	Farriers
115210	115210	115210	Hoof trimming
115210	115210	115210	Horses (except racehorses), boarding
115210	115210	115210	Horses, training (except racehorses)

115210	115210	115210	Horseshoeing
115210	115210	115210	Livestock breeding services (except consulting)
115210	115210	115210	Livestock spraying
115210	115210	115210	Milk testing for butterfat and milk solids
115210	115210	115210	Pedigree (i.e., livestock, pets, poultry) record services
115210	115210	115210	Poultry catching services
115210	115210	115210	Reproductive flushing services for animals
115210	115210	115210	Semen collection
115210	115210	115210	Sheep dipping and shearing
115210	115210	115210	Showing of cattle, hogs, sheep, goats, and poultry
115210	115210	115210	Stud services
115210	115210	115210	Training horses (except racehorses)
115210	115210	115210	Vaccinating livestock (except by veterinarians)

Fuente: Manual de NAICS 2007, Negociado del Censo Federal

Conclusión

Entendemos que las operaciones de Bioculture pueden representar un valor añadido a la cadena de distribución, servicios y/o suministros ("supply chain") de las industrias farmacéuticas en Puerto Rico, aumentando los niveles de utilización de la capacidad industrial e integrando otras actividades a la manufactura. Esta actividad será de naturaleza única, ya que la crianza de monos, en especial los de la clase que Biocuture trabajará, no se realiza en Puerto Rico.

Es nuestra contención que Puerto Rico tiene una imperiosa necesidad de aumentar la actividad económica. La actual política pública de promover actividades con una base estructural fuerte es una prioridad dada las presentes circunstancia por la que atraviesa la industria de la manufactura Es vital que se logre crear una base industrial orientada desde la Investigación y Desarrollo (R&D), hasta el proceso de manufactura. De esta forma, se fortalece la estructura industrial de Puerto Rico e insertarnos con fuerza en la era de la bio-manufactura

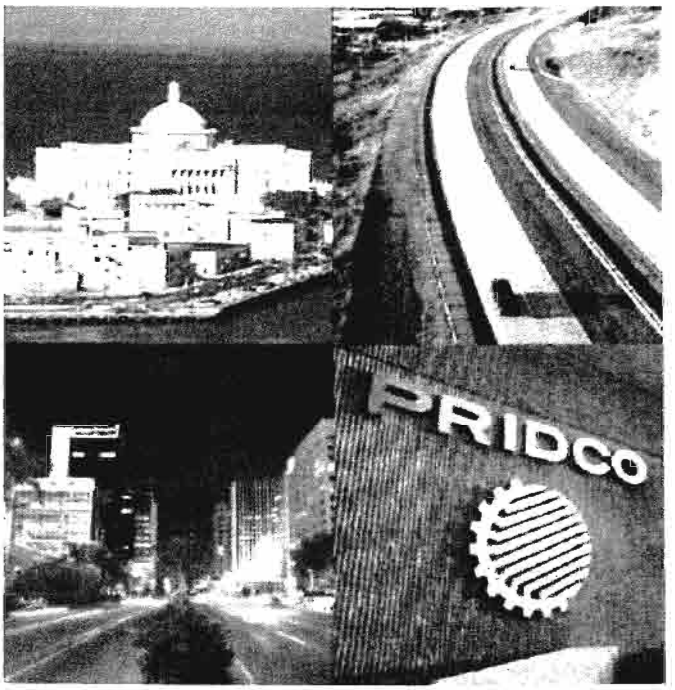
En vista de lo aquí discutido, esta Compañía preliminarmente opina que la actividad que realiza Bioculture podría cualificar como actividad de crianza de animales para experimentos en laboratorios de inversión científica de medicina y usos similares.

Cordialmente,

Javier Vázquez Morales
Director Ejecutivo

Economic Incentives for the Development of Puerto Rico Act

(Act No. 73 of May 28, 2008)



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COMMONWEALTH OF PUERTO RICO
Puerto Rico Industrial Development Company

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(H.B. 4350)

Economic Incentives for the Development of Puerto Rico Act

To enact the "Economic Incentives for the Development of Puerto Rico Act", with the purpose of providing an adequate environment and opportunities for the continued development of our local industry; providing an attractive tax proposal that appeals to foreign direct investments and fosters the economic development and social betterment in Puerto Rico; to add Subparagraph (S) and subparagraph (T) of Section 1022(b)(4), amend Section 1232(f)(2) of the Puerto Rico Internal Revenue Code of 1994; and create the Energy Affairs Administration.

LEGISLATIVE INTENT

Puerto Rico has a trajectory of more than 60 years of capital investments promoted by its industrial incentives program. This program has evolved through time responding to the challenges and opportunities of the different moments in history. The program has had, as common denominator, the concession of tax incentives, which have been calibrated in order to respond to the industrial development strategies of each period. Act No. 135 of December 2, 1997, as amended, known as the "Tax Incentives Act of 1998", was no exception. Said Act incorporated a significative change in the focus of industrial promotion, because it effectively embraced the "controlled foreign company" structures model, which became more pertinent when certain federal incentives were eliminated.

Efforts to promote Act No. 135 have created over 113,000 direct jobs and 273,000 indirect jobs, which constitutes more than 40% of the labor force of Puerto Rico. One of the most resent initiatives incorporated to this Act, the pioneer industry, has attracted significant investments in biotechnology, medical instruments, telecommunications, and information technology and has generated over 3,000 jobs. Of the 1,400 business covered by Act No. 135, 70% are from local capital. Multinational entities also covered by Act No. 135, contribute approximately 1.3 billion dollars in income taxes and withholdings of payments for royalties to non-residents. These companies also make significant tax contributions to our municipal governments.

The manufacturing sector has been and continues to be vital for Puerto Rico's economy. Nonetheless, the economic models that we had in place 60 years ago, and even those from 10 years ago, have changed. The globalization of markets, the increase in productivity due to the use of high technology, the appearance of new markets, the signing of free commerce treaties, regionalization and new models of production, have turned the world into a global village. These changes present new challenges and opportunities for the industry and for our people.

Puerto Rico faces a historic moment with great challenges. Its competitive position against of other jurisdictions in attracting capital investments has been undermined by internal and external

circumstances. Emerging economies are ever more aggressive and effective in their efforts to attract capital. Advances in the areas of technology, information technology, communications, biotechnology, robotics, and renewable energy, among others, have changed the interests of investors and the skills required from human capital. The increase in energy costs and in the costs of doing business in Puerto Rico, in general, harm our competitiveness.

The international tax system has undergone changes which eliminate barriers. The world is turning into one great, but single, jurisdiction. Isolated focuses take away from competitiveness. As global barriers are being eliminated in every scope, in the same way synergies between manufacturing and service providers are achieved through new processes, which can be manual, technological, or virtual. Recognizing this reality and accepting it as an indispensable part of the new promotion strategy, requires the search for alternatives to develop and strengthen the value added chains.

The future of our people depends on the establishment of strategies to insert us into the global economy based on knowledge, that brings Puerto Rico to a development based on technology transfer process, creation of intellectual property, and innovation. For that reason, we must adopt a perspective of sustainable development that pays attention to economic, social, political, technological, and environmental factors. Education should be a priority. Puerto Rico must establish an action plan that is a cohesive instrument and in agreement with the commitment for an educational system based on languages, mathematics, and science.

The "Economic Incentives for the Development of Puerto Rico Act" will be the spearhead center of multiple initiatives that Puerto Rico must make in order to be successful in this effort. It recognizes how important it is for Puerto Rico to continue being attractive for the group of businesses that constitute the backbone of the incentives program, elevating to a maximum the competitive advantages that 60 years of experience and association with this industry have given us. This sector has had great impact on multiple sectors, such as the creation of a middle class and a world class offer of technical service providers. In the same way, me must emphasize and recognize the preponderance of the local sector, an indispensable tool for the creation of jobs and for the strengthening of the value chains.

This "Economic Incentives for the Development of Puerto Rico Act" responds to strategic decisions about what should be the public policy of Puerto Rico, which are:

1. Provide an entrepreneurial environment and the adequate economic opportunities in order to continue developing a local industry, recognizing that the local businessman person is the cornerstone an essential part in the current present and future economic development of Puerto Rico. It is our interests to prioritize the emerging business person to support his or her development and growth which integrates the interlinking of our economy and the value added chains.

2. Offer an attractive tax proposal to attract direct foreign investment and be on par with the most competitive jurisdictions for high technology and high value added industries.

3. To guarantee a relationship between the promoted industry the Government of Puerto Rico and its components, which is founded on public transparency, stability, certainty, and credibility. All of the components of our society must offer strong support to this program and to the respect and fulfilment of the commitments that are part of it for the well-being of Puerto Rico.

4. To support the initiatives of the private sector, the academia, community enterprises, and municipalities, leading to economic development of Puerto Rico through innovation, research and development, and investment in the necessary infrastructure for a better quality of life and efficiency of industrial operations.

5. To mitigate high operational costs and soften regulatory limitations which discourage the competitiveness of Puerto Rico. For instance, it is essential to promote the revision of laws and/or regulations which limit the use of certain fuels in the manufacturing process in a way that to allows the industrial sector to utilize more economic fuels, provided that the efficiency of absorption of the process or of the control equipment does not interfere with the requirements for pollutant concentrations in the atmosphere established by law, or any other applicable requirement.

6. To take conclusive actions in order to reduce energy costs through different alternatives of renewable energy.

7. To recognize the importance of the decentralization of the Government and, in function of the aforementioned, support the efforts being developed at the regional level to promote economic development and technological innovation. Said efforts, which integrate government, business and academia, have already produced results and it is necessary that they be supported, to ensure their contribution to Puerto Rico economic future.

In consideration of the above, this Act gathers the benefits of Act No. 135 and of proposals such as H. B. 3798, and amplifies the definition of eligible business in order to recognize the importance of the services industry, based evermore on the knowledge economy , and in that way trigger the local industry. It also establishes a system of fixed income tax rates, calibrated to attend to the permanency and stability of the existing businesses, to respond to the growing world competition, and to protect Puerto Rico's taxable base in an equitable manner. On the other hand, it offers different tax alternatives to promote strategic investments and increase the acceleration of the economy, and provides mechanisms for the autonomous and non-autonomous municipalities to have a more ample and stable income base, while reducing unnecessary friction and uncertainty with investors in these municipalities. In this way, the "Economic Incentives for the Development of

Puerto Rico Act" establishes, as a key piece, the Development Fund and increases its resources in order to increase its positive impact in the economy in general. The success and accomplishments of this Act, as well as the need to make decisions in a proactive manner, in the short, medium, and long term, so that it continues to be effective, will be measured through a number of processes, performance metrics, and information requirements, as established in the statute. For purposes of the effectiveness and continuity of this Act, an expiration term is not established, as mechanisms for measurement, revision, and oversight have been included. These mechanisms ensure that this statute remains as an instrument for agile and competitive promotion, and that the continuos compliance of its provisions is supervised.

This "Economic Incentives for the Development of Puerto Rico Act" is the result of a historic process of collaborative efforts between the private sector and the Executive and Legislative branches of the Government of Puerto Rico. It is one of many initiatives that should be considered and emulated in order to accommodate the public policy of Puerto Rico to the current global tendencies to satisfy our current needs, setting the stage for the well-being of our future generations. This initiative constitutes a great starting point for the investment in Puerto Rico's future and an excellent first step towards the solution of the problems that affect our society.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF PUERTO RICO:

Article 1 - The "Economic Incentives for the Development of Puerto Rico Act" is created to read as follows:

Section 1.- Declaration of Public Policy

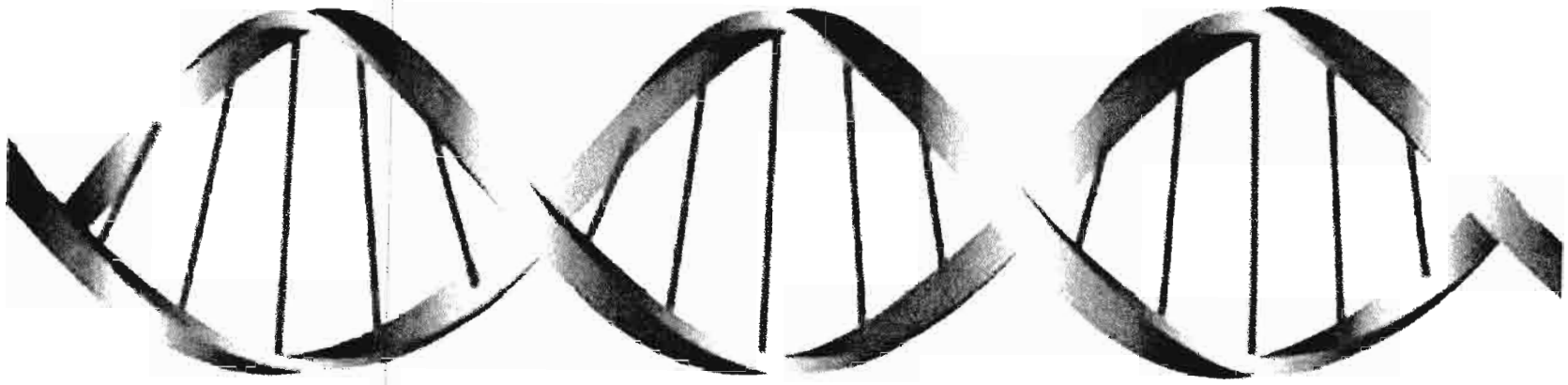
The public policy of the Government of Puerto Rico shall be:

(1) To provide an adequate environment and opportunities for the development of local industry.

(2) To offer high technology and high value added industries an attractive tax proposal in order to attract foreign direct investment to compete with other jurisdictions.

(3) To guarantee a relationship between industry and the Government of Puerto Rico which is founded on stability, certainty, and credibility. All of the components of our society must offer strong support to this program and to the respect and fulfilment of the commitments that are part of it, for the well-being of Puerto Rico.

(4) To support the initiatives of the private sector, academia, community enterprises, and municipalities. This with the purpose of contributing to the economic development of Puerto



BIOISLAND

BIOISLAND

O'NEILL & BORGES

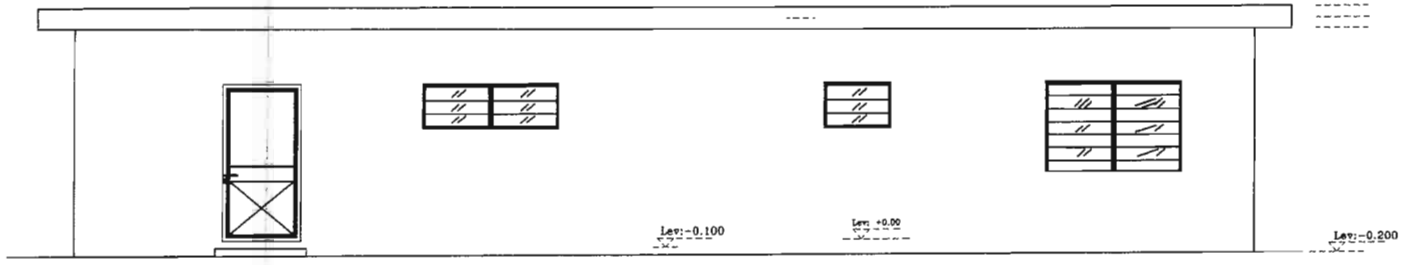
PRIDCO
COMMONWEALTH OF PUERTO RICO

ELIGIBLE BUSINESSES - ADDITIONAL

- Research and development laboratories and animal breeding for experimental use and medical purposes
- Licensing of intangible property developed or purchased by the exempt business
- Energy generation using renewable sources
- Agricultural biotechnology processes
- Others

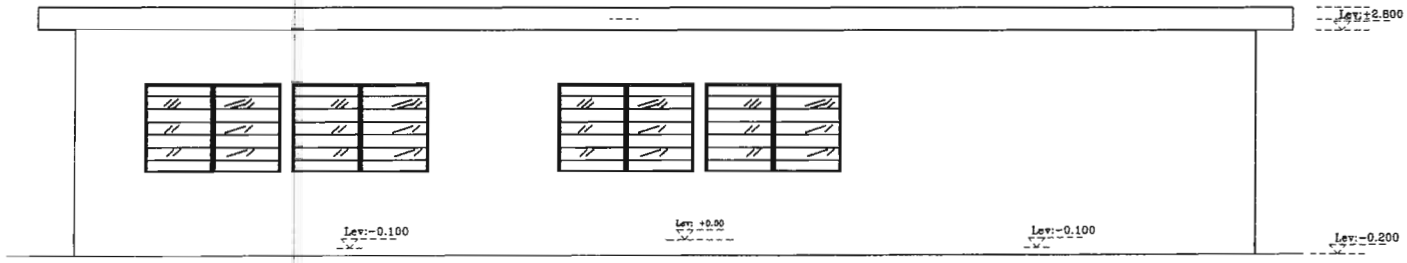
LIFE SCIENCES SUPPLY CHAIN: CAPABILITIES

- Broad network of local and global suppliers for the life sciences industry in areas such as:
  - Architectural design and engineering
  - Construction and construction management
  - Project management
  - Procurement
  - Quality and regulatory compliance
  - Automation, process control, validation and commissioning
  - Equipment and equipment installation
  - Excipients, raw materials and components
  - Packaging
  - Plastics extrusion and molding
  - Warehousing and distribution
  - Transportation and shipping
  - IT and Business Integration Solutions
  - HR Recruitment
  - Legal and financial services
  - Waste management



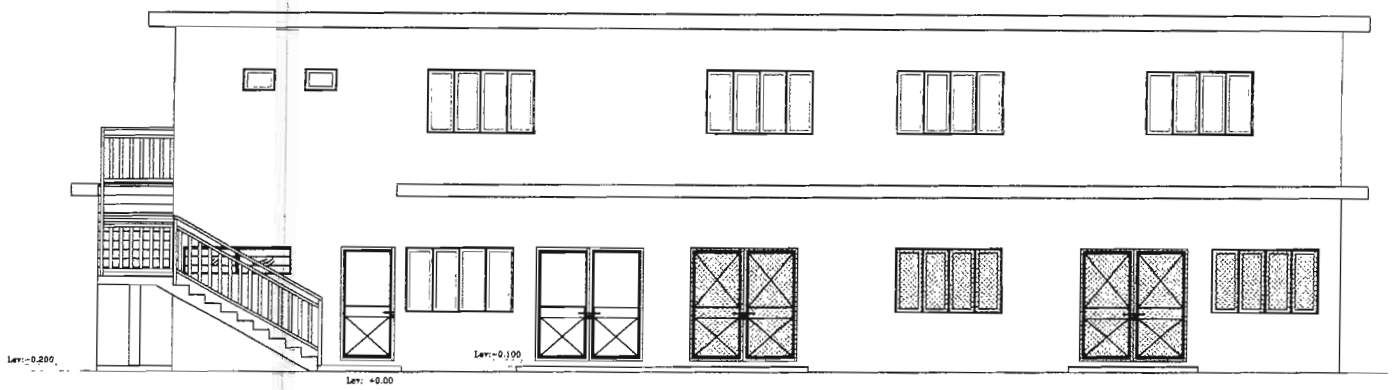
Rear Elevation

Revision C: 13.02.09 Revision B: 16.10.08 Revision A: 03.10.08	Revision D: 20.02.09	PROJECT TITLE Hospital Complex Breeding Site	DRAWING PART Elevation	DRAWING TITLE Rear	Scale Date Drawn	1:75 08/09/08 JF	Drawing No JFA002/Hos/Elev /02 Rev D



Front Elevation

Revision C: 13.02.09 Revision B: 16.10.08 Revision A: 03.10.08	PROJECT TITLE Hospital Complex Breeding Site	DRAWING PART Elevation	DRAWING TITLE Front	Scale Date Drawn	1:75 08/09/08 JF	Drawing No JFA002/Hos/Elev /01 Rev C



Rear Elevation

Revision D: 21.01.09 General Revision
Revision C: 20.01.09 General Revision
Revision B: 19.12.08 General Revision
Revision A: 03.10.08

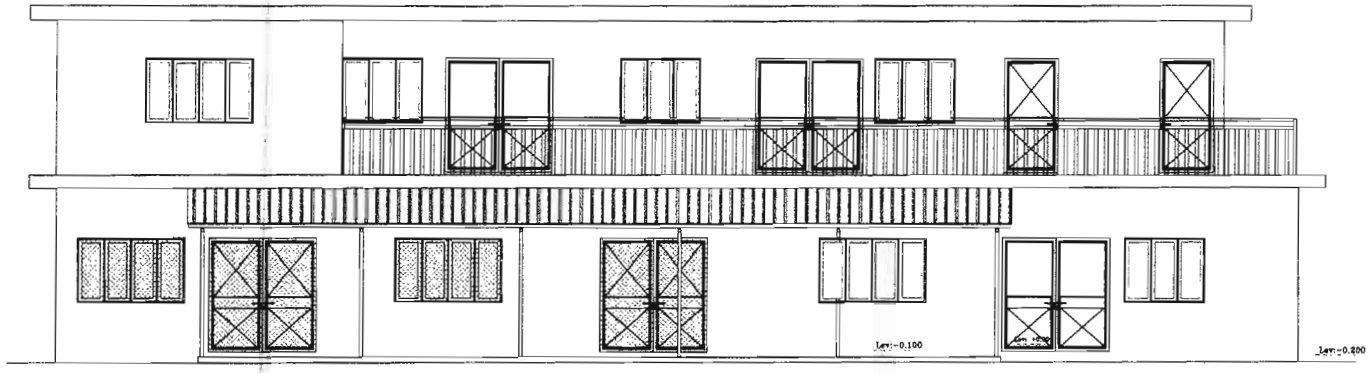
	GENERAL NOTES
1	All dimensions are in millimetres
2	Do not scale from Drawing. Only figured dimensions to be used
3	Reinforcement cover to be -Foundations : 50 mm -Columns & Beams : 30 mm -Slabs : 25 mm
4	Concrete Strength : Grade 30
5	Drawing must be interpreted Considering other drawings
6	Reinforcement lap Length to be 41 x Bar diameter

PROJECT TITLE
Services Building

DRAWING TITLE
Rear

DRAWING PART
Elevation

Scale	1:75	Drawing No
Date	11/09/08	JFA002/Services/ Elev/02 Rev C
Drawn	JF	



Front Elevation

Revision D: 21.01.09 General Revision
Revision C: 20.01.09 General Revision
Revision B: 19.12.08 General Revision
Revision A: 03.10.08

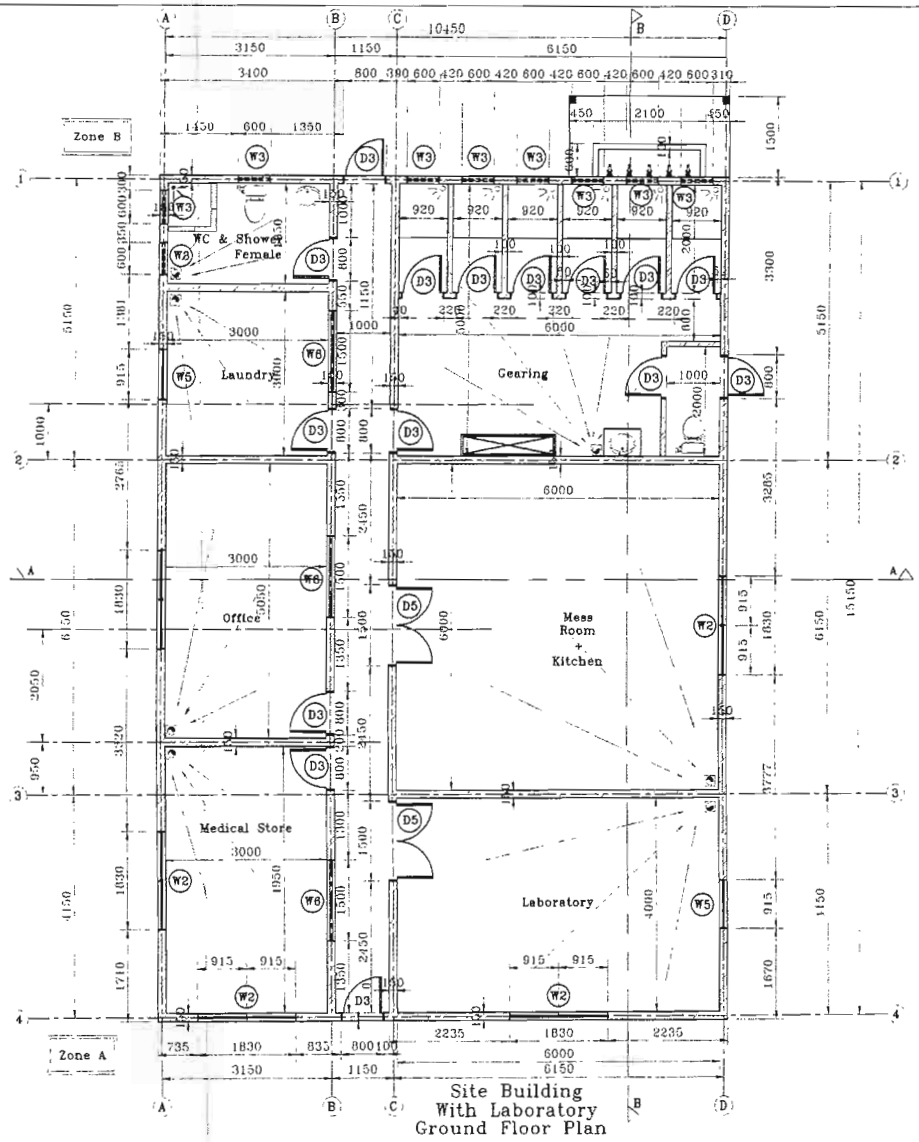
	GENERAL NOTES
1	All dimensions are in millimetres
2	Do not scale from Drawing. Only figured dimensions to be used
3	Reinforcement cover to be -Foundations : 50 mm -Columns & Beams : 30 mm -Slabs : 25 mm
4	Concrete Strength : Grade 30
5	Drawing must be interpreted Considering other drawings
6	Reinforcement lap Length to be 41 x Bar diameter

PROJECT TITLE
Services Building

DRAWING TITLE
Front

DRAWING PART
Elevation

Scale	1:75	Drawing No
Date	11/09/08	JFA002/Services/ Elev/01 Rev C
Drawn	JF	



Site Building
With Laboratory
Ground Floor Plan

Revision D : 16.03.09
Revision C : 13.02.09
Revision B : 21.01.09
Revision A : 03.10.08

	GENERAL NOTES
1	All dimensions are in millimetres
2	Do not scale from Drawing. Only figured dimensions to be used
3	Reinforcement cover to be -Foundations : 50 mm -Columns & Beams : 30 mm -Slabs : 25 mm
4	Concrete Strength : Grade 30
5	Drawing must be interpreted Considering other drawings
6	Reinforcement lap Length to be 41 x Bar diameter

REVISION

Mark	Date	Details
A	03.10.08	General Revision
D	16.03.09	General Revision

PROJECT TITLE

Site Building
With Laboratory
(x1)

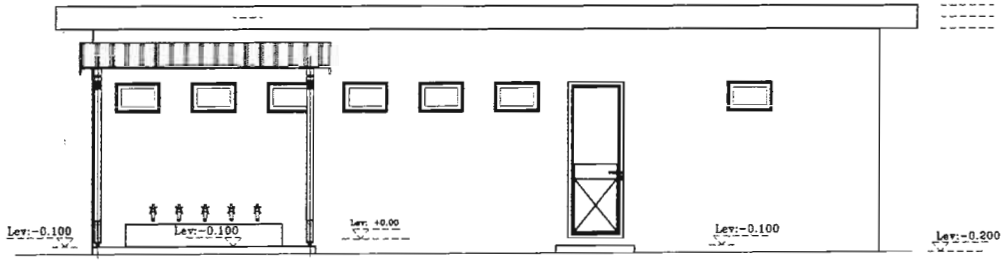
DRAWING TITLE

Ground Floor

DRAWING PART

Plan

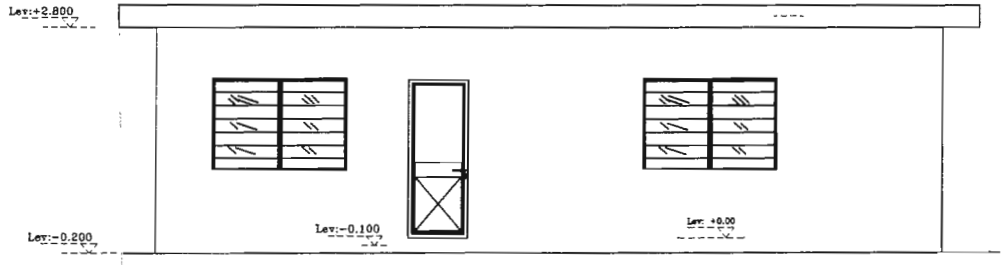
Scale	1:75	Drawing No
Date	06/09/08	JFA002/Site/Plan /01 Rev D
Drawn	JF	



Rear Elevation
(With Laboratory)

Revision D : 16.03.09
Revision C : 13.02.09
Revision B : 21.10.08
Revision A : 03.10.08

PROJECT TITLE	DRAWING PART	DRAWING TITLE	Scale	1:75	Drawing No
Site Building	Rear	Elevation	Date	11/09/08	JFA002/Site/Elev /01 Rev D
			Drawn	JF	

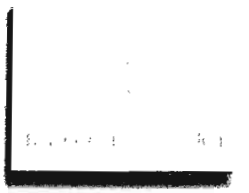


Front Elevation
(With Laboratory)

Revision D : 16.03.09
Revision C : 13.02.09
Revision B : 21.10.08
Revision A : 03.10.08

PROJECT TITLE	DRAWING PART	DRAWING TITLE	Scale	1:75	Drawing No
Site Building	Front	Elevation	Date	11/09/08	JFA002/Site/Elev /02 Rev D
			Drawn	JF	

Bioculture
Puerto Rico Inc.



Application documents

Importation for breeding , holding and exportation of Primates for scientific purposes (Biomedical research).

CONFIDENTIAL
TRADE SECRET
DO NOT PUBLISH

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	Annex to application
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Bioculture PR - List of clients

Purpose of the project

The main purpose of the project will be to breed and rear monkeys for eventual export and use in **scientific & biomedical research**.
The clients are - Pharmaceutical companies , CRO, universities , NIH research centres and privet research centres.
The monkeys will be exported mostly to the continental USA or used in Puerto Rico if needed by universities or research institutes. There may be some requirements to also export animals to Europe.

Mauritian origin monkeys enjoys definite advantages as they are SPF, being naturally free of a number of significant viruses. Thus Mauritian origin monkeys are free of Herpes B virus, STLV1 SRV

List of clients

Roche - UK
Covance – Germany
Covance – UK
Charles River – USA
Charles River – Canada
SNBL -USA
FARMACIA – Italy
Novartis – Switzerland
Pfizer –USA
Bayer - Germany
Maccine - Singapore
Charles River - Scotland
Teva - Israel
LCG bioscience - Italy
GSK - Belgium
Nerviano – Italy
Aventis Sanofi – France
Astra Zeneka -UK

Government of UK
Government of Sweden SMI
Government of Canada

NIBSC - UK
Porton Dawn -UK
Hebrew University
Bar Ilan University
Technion University
Tel Aviv University

Trade Secret Do not publish

Weitzman Institute
University of London
Oxford University
Inveresk - Scotland
UPR - PR
NIH research centers
Wisconsin - NIH primate center

Trade Secret Do not publish

Bioculture Puerto Rico Inc.

Preliminary Plan
Cages & Buildings

Presentation to the special task force for infrastructure | 3.6.2008

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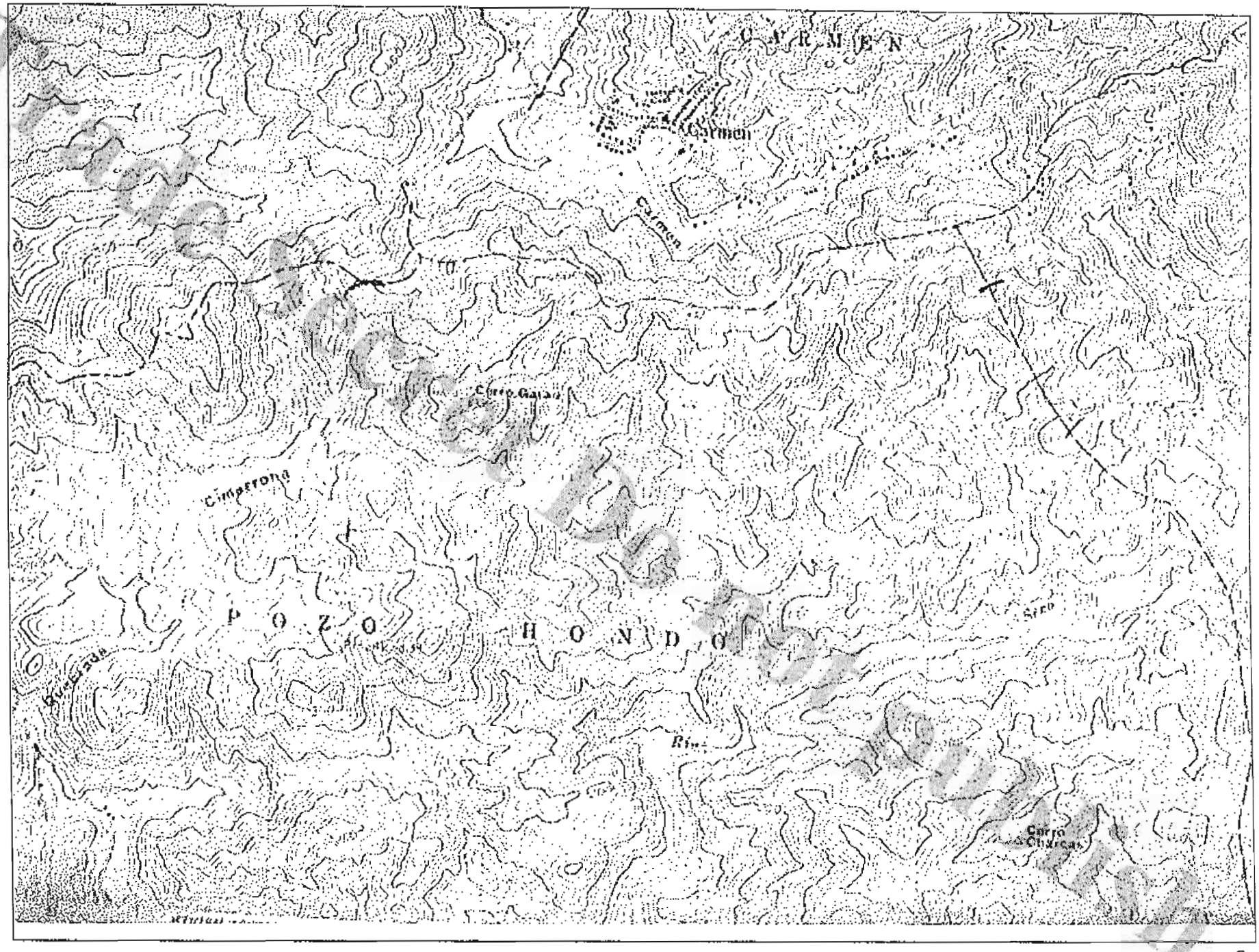
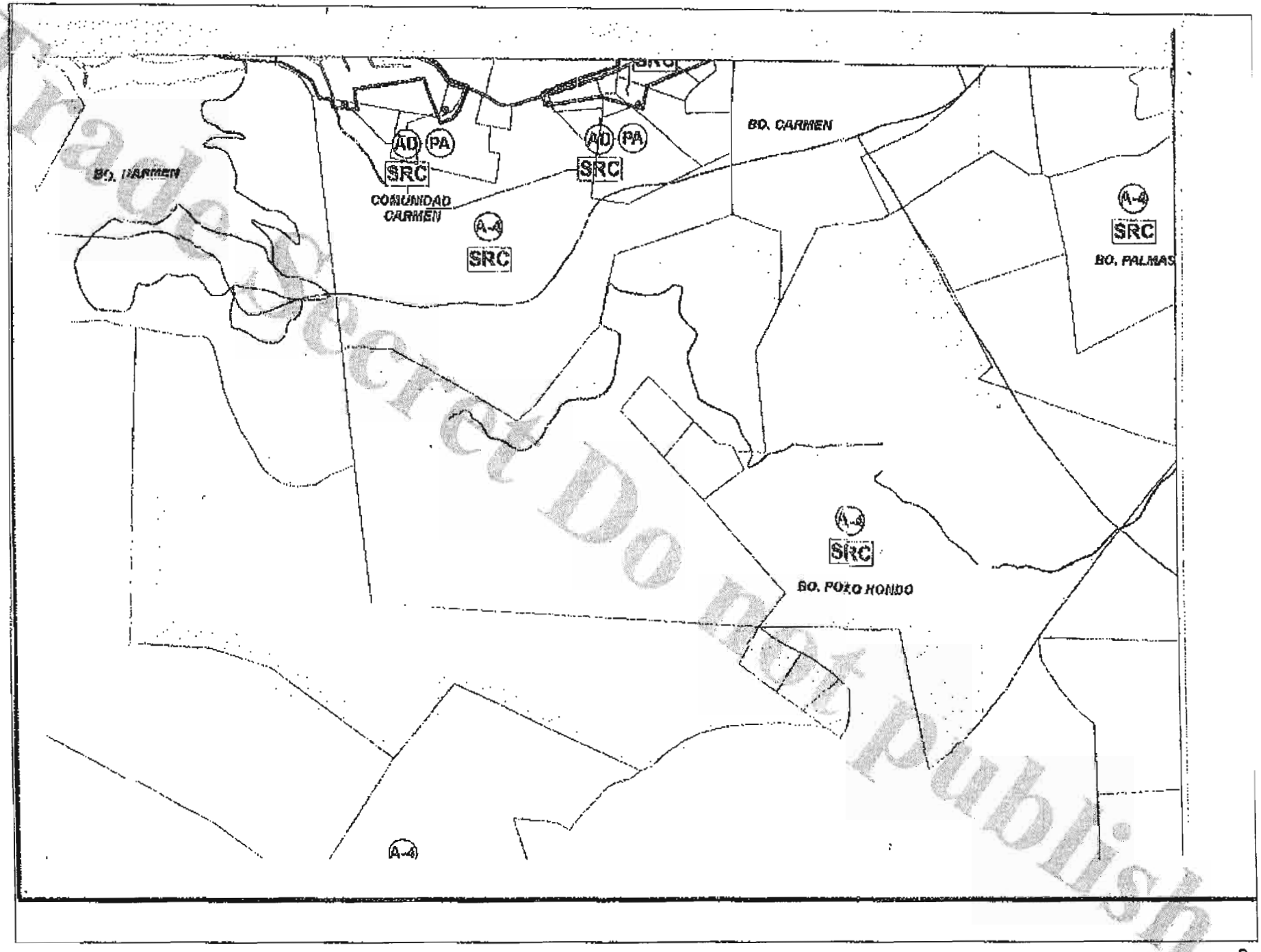

C A R M E N
Carmen
Carmen
Cerro Gaiso
Cimarrona
P O Z O H O N D O
Quebrada
Cerro Chiracas



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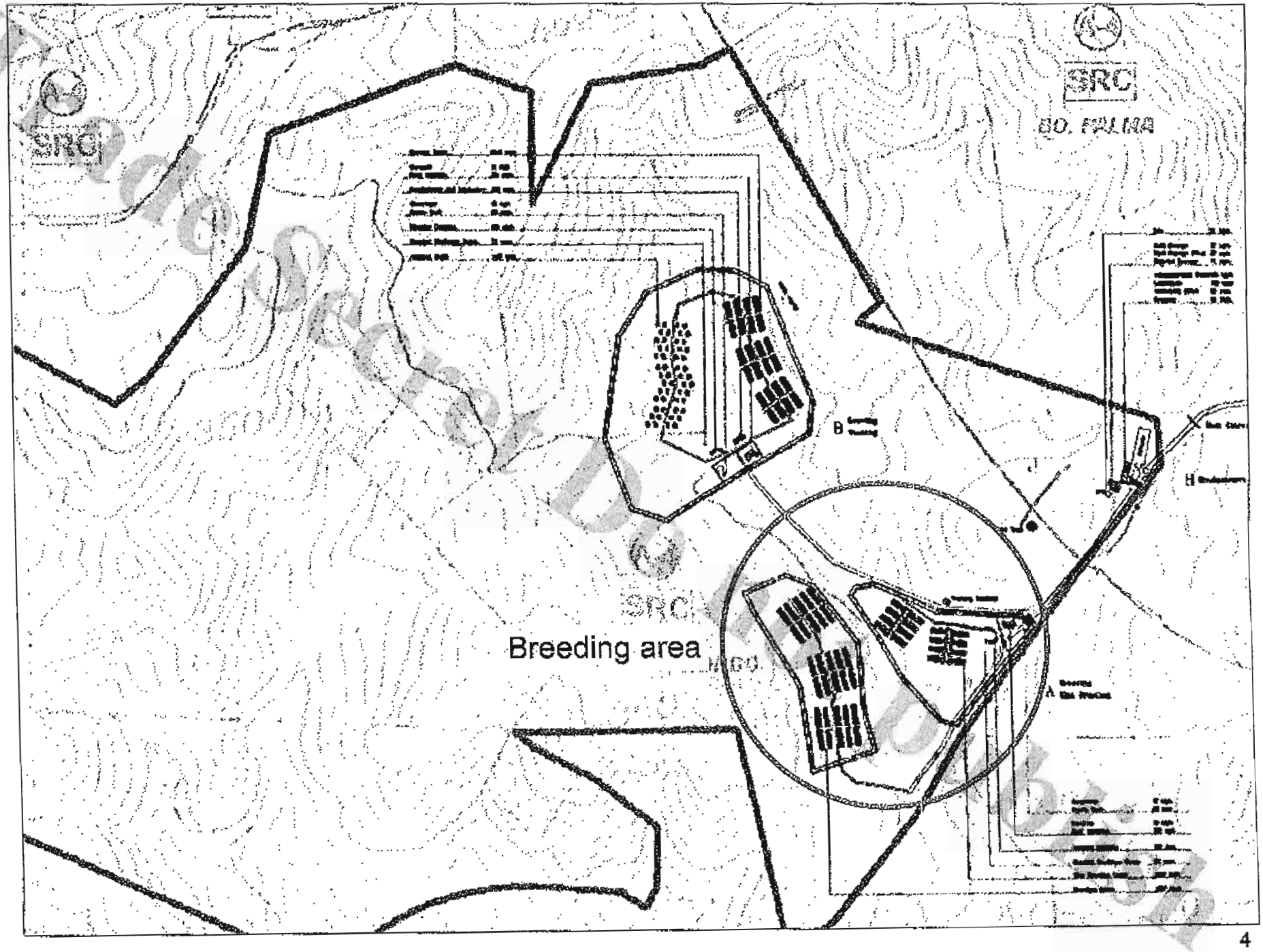
SRC
SRC
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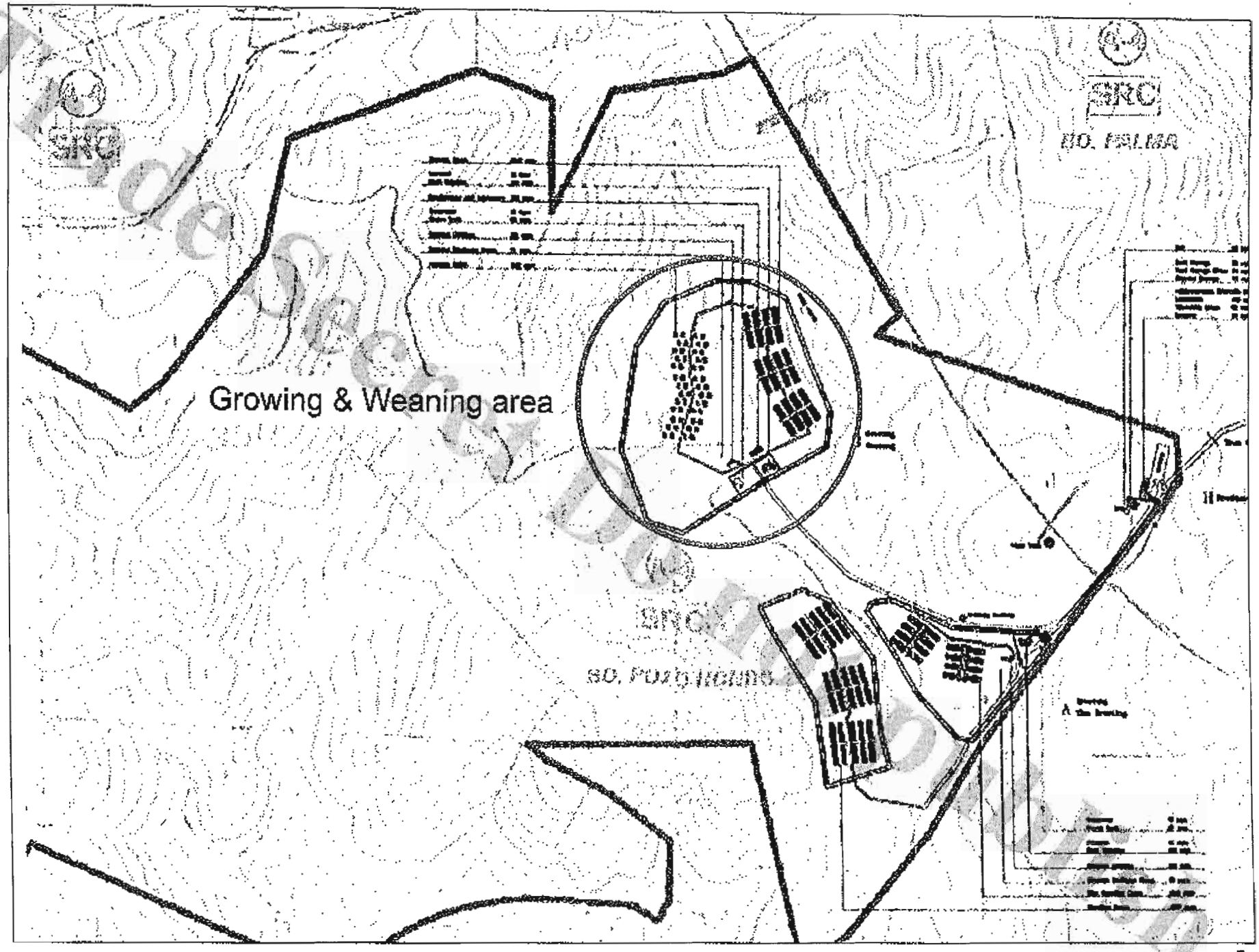
SD. PALMA
B
H
Breeding area

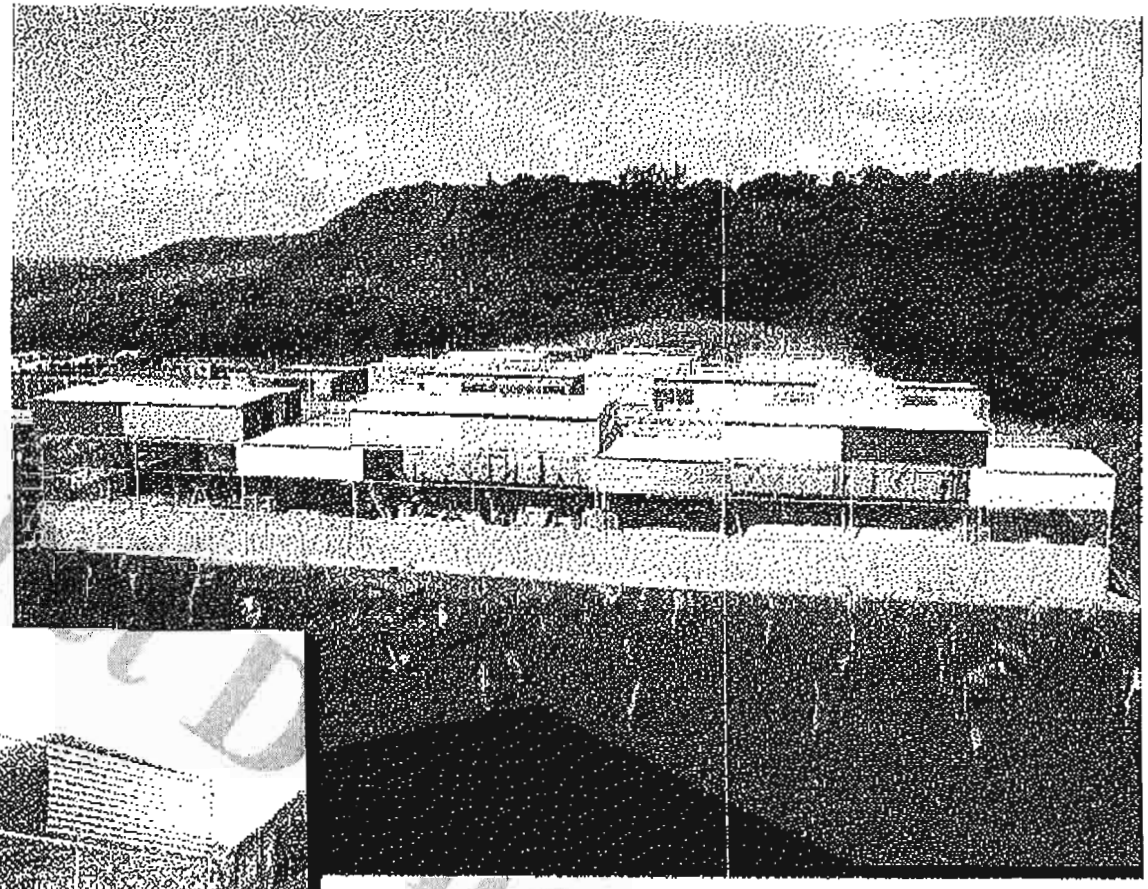

Growing & Weaning area
SRC
SRC
SRC

Animal Cages

Trade Secret Do not publish

Breeding

3000-4000 breeders



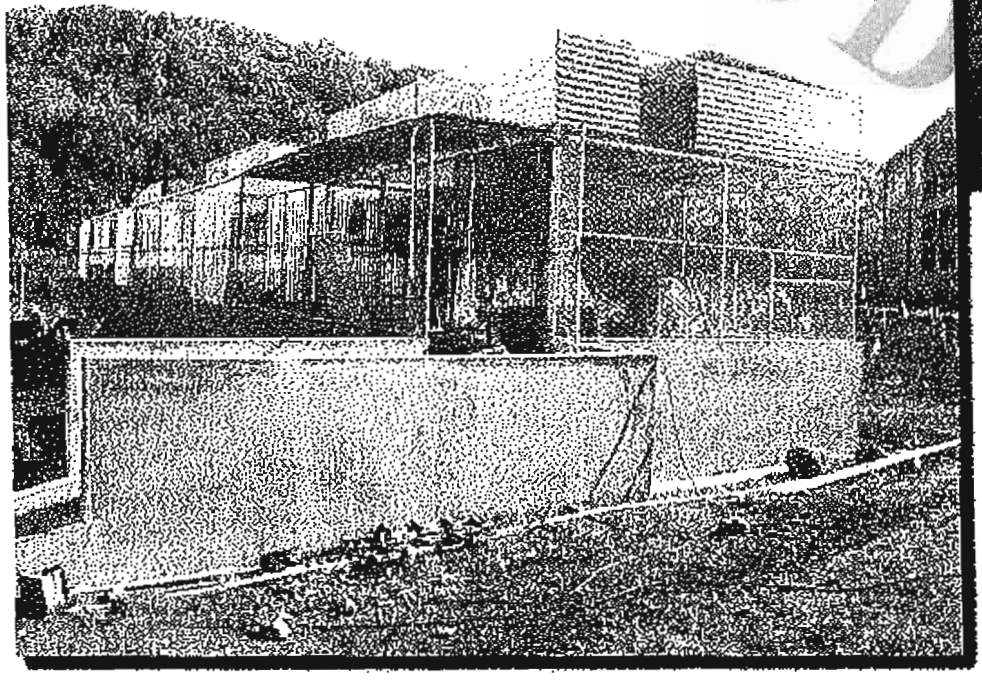
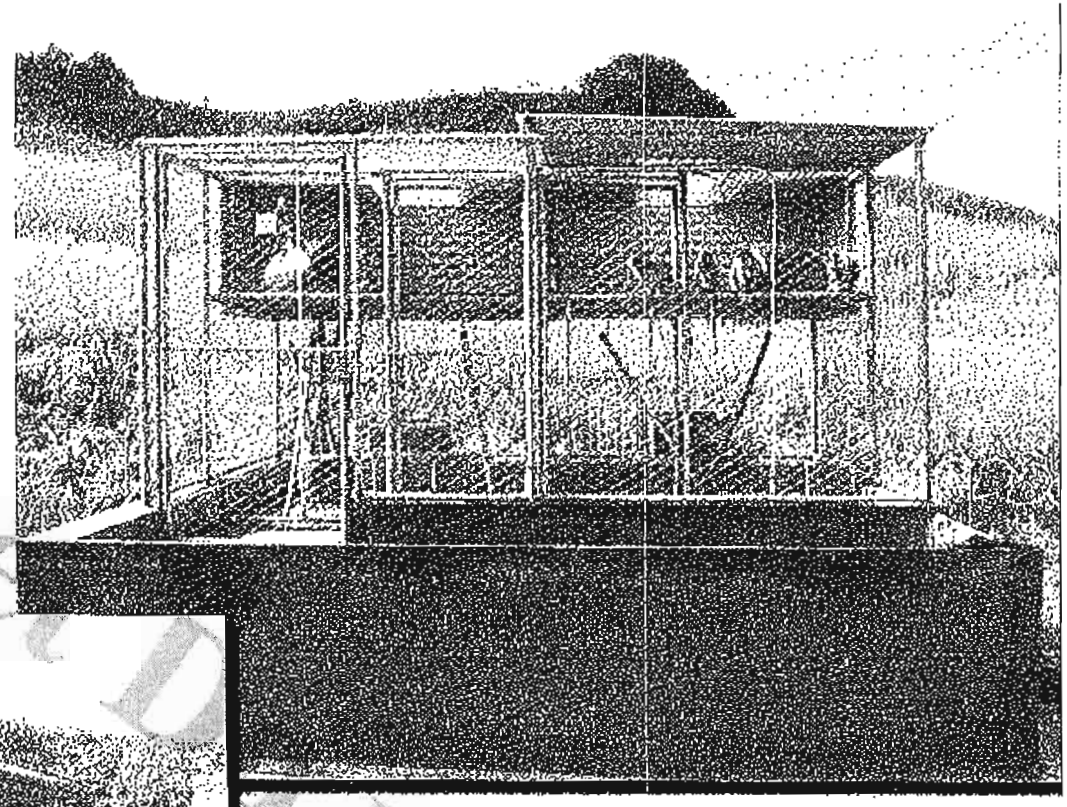


Photo from our facility in
MAURITIUS

Trade Secret Do not publish

Weaning



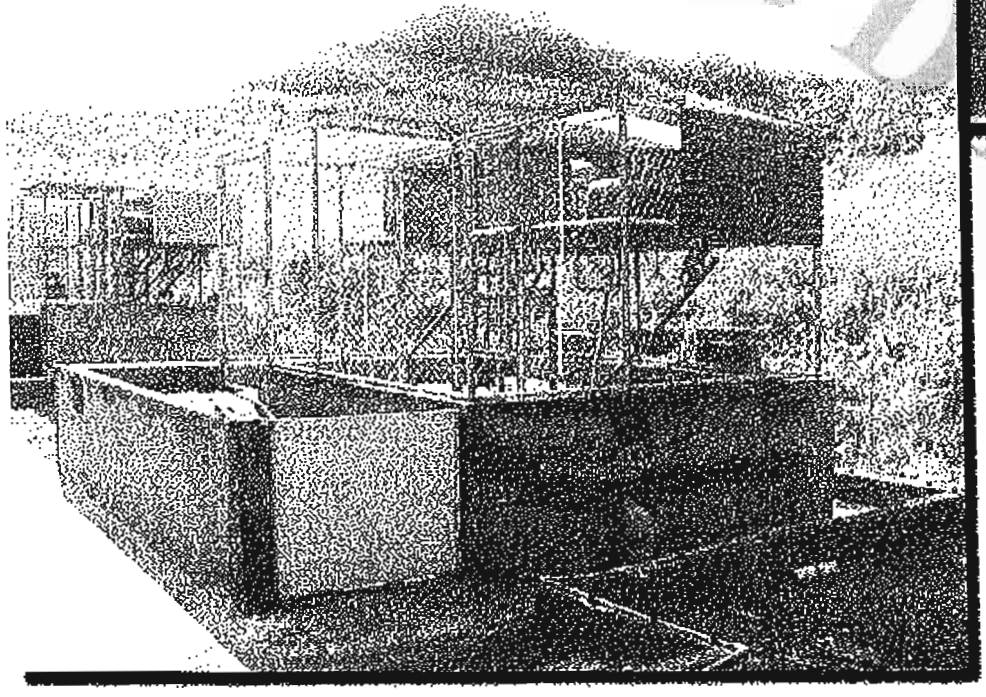


Photo from our facility in
MAURITIUS

Trade Secret Do not publish

Growing

2080 animals in total

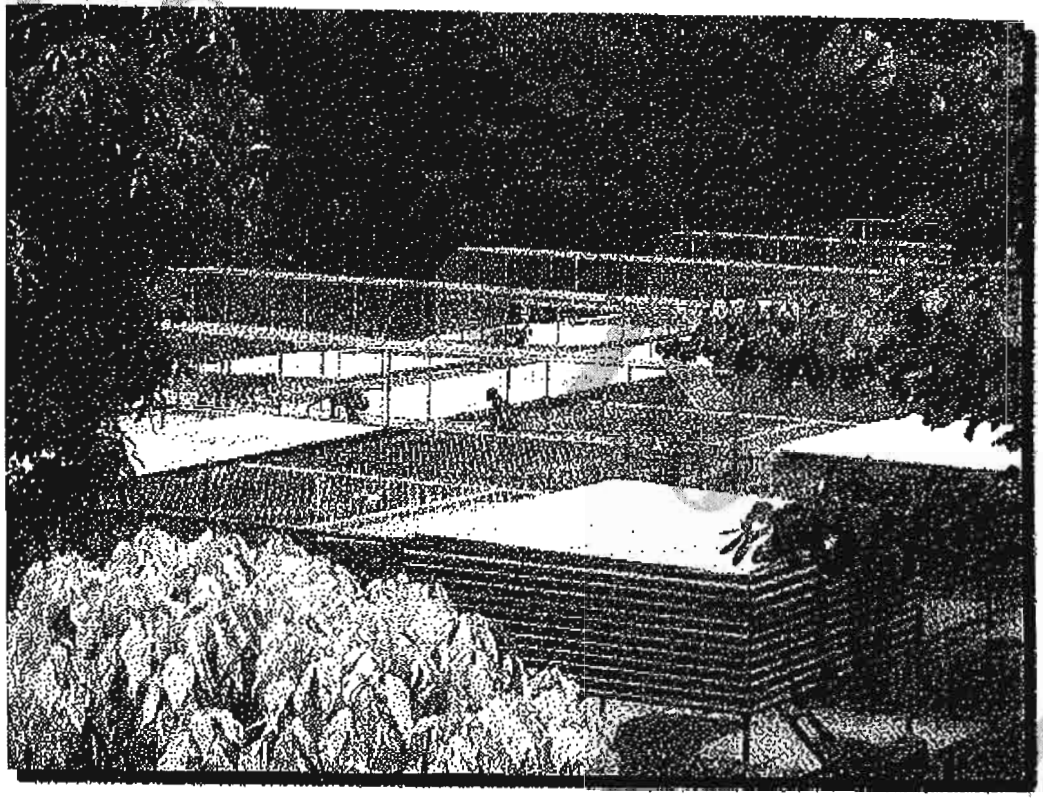


Photo from our facility in
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Trade Publish

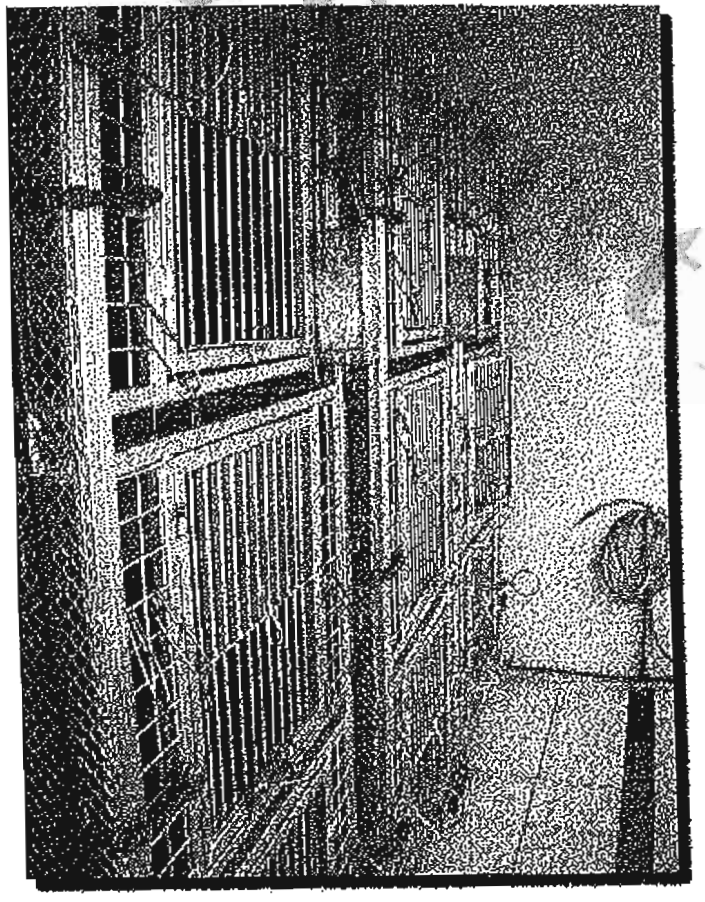
Ancillary Buildings

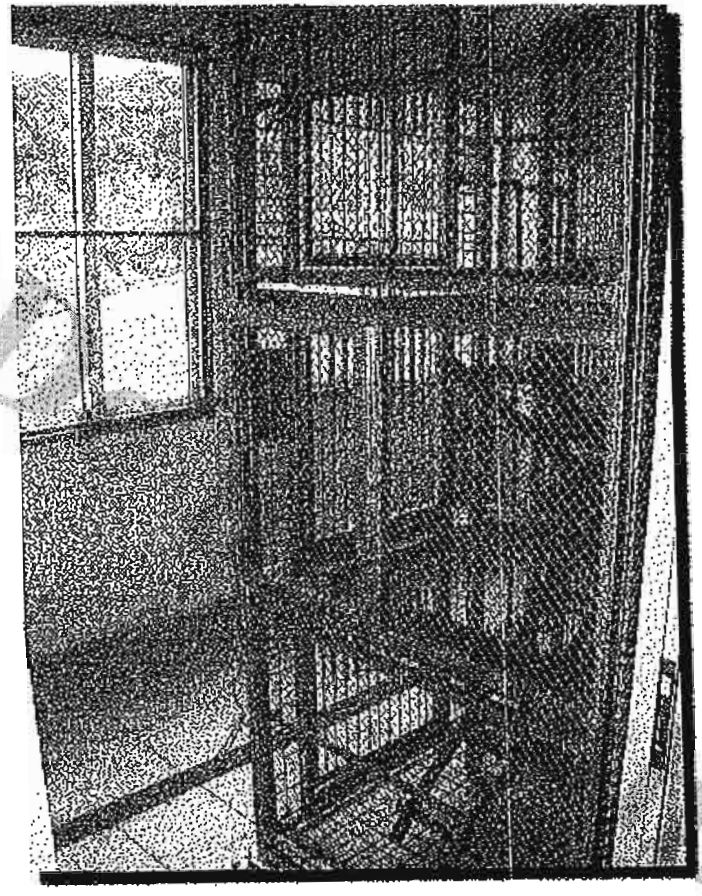
Trade Secret Do not publish

Hospital

Trad ublish

Sick & injured animal cages





Trade Secret Publish

Hospital discharge cages

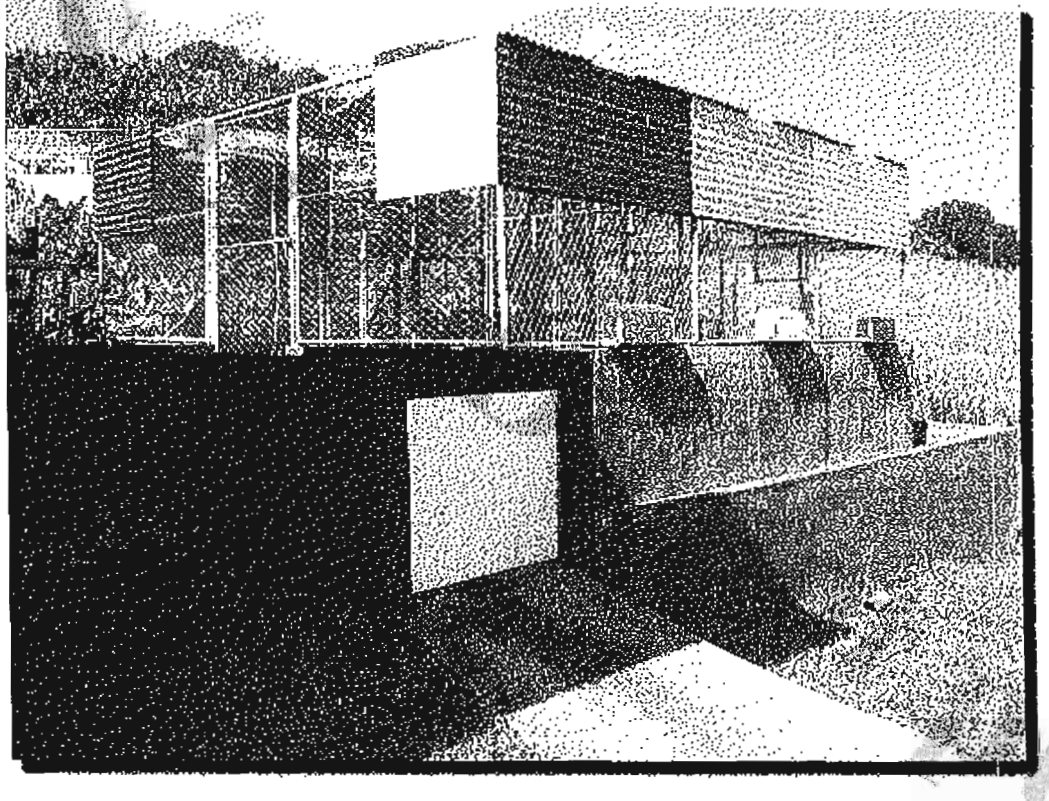


Photo from our facility in
MAURITIUS

Trade Publish

Food store

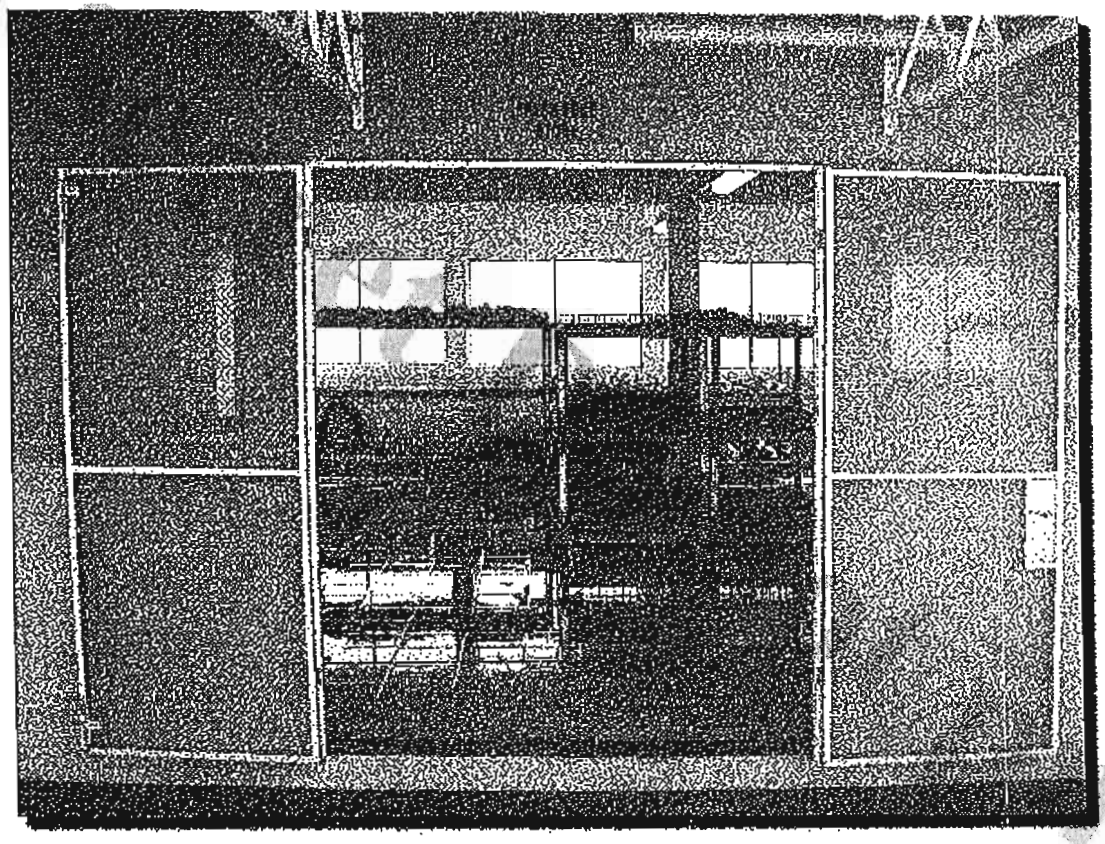


Photo from our facility in
MAURITIUS

Trade Publish

Food store & staff complex

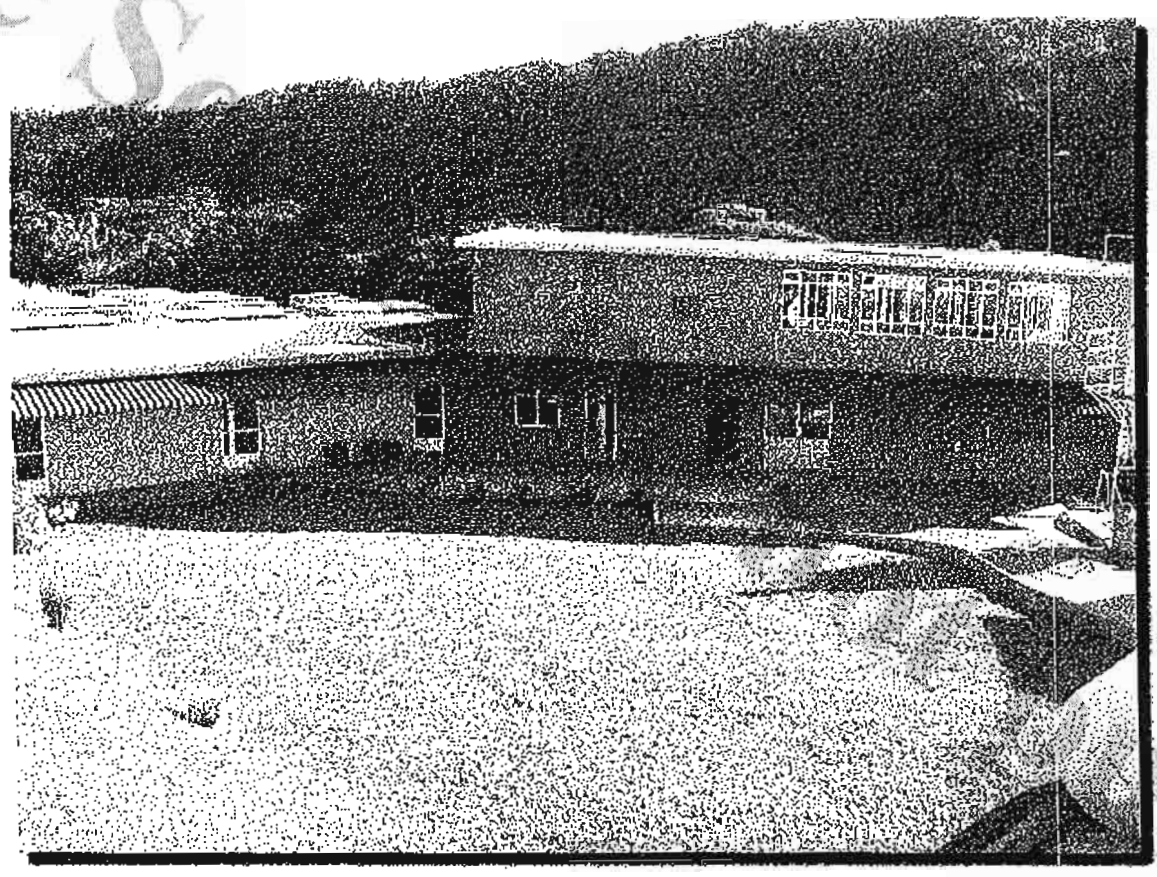
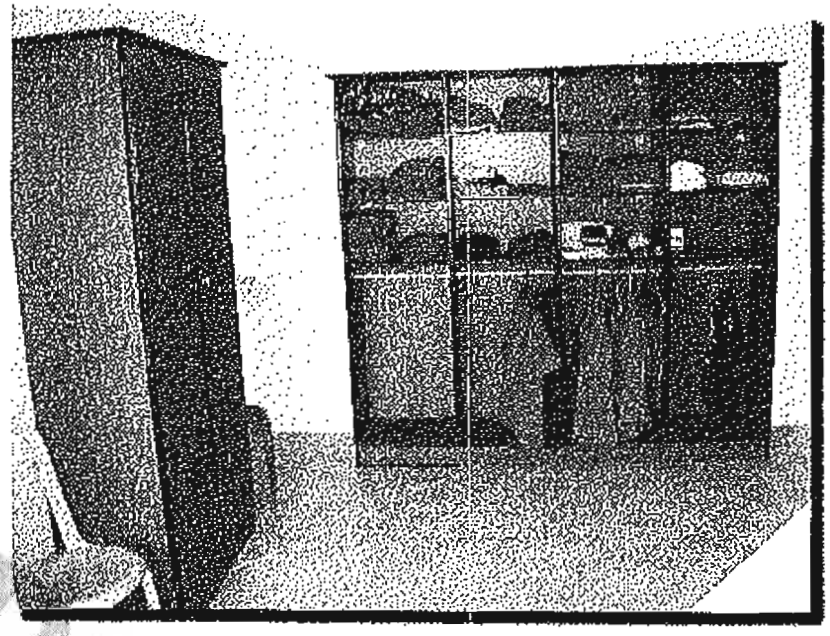


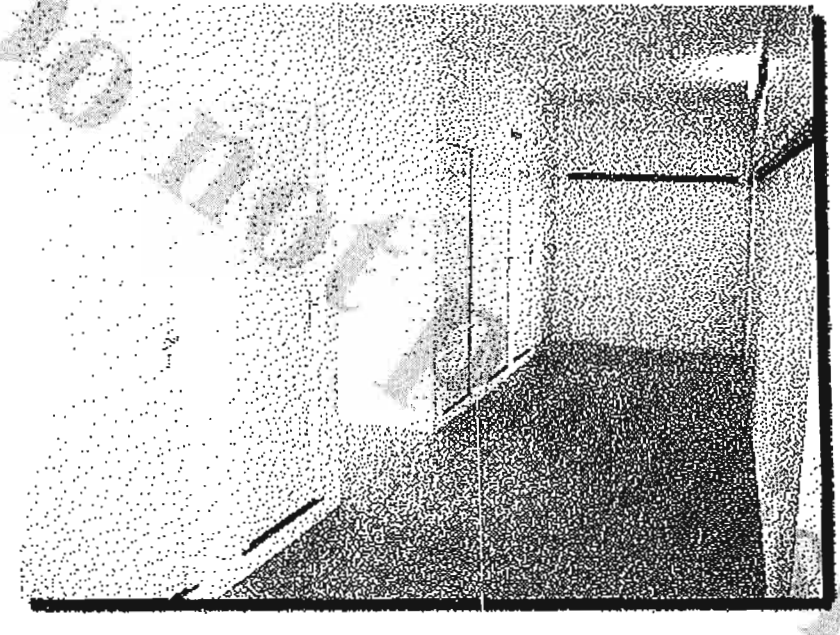
Photo from our facility in MAURITIUS

Trade Secret Publish

Staff complex

Photo from our facility in
MAURITIUS





Trade Secret Information

General Store

Photo from our facility in
MAURITIUS

Trade Publish

Generator

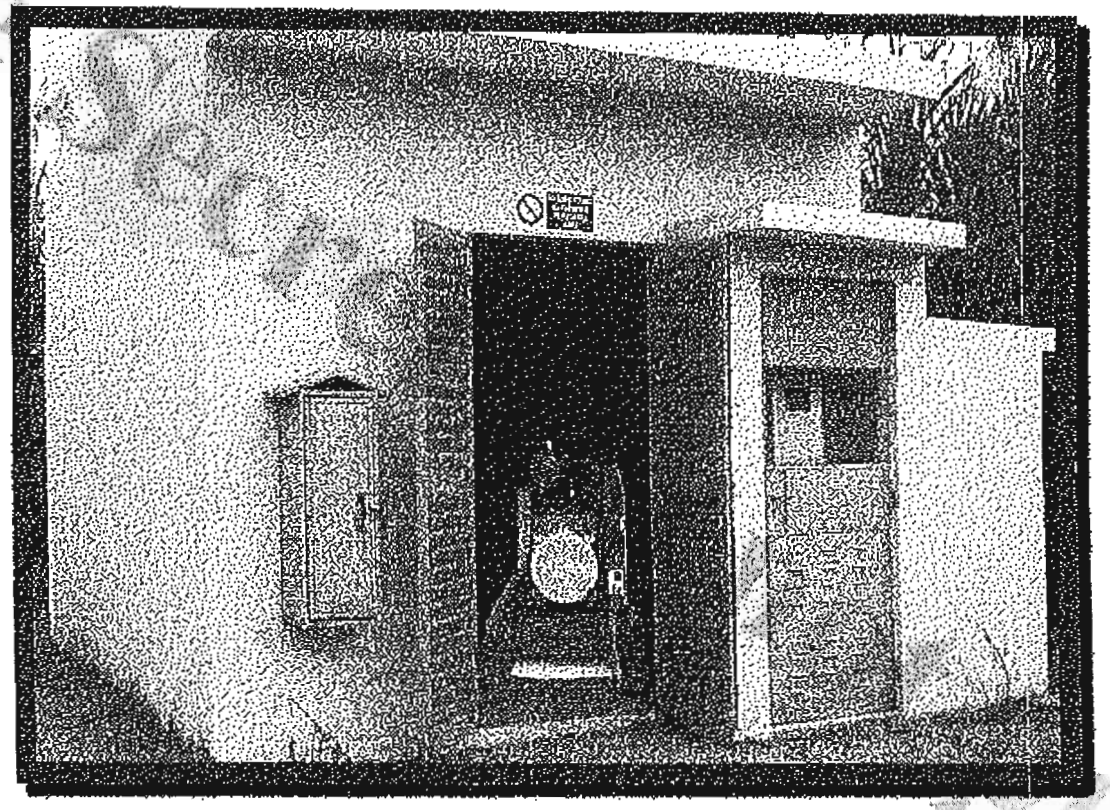


Photo from our facility in
MAURITIUS

Trade Secret
Do Not Publish

General view

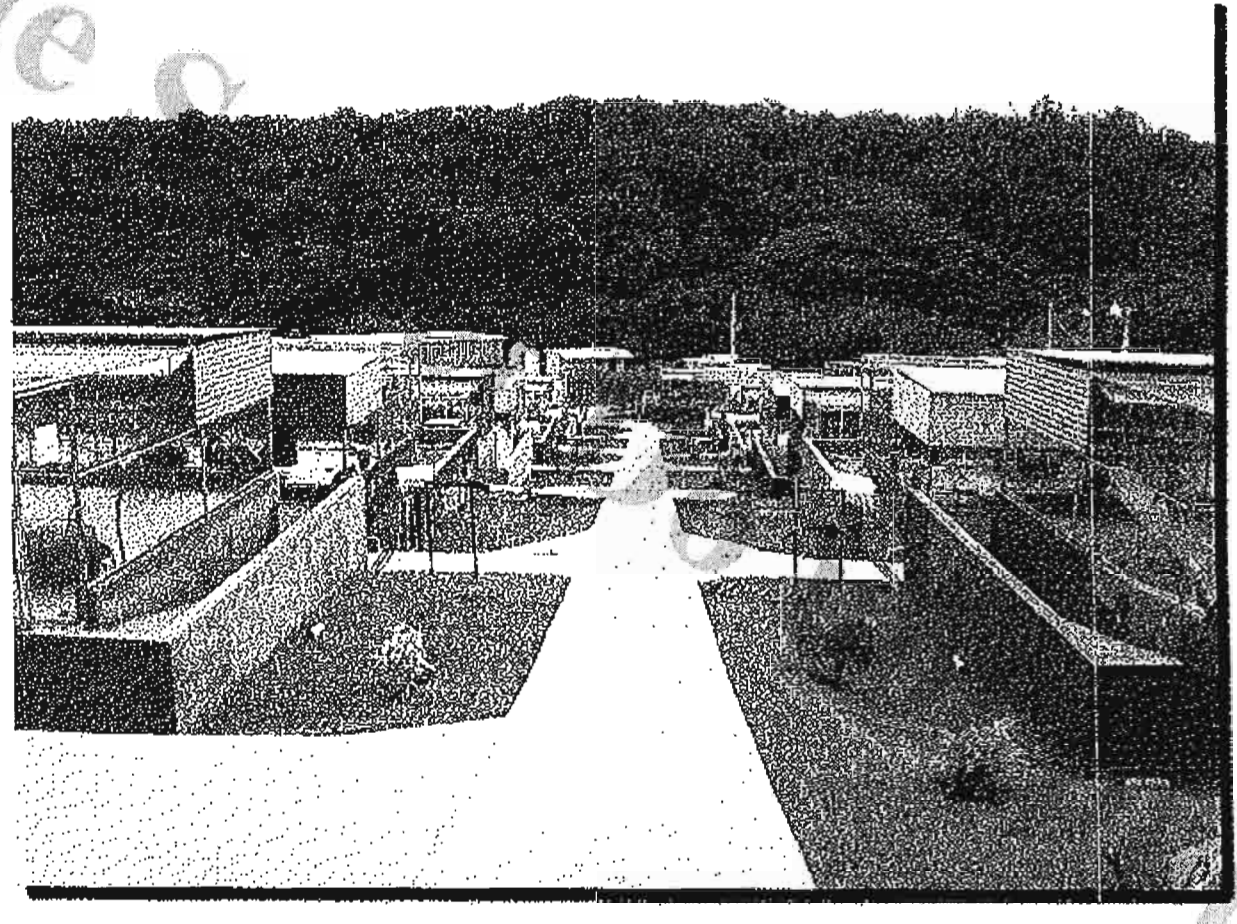


Photo from our facility in
MAURITIUS

Trade c blish

General view

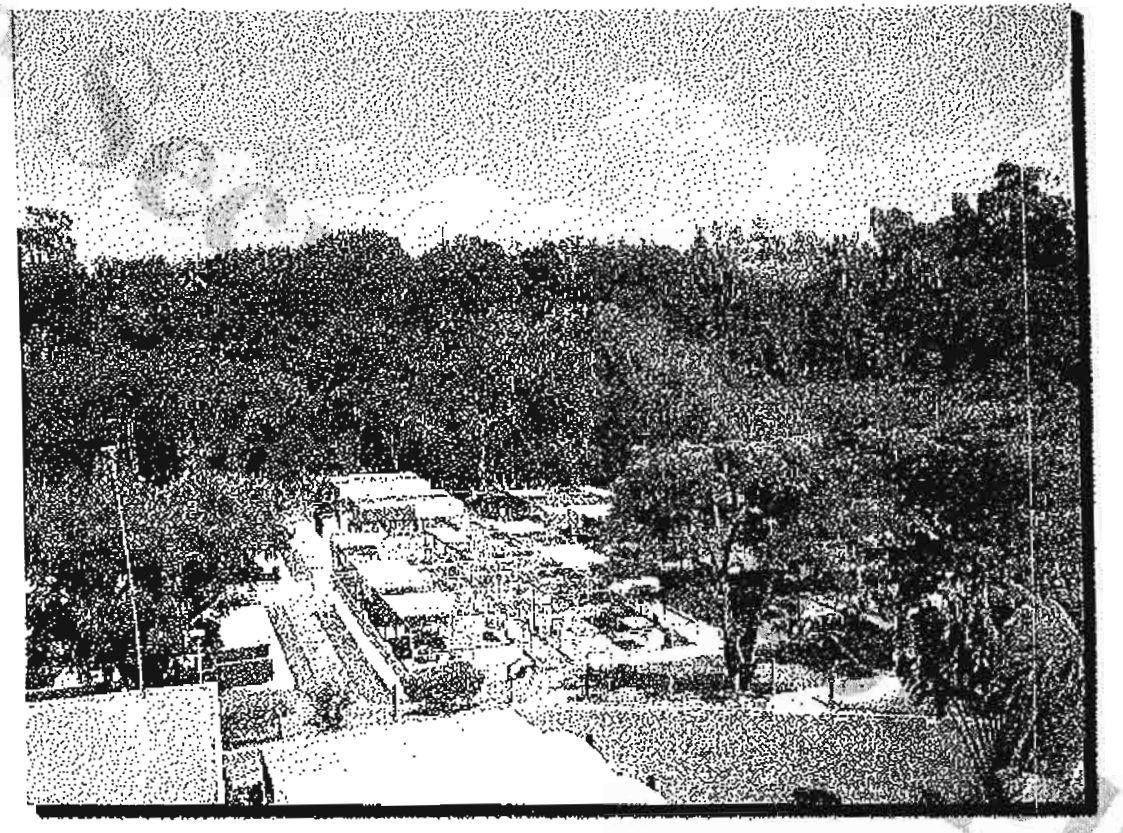


Photo from our facility in
MAURITIUS

Trade Publish

Planing and construction

As we built many farms like this in other places we have a extensive experience in construction of farms that will be adaptable for SPF animals , construction will comply with all the requested standards and will be the best from an animal welfare point of view.

As all elements of the farm are already planed once the permits will be given we could move into construction in a very short period and see the results very soon.

Trade Secret Do not publish

BIOCULTURE PR WORK INSTRUCTION

Section	**: WI71-03**	**Issue No.**	**: 5**
Title	**: Site Security**	**Date of Issue**	**: 10 October 2008**
Compiled by	**: Security Manager**	**Approved by**	**: Admin & Personnel Manager**

Sites applicable: All

Responsibilities: Security Personnel
Admin & Personnel Manager
Site Supervisors

Policies:

1. For security purposes, BCPR sites are divided into sections:

   (i) BCPR cages
   (ii) Administration

   All sections are under security control on a 24 hour basis.

2. BCPR has a "no visitor" policy except otherwise authorized by Management.
3. BCPR is the world leader security system.
4. It has metal fences which can not be cut with handy instruments and a 6 feet high fence.
5. Above this fence we have on top another electric fence, which will give electric shock to person or animal which will clime this fence. If the fence is not functioning or if someone will cut the wire this will cause the alarm to go on and alert security that there is a problem with the fence indicating the exact location on the fence.
6. Above the metal fence we have another horizontal electric fence to prevent animals to go out of the farm area. This fence will give electric shock if someone touch it and will make the alarm go on.
7. Beside this the fence is divided to sectors which has a specific number and on the fence we have the world best "touch sensor system" – once animal or person touch the fence, or clime the fence or cut the fence the alarm, siren and flashing light go on and sign the security what sector of the fence is affected so they can respond fast and efficiently.

Trade Secret Do not publish

	Activities	Responsibilities	Notes	Records
1	During working hours, Site Supervisor shows vigilance at all times to ensure site security.	Site Supervisor	– Any abnormal situation must be reported to Security Officer/ Security Manager.	–
2	Preparation of roster for Security Officers for each security gate.	Security Manager	– All sections to have Security Officers on a 24 hour basis. – Security Manager to ensure that security personnel have been trained. –	QR63-25 QR62-07
3	Record any issues that require follow up in Security Log Book.	Site Supervisor Vet Staff Surveillance & Security Guard	– Issues normally related to observations / special attention to animals.	QR63-01
4	Reporting for duty/ handover.	Surveillance & Security Guard	– Sign Security Log Book in case entries have been made. – Security Officer to ensure adequacy of items as per checklist and any other items in charge. – Ensure that action specified therein will be implemented.	QR63-01 **TAB6-7**
5	During night shift conduct rounds as per defined itinerary.	Surveillance & Security Guard Security Manager	– Use the Site Security Inspection Form. – Record any unusual findings in Security Log Book/Animal Related Security Reports. – List of persons to contact in case of emergency affixed in security office. – Contact Security Manager for urgent security matters. – Animal Related Security Reports to be handed to Vet Consultant on a monthly basis.	QR63-01 QR63-02 QR63-30
6	Security Supervisor performs night checks/ patrol	Security Supervisor	– Report to Security Manager immediately in case of emergency.	QR63-01
7	Visit all sectors every morning	Security Manager	– Take note of any unusual occurrences and initiate action. – Complete the Daily Security Report and submit copy to Admin & Personnel Manager. – Unusual occurrences to be discussed in management meetings.	QR63-03

Trade Secret Do not publish

	Activities	Responsibilities	Notes	Records
8	Surveillance & Security Guard to record the registration no. of all vehicles entering/ exiting premises.	Surveillance & Security Guard	– Recorded in Vehicle-Visitor's Log Book – Follow procedures for visitors control where applicable.	QR5-01
9	Surveillance & Security Guard to ensure that all keys are properly stored in the keyboard and kept locked.	Surveillance & Security Guard/ Authorized personnel	– Personnel to sign in the key book every time a key is removed or brought back. – Security Manager to verify key book during visits at least once a week and affix signature. – **Site Security Officers should not access internal buildings, except the mess room. Internal buildings are accessed only in case of emergency and such event is logged in the Security Log Book.**	QR71-28 **QR63-01**
10	List of phone numbers to contact in case of emergency affixed at security gate.	Surveillance & Security Guard	--	--

Management of keys:

- All keys, including duplicate ones, should be labeled.
- After office hours, Site Supervisors must leave all keys at Security Gate before leaving site and the next day; take back keys from Security Gate.
- Each key must have a duplicate. Duplicate keys to be placed in a sealed envelope and stored at Security Gate.
- In case of an emergency at night, Security Staff will use keys left by Site Supervisors at Security Gate.
- Duplicate key will only be used by Security Staff in case key is not found.

Trade Secret Do not publish

Records and Specification Table

Record ref	Title
QR5-01	Vehicle/Visitor's Log Book
QR62-07	Training Record Sheet (For Security personnel)
QR63-01	Security Log Book
QR63-02	Site Security Inspection form
QR63-03	Daily Security Report
QR63-25	Roster/Checklist for Security Officers
QR63-30	Animal Related Security Reports
QR71-28	Key book
TAB6-7	**Security Checklist**

Animal Welfare issues

1. All sites fenced and secured with razor wire available to prevent any intruders.
2. Pay particular attention to hospitalized animals during rounds.
3. Report immediately any abnormality in animal behavior at night.
4. Take necessary actions (as instructed) in case of unrest/aggression in cages.
5. Assist Animal Tech in first aid procedures.
6. Report any flaw in cage that could be a hazard to animals.
7. Report presence of stray/feral animals that could harm the monkeys

Trade Secret Do not publish

Bioculture PR - Safety and security

Security and safety

Farm will be surrounded with a 7 feet fence /electronic fence with touch sensors and with security forces on site 24 hours 365 days a year.

Our animal security systems and SOP's for the prevention of animal escape, form part of our internationally accredited Quality System and are a fundamental part of our operations
We have **AAALAC accreditation and ISO certification**

Animal Security systems

Our animal security systems for the prevention of animal escape operate on a number of levels:
•Staff training and inspections
•Cage design and engineering - Hurricane proof cages.
•Provision of appropriate security equipment & systems.

Safety and Security measures

★Training of workers on security SOPs.
★Daily cage inspection and supervision.
★Site with 24 hour security and surveillance.
★Handling equipment
★Electric fencing around the farm.
★Triple door system on all cages.
★Monkey proof latches and locks on all doors.
★Hurricane Proof Cages
★Cages especially designed & engineered to be Hurricane proof.
★Double Electric Fence with motion sensors
★Motion sensors

Responsibility

The proposed investment by Bioculture in the establishment of a monkey breeding and rearing farm in Puerto Rico is being made because the demand for Mauritian origin SPF monkeys in the USA is high and is expected to grow in the coming decades.
However in order to further demonstrate our faith in this industry and its future in Puerto Rico and to allay some concerns expressed about what would happen if demand for Mauritian monkeys was to disappear, Bioculture (PR) Inc. is prepared to make a formal undertaking to guarantee to the Gov. of Puerto Rico that should Bioculture wind up its operations in Puerto Rico, it will remove all its animals from the facility at that time.

Trade Secret Do not publish

Animal Security systems

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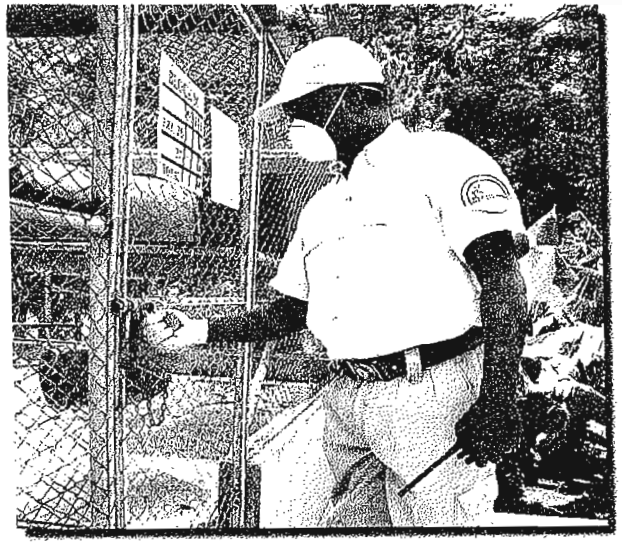
Trade Secret Do not publish

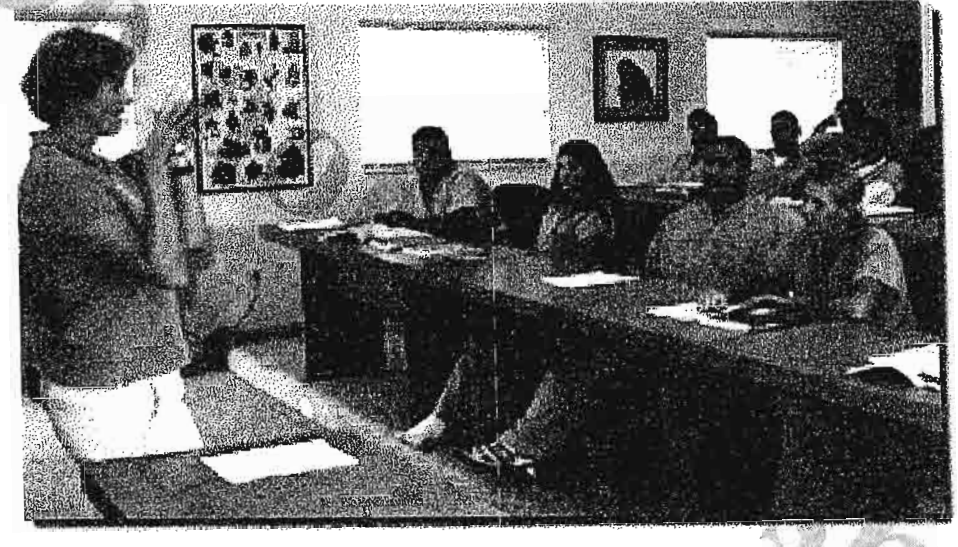
Safety and Security measures

Training of workers on security SOPs.

Daily cage inspection and supervision.

Site with 24 hour security and surveillance.





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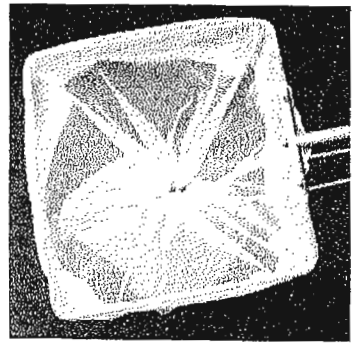
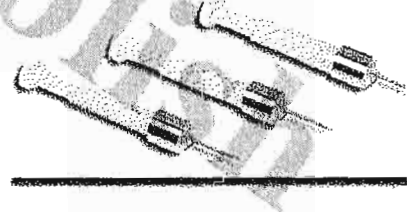
Handling equipment

Electric fencing around the farm.





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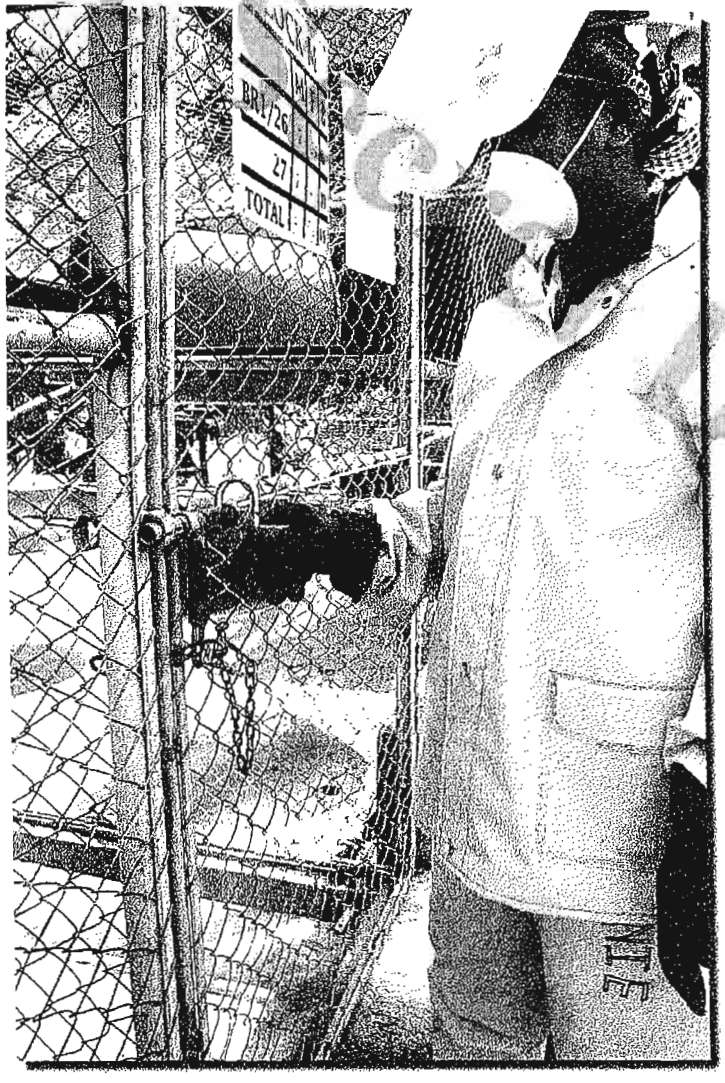
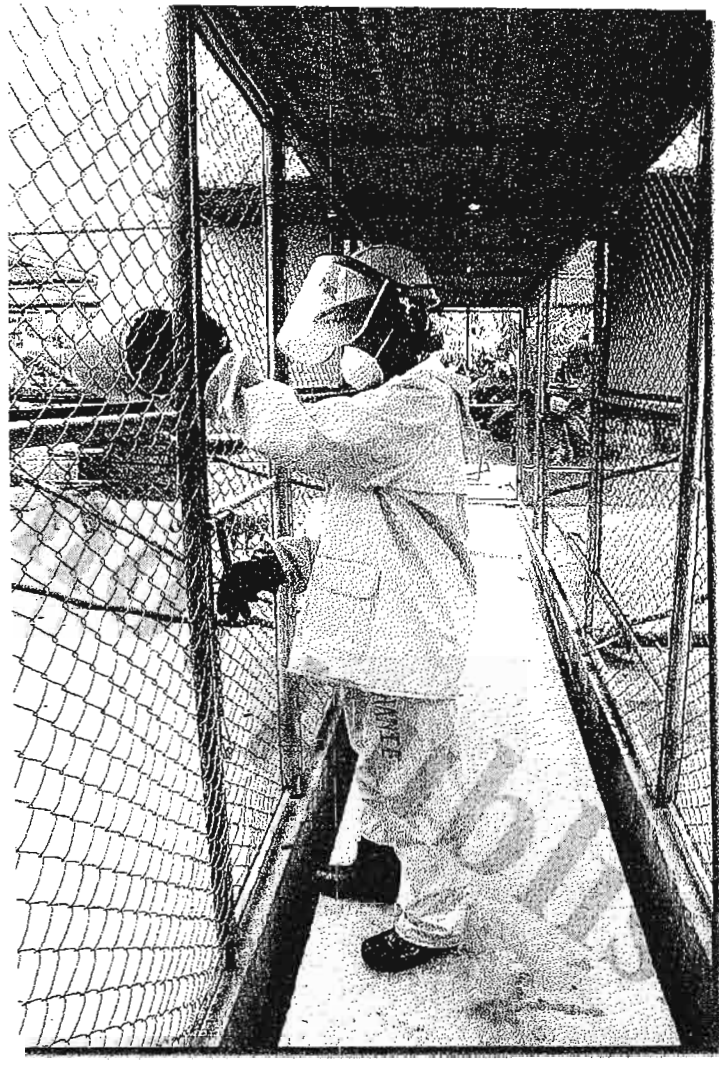
Triple door system on all cages.

Monkey proof latches and locks on all doors.

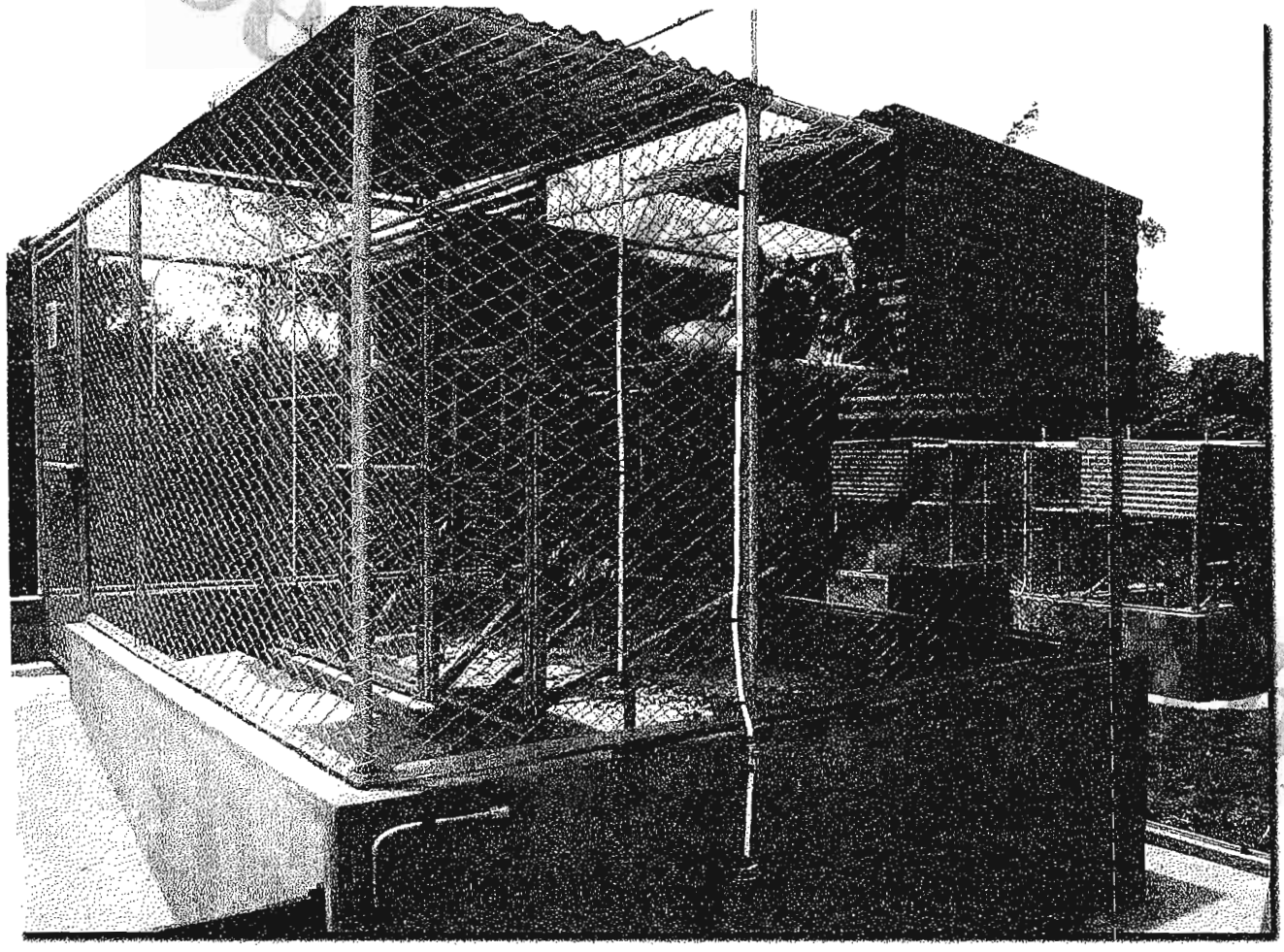




Trade Secret Protected

Hurricane Proof Cages

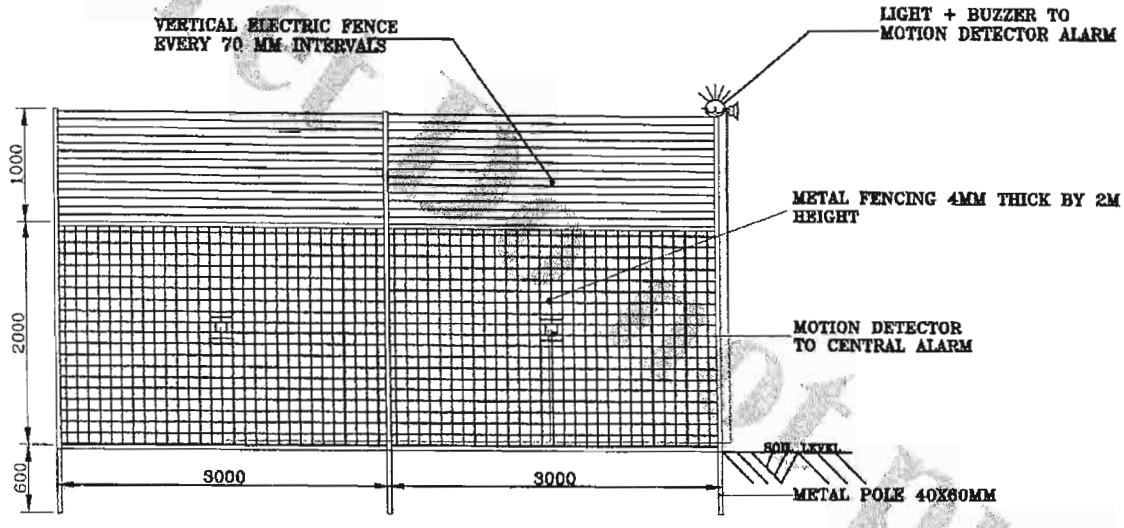
Cages especially designed & engineered to be Hurricane proof.



Trade Secret

Double Electric Fence with motion sensors

SECURITY FENCING DETAILS FOR
BIOCULTURE PUERTO RICO



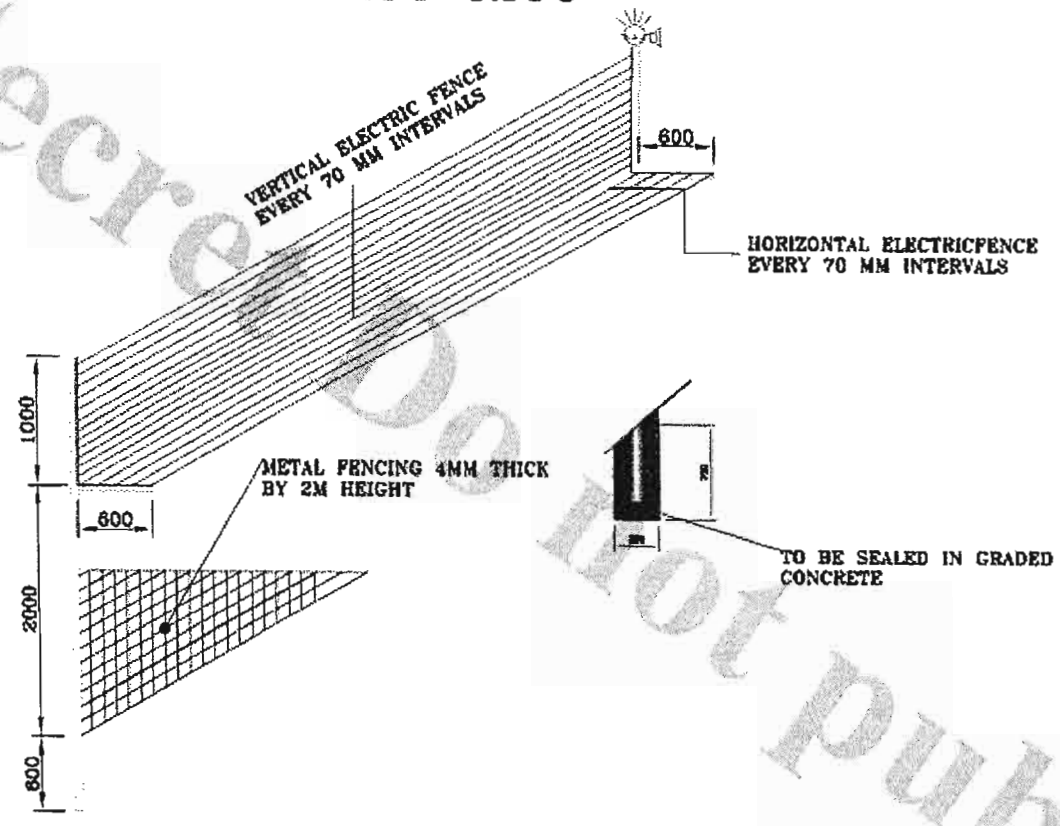
FRONT ELEVATION

NOTE:– ALL DIMENSIONS ARE IN MILLIMETRES

Trade Secret Do not publish

Double Electric Fence with motion sensors

SECURITY FENCING DETAILS FOR BIOCULTURE PUERTO RICO

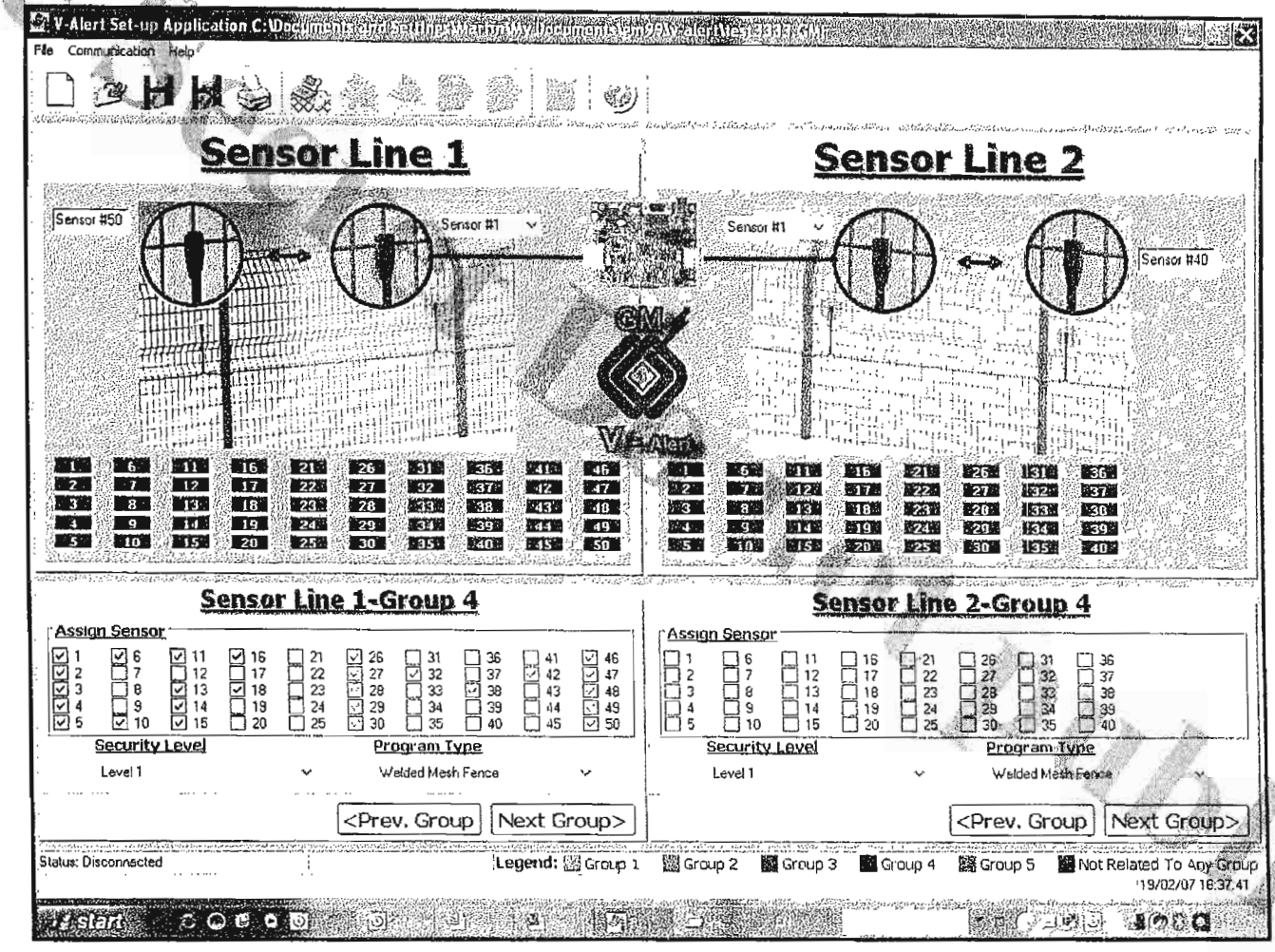


SIDE ELEVATION SHOWING HORIZONTAL & VERTICAL FENCING EVERY 70 MM INTERVALS

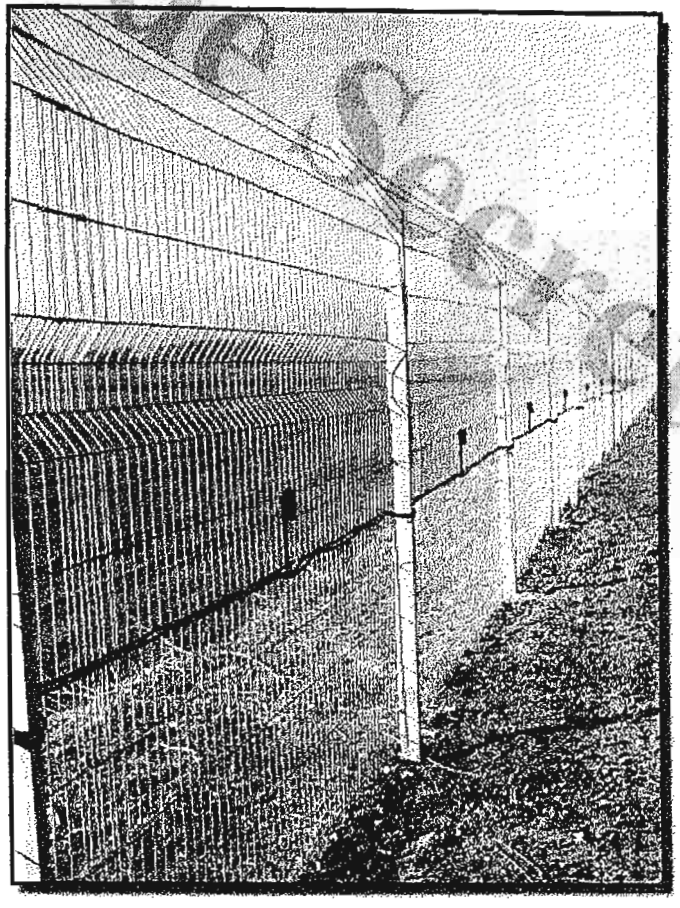
NOTE:- ALL DIMENSIONS ARE IN MILLIMETRES

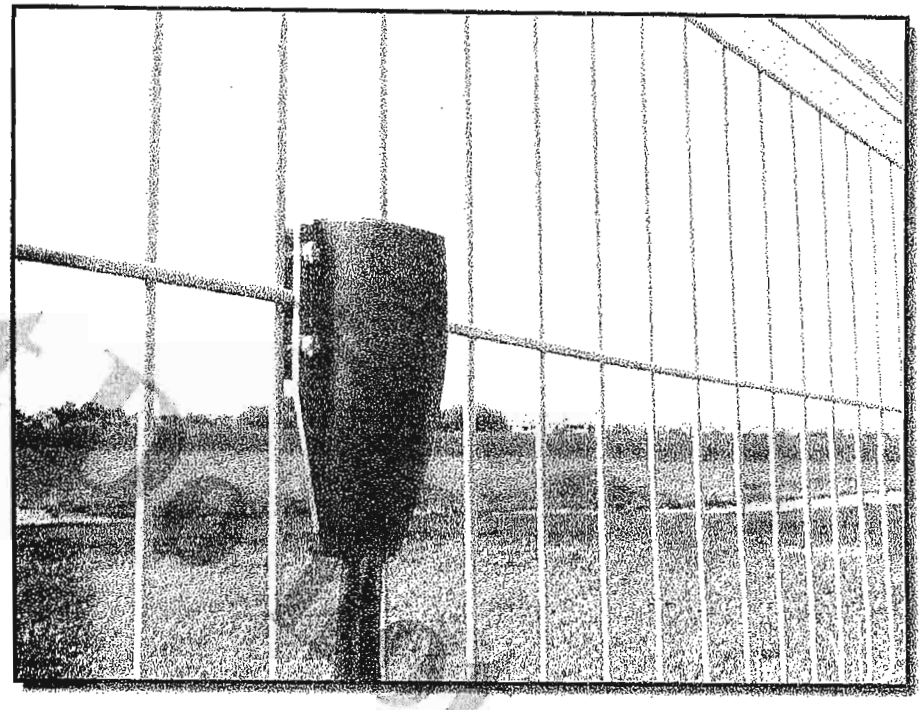
Trade Secret Do not publish

Motion sensors



Motion sensors





Trade Secret not publish

ISO 14001 Environmental friendly

10 years of experience

Certificate

This is to certify that the Environmental Management System of

B.F.C. - ISRAEL LTD

MAZOR, ISRAEL

has been audited by SII and found to comply with the Environmental Management Standard SI ISO 14001 : 2004

scope:

BREEDING OF MONKEYS.

The Certificate is granted in accordance with SII's Rules for the Certification of Environmental Management Systems (SII procedure-009). The validity of the Certificate is subject to the continuous maintenance of the System according to the above standard, and the follow-up surveillance performed by SII.

651E (12/07) RVA

Date of initial approval: 19 08 1999
Date of expiration: 11 04 2011

License No. 43191
Date of issue: 11 . 02 . 2008

THE STANDARDS INSTITUTION OF ISRAEL

Doron Tamir
Director General

CA 12
Accredited by
the RvA

Trade Secret Do not publish

Responsibility

The proposed investment by Bioculture in the establishment of a monkey breeding and rearing farm in Puerto Rico is being made because the demand for Mauritian origin SPF monkeys in the USA is high and is expected to grow in the coming decades.

However in order to further demonstrate our faith in this industry and its future in Puerto Rico and to ~~allay~~ dissipate ~~some~~ any concerns ~~expressed~~ about what would happen if demand for Mauritian monkeys was to disappear, Bioculture (PR) Inc is prepared to make a formal undertaking to guarantee to the Gov. of Puerto Rico that should Bioculture ~~wind up~~ end its operations in Puerto Rico, it will remove all its animals from the facility at that time.

Trade Secret Do not publish

Conclusion

The monkey farming project at Guayama will be carried out in an environmentally sustainable way such that there is no negative impact on the local environment.

Trade Secret/Do not publish

Bioculture Puerto Rico Inc.

Safety and security

Presentation to the special task force for infrastructure 13.6.2008

Trade Secret Do not publish

Leading in Safety & Security

Trade Secret/Do not publish

Our animal security systems and SOP's for the prevention of animal escape, form part of our internationally accredited Quality System and are a fundamental part of our operations.

We have AAALAC accreditation and ISO certification

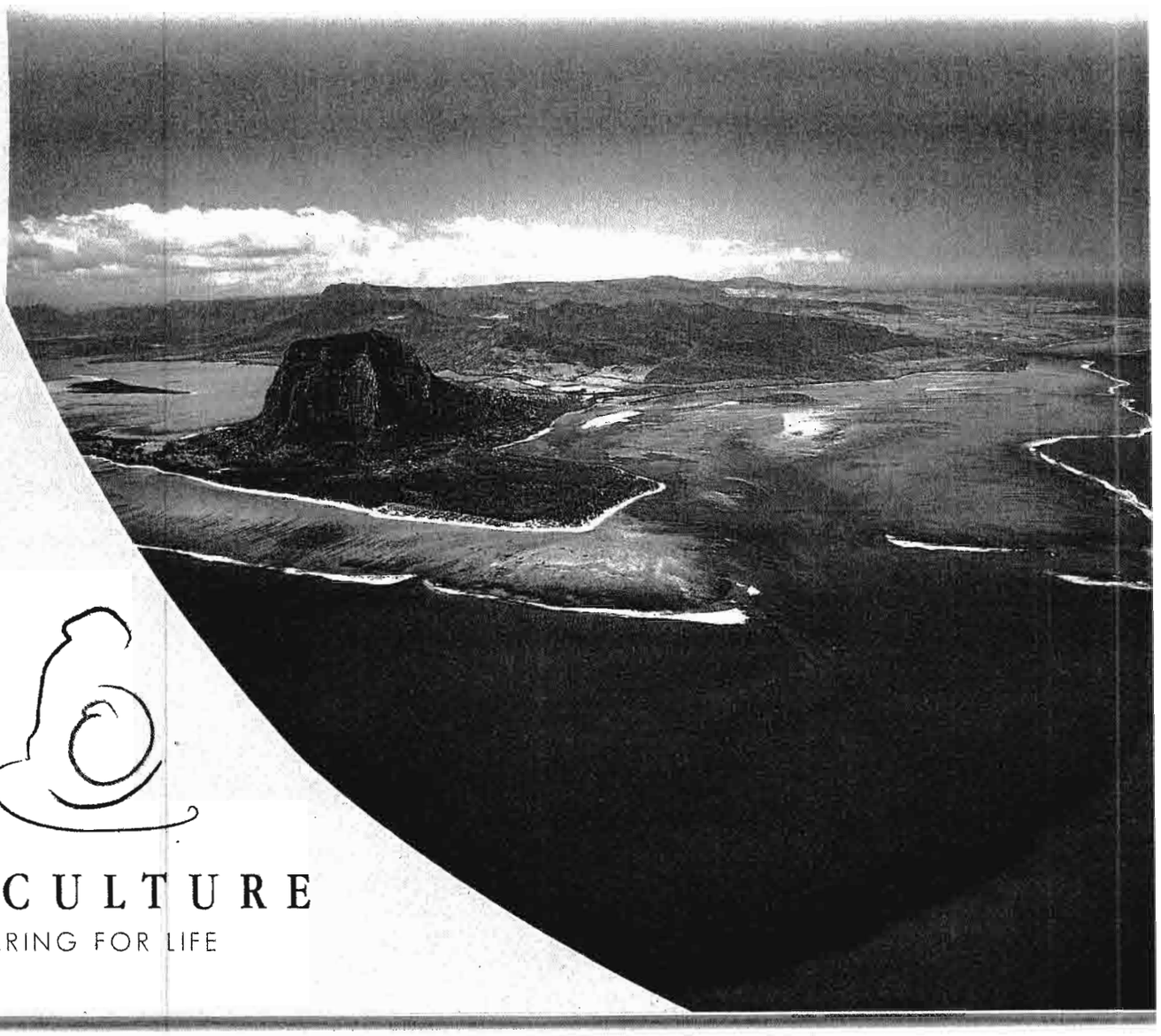
aaalac INTERNATIONAL Association for Assessment and Accreditation of Laboratory Animal Care International

ISO International Organization for Standardization

Trade Secret Do not publish

Mauritius Island

NATURALLY OCCURRING SPF CYNOS



BIOCULTURE

CARING FOR LIFE

Trochetia boutoniana
(National flower of Mauritius)

THE MAURITIUS LABEL

Biosafety

Welfare

Veterinary care

Client support

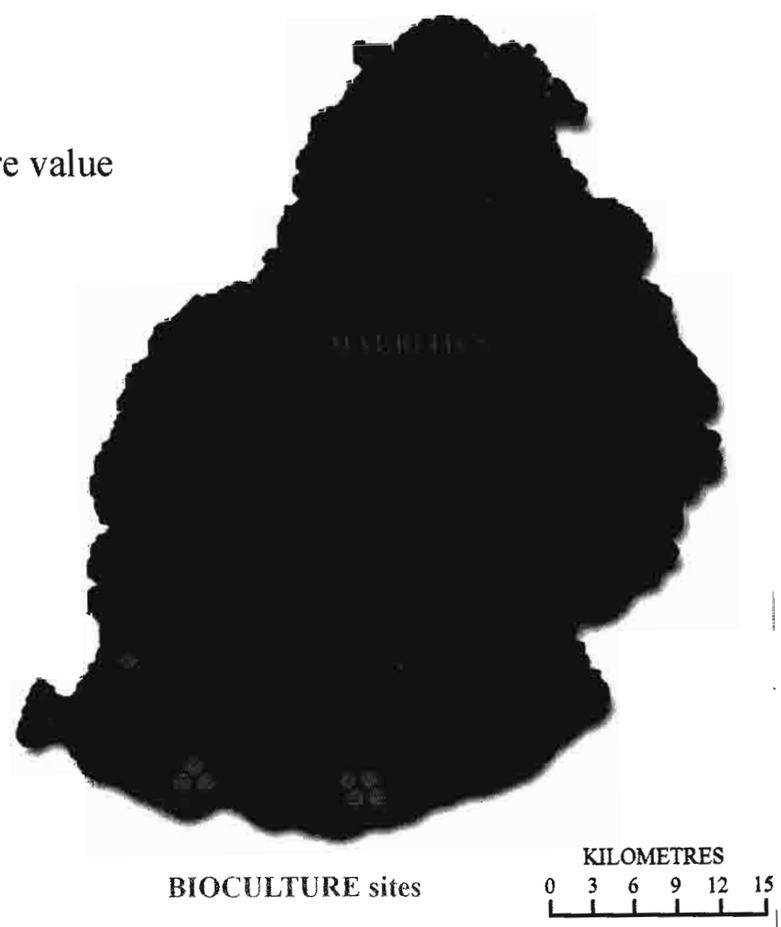
Accreditation

Corporate Social Responsibility

Bioculture (Mauritius) Ltd - BCM - Established in 1984 - More than a quarter of a century of knowledge and experience in primate breeding. Evolved from a family enterprise set up by two biologists into a leading company with the same personal touch and involvement.

BIOCULTURE LABEL REPRESENTS

- Naturally occurring SPF
  Macaca fascicularis
- Non-native introduced species
- Animal care and welfare - Our core value
- Individualised veterinary care
- Excellent health profile
- AAALAC Accreditation



BIOCULTURE sites

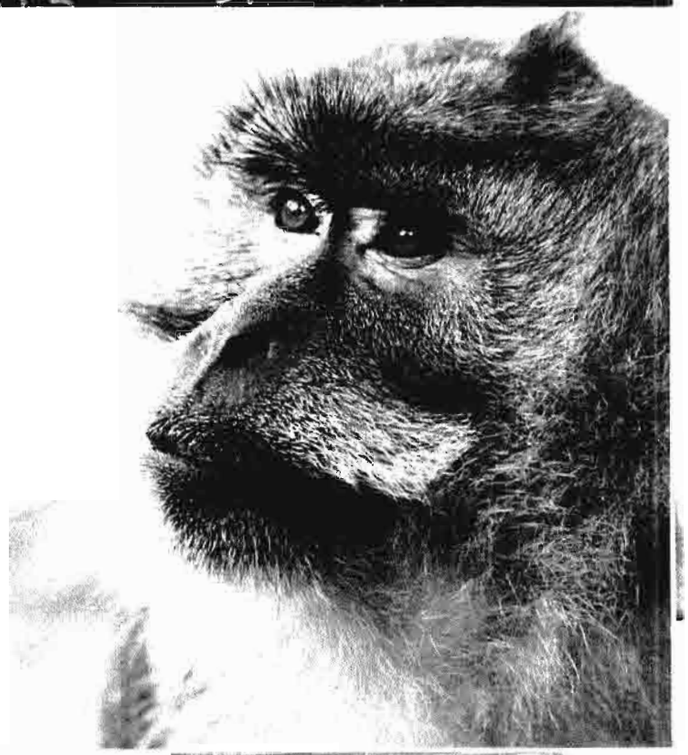
BIOSAFETY

- Naturally occurring Specific Pathogen Free monkeys

- Naturally free from:
  - HBV (Herpes B-virus)
  - SRV (Simian Retrovirus)
  - SIV (Simian Immunovirus)
  - STLV1 (Simian T-cell Leukaemia virus)

Your company is protected from spontaneous sero-conversion leading to study failure.

Your staff can feel secure in the knowledge that they face no risk from life-threatening viral exposure



"If you care about your health as a researcher using monkeys, and if you care about the health of your staff, then there is no alternative to using naturally occurring SPF monkeys.

No sero-conversion... no worries".

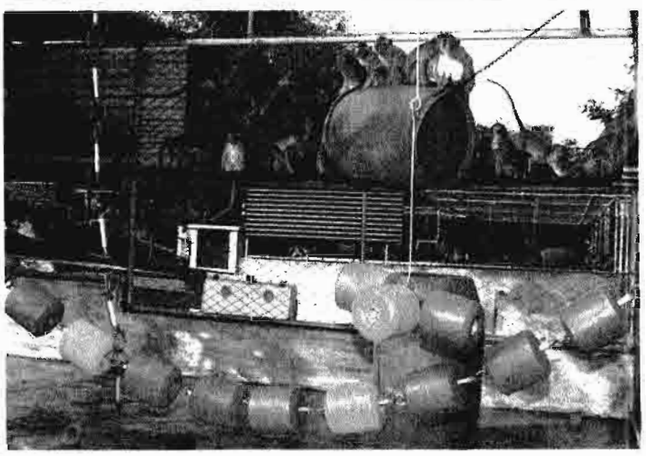
Customer feedback

WELFARE

- Housing designed to maximize appropriate enrichment devices and welfare.
- Continuous refinement of animal welfare techniques.
- Familiarisation
- Food of high quality and diversity

Your company is assured that society's demand for enhanced animal welfare is met resulting in a better study model.

Your staff can be proud that they are using animals from a company whose core value is Animal Welfare.



"If you as an end user care about the welfare of your monkeys, then this care should not start at your facility's door but rather should start at the facility where the monkey is born".

Customer feedback

INDIVIDUALIZED VETERINARY CARE

- Evidence Based Vet Medicine (EBVM)
- Best current primate medicine techniques
- Sense of responsibility for the animal
- 7 full-time veterinarians
- More than 250 animal care staff
- 2 full-time primate ethologists

"I was greatly impressed by everything that I witnessed at BCM. There is a very strong culture of care of the animals both in their physical and psychological health. Notable was the degree to which the BCM staff are involved in the process of refinement of systems and welfare provision.Innovative approaches to the development of caging and environmental enrichment are evident as is the high level of training, competence and engagement of the staff."

Dr Paul E. Honess
Primate Welfare Specialist
Oxford University, UK

CLIENT SUPPORT

- Always available for your animal husbandry and veterinary inquiries
- Animal traceability - Integrated Animal Management System (IAMS)
- Veterinary support

ACCREDITATION

- **AAALAC** accreditation - since 2006 *(last renewal in 2009)*
- **ISO** 9001 certification - since 1998 *(last update to ISO 9001:2008 in 2009)*
- **UK** Home Office approval - since 1995 *(last renewal in 2009)*

CORPORATE SOCIAL RESPONSIBILITY

- Conservation

Bioculture (and hence our clients) support conservation through directly managing conservation projects in:

MAURITIUS
Native forest restoration

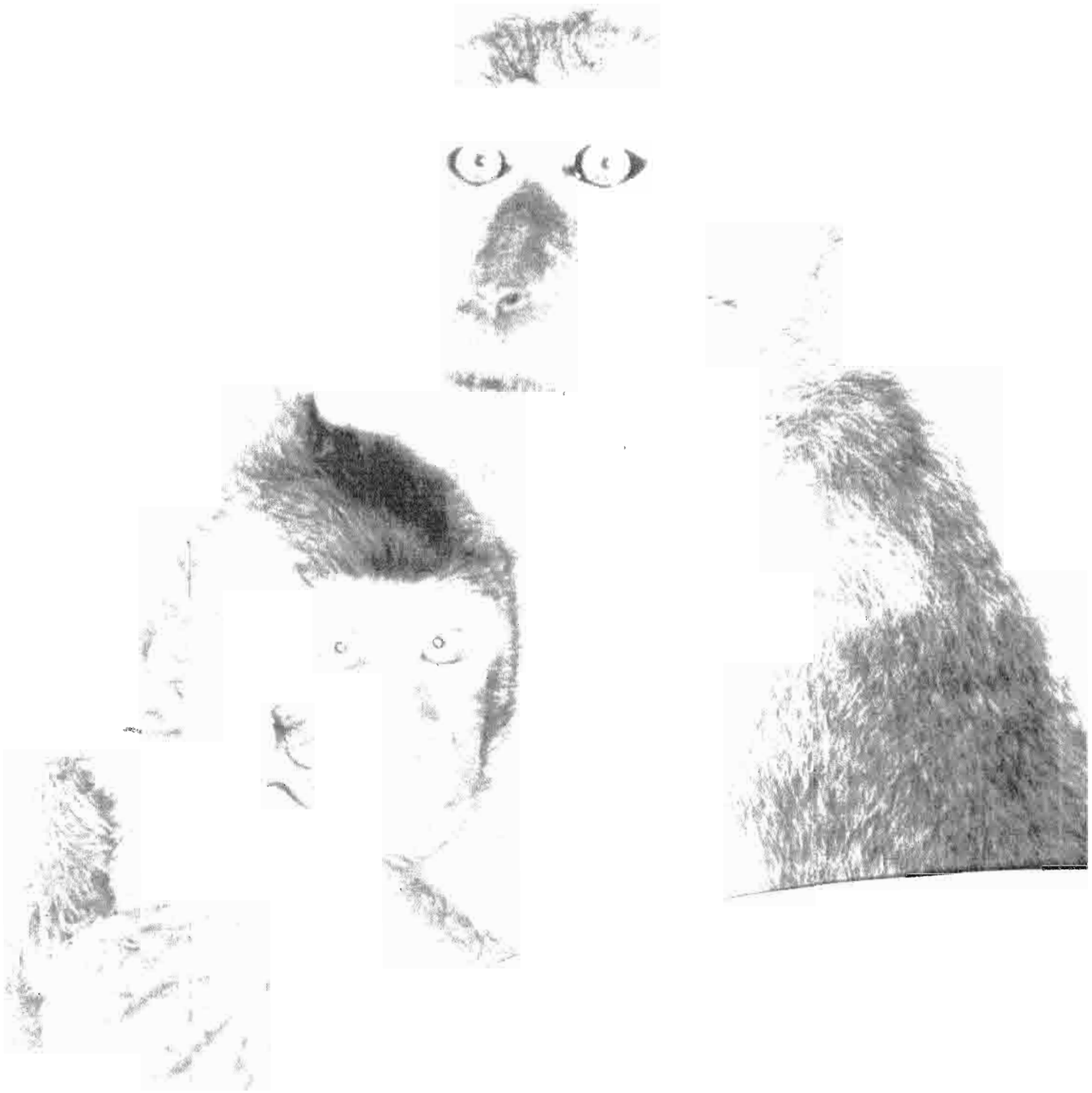
RODRIGUES
Ecosystem reconstruction-rewilding

MADAGASCAR
Protection of lemur-rich tropical forests

- Community level

- Staff welfare
- Support to local schools

- Support to and partnership with local NGO's
- Sports associations



BIOCULTURE

CARING FOR LIFE

BIOCULTURE

CARING FOR LIFE

For all information contact

BIOCULTURE (Mauritius) Ltd
Senneville, Rivière des Anguilles
MAURITIUS
Tel (230) 626 1004 / 626 2843
Fax (230) 626 2844
Email: bcm-rda@intnet.mu

Charles River - BRF INC
305 Almeda Genoa Rd
Houston Texas 77047
USA
Tel 713 433 5846
Fax 713 433 6971
Website: www.criver.com

European Transport Services
P.O. Box 64, Harrow, Middlesex
HA1 1WN - UK
Tel (44) 1903 815967
Fax (44) 1903 815299
Email: SARAHETS@aol.com

aaalac INTERNATIONAL

MSB REGISTERED FIRM

MGMT. SYS. RvA C 199

EBI COST ANALYSIS MATRIX 2009

This cost analysis matrix uses actual 2007 cost and animal data from a municipal animal control agency in North Carolina.

- *Note: no actual data for fractious / feral or age breakdown – those data are estimates.*
- Number of dogs euthanized: 2430 (1701 over 4 months – 70% and 729 less than 4 months – 30%) (972 fractious – 40%
- Number of cats euthanized: 2997 (1798 over 4 months – 60% and 1199 less than 4 months – 40%) (1499 feral – 50%
- Total dogs and cats euthanized: 5427
- Average number of animals euthanized per day: 15 (5427 / 365 days)

Assumptions:

a. fractious / feral animals (2471 40% dogs and 50% cats) are given pre-euthanasia anesthesia (ketamine/xylazine)
b. friendly cats (1498) are given IP injection of sodium pentobarbital with no pre-euthanasia anesthesia
c. friendly dogs (1215) are given IV injection of sodium pentobarbital with no pre-euthanasia anesthesia

	EBI EQUIPMENT COST	
1	Equipment cost: $670	Floor safe ($350) + table ($100) + electric clippers ($120) + restraint gate ($100)
2	Total equipment cost per animal: $0.123	$670 / (animals euthanized per year) 5427 = $0.123
	EBI LABOR COST	
3	A. # of employees required for IV: 2 B. # of employees required for IP: 1 C. # of employees required for IC: 1	NOTE: 1 employee can safely and effectively administer IP on conscious friendly cats and IC on unconscious or anesthetized animals; 2 employees are required for IV
4	A. # of IV injections (dog): 1215 B. # of IP injections (cat + puppy): 1741 C. # of IC injections (dog + cat): 2471	A. 1215 = 50% of 2430 dogs and 0 cats B. 1741 = 243 puppies (10% of dogs) + 1498 cats (50% of cats) C. 2471 = 972 dogs + 1499 cats

5	Average time to euthanize: 5 minutes average	Transport to euthanasia room + preparation (including IM injection of pre-euthanasia anesthesia as needed) + scanning for microchip + injection + verification of death + removal of carcass + record keeping. *NOTE: average time for IP (friendly cats, puppies and kittens) is typically less than 5 minutes; average time for IV is sometimes longer than 5 minutes.* *Considering an average of 15 animals per day, a typical scenario will involve multiple activities happening concurrently such as animals going under pre-euthanasia anesthesia in a quiet area while another animal is being injected.*
6	Total time to euthanize: 75 minutes	# of animals per day (15) × average time to euthanize (5 minutes)
7	Hourly labor cost per worker: $13.57	Hourly wage: $10.44 + 30% fringe: $3.13 = $13.57
8	5-minute labor cost per worker: $1.13	Hourly labor cost: $13.57 / 60 minutes = $0.226 X 5 minutes = $1.13
9	IV labor cost: $2.26	5-minute labor cost: $1.13 X 2 employees = $2.26
10	IP and IC labor cost: $1.13	5-minute labor cost: $1.13 X 1 employee = $1.13
11	Total annual IV labor cost: $2746	IV labor cost: $2.26 X 1215 = $2746
12	Total annual IP & IC labor cost: $4759	IP and IC labor cost: $1.13 X 1741 (IP) + 2471 (IC) = 4212 X $1.13 = $4759
13	Total annual labor cost for IV, IC & IP: $7505	Labor cost IP & IC + IV= $2746 + $4759 = $7505
14	Total labor cost per animal: $1.38	Total annual labor cost / # of animals euthanized: $7504 / 5427 animals = $1.38
	EBI SUPPLY COST	
15	Sodium pentobarbital cost per 250 ml bottle: $46.00	
16	Cost per ml (cc): $0.184	Cost of bottle ($46.00) ÷ 250 ml
17	Average IV dose (dog): 5 ml	50-pound dog average
18	Sodium pentobarbital cost per IV dose:	Cost per ml $0.184 X average dose: 5 ml

36	Total annual needles: 7898	1 per euthanasia: 5427 + 1 per pre-euthanasia anesthesia: 2471 = 7898
37	Annual needle cost: $78.98	7898 X $0.01 = $78.98
38	Average needle cost per animal: $0.014	$78.98 / 5427 (total animals euthanized) = $0.014
39	Pre-euthanasia anesthesia cost per dog: $1.00	5:1 ratio ketamine/xylazine per 50 pound dog = $0.40 ml X 2.5 ml = $1.00
40	Annual pre-euthanasia anesthesia cost for dogs (fractious): $972	972 fractious dogs X $1.00 per dog (average weight = 50 pounds, 2.5 ml @ $0.40 per ml)
41	Pre-euthanasia anesthesia cost per cat: $0.20	5:1 ratio ketamine/xylazine per 10 pound cat = $0.40 ml X 0.5 ml = $0.20
42	Annual pre-euthanasia anesthesia cost for cats (feral): $299	1499 feral cats X $0.20 per cat (average weight = 10 pounds, 0.5 ml @ $0.40 per ml)
43	Annual total cost of pre-euthanasia anesthesia: $1271	Annual cost dogs ($972) + cats ($299) = $1271
44	Average pre-euthanasia cost per animal: $0.23	$1271 / 5427 (total animals euthanized) = $0.23
45	Total supply cost per animal: $0.787	Sodium pentobarbital per animal: $0.54 + syringe: $0.003 + needle: $0.014 + pre-euthanasia anesthesia: $0.23 = $0.787
	EBI TOTAL COST	
46	Total EBI cost per animal: $2.29	Equipment cost per animal: $0.123 + labor cost per animal: $1.38 + supply cost per animal: $0.787 = $2.29

CARBON MONOXIDE COST ANALYSIS MATRIX 2009

This cost analysis matrix uses actual 2007 cost and animal data from a municipal animal control agency in North Carolina. Although the actual agency reported best practices use of euthanasia by injection (EBI) for animals younger than 4 months of age (25% of total animals euthanized), this cost analysis assumes 100% chamber use in order to more accurately reflect the industry as whole and to provide a more useful cost comparison to EBI. Although frequent, 100% chamber use is NOT acceptable practice.

Industry standards demand the use of EBI for animals less than 4 months of age and for animals suffering from respiratory conditions, generally poor health or severe injury.

Industry standards recommend administering 0.5 mg / pound acepromazine maleate (tranquilizer) to adult dogs 20 minutes prior to placing them in the chamber to reduce vocalization/agitation. The dose is typically 25 mg for an average 50-pound dog.

- Total number of dogs euthanized: 2430
- Total number of cats euthanized: 2997
- Total number of dogs and cats euthanized: 5427
- Average number of dogs and cats euthanized per day: 15 (365 days)
- Number of employees (operators): 2 (alternate costs for 1 operator are included)
- For purposes of this cost analysis matrix, an average dog is 50 pounds.

CARBON MONOXIDE EQUIPMENT COST		
1	CO chamber: $10,500	Cutting Edge Fabrication, estimated usable life: 10 years
2	CO sensor: $300	Unknown brand, estimated usable life: 10 years
3	Chamber lifetime routine maintenance: $5,000	Estimated cost to maintain seals, gaskets and hardware over 10 years = $500 per year

4	Annual depreciation: $1,080	Chamber: $10,500 + sensor: $300 = $10,800 / 10 = $1,080
5	Annual depreciation + maintenance: $1,580	Equipment depreciation: $1,080 + maintenance: $500 = $1,580
6	CO equipment cost per animal: $0.29	$1,580 (annual depreciation/maintenance) / 5427 (total animals euthanized per year) = $0.29
	TRANQUILIZER COST	
7	Acepromazine tranquilizer per average dog: $1.00	Average dog: 50 pounds: 2.5 ml at $0.40 per ml = $1.00
8	Syringe / needle cost per dog: $0.013	Syringe (reused) cost: $0.003 + needle cost: $0.01 = $0.013
9	Tranquilizer cost per 50 pound dog: $1.013	$1.00 + $0.013 = $1.013
10	Number of dogs tranquilized (estimate): 1701	1701: number of estimated adult dogs euthanized by CO chamber (70% of total dogs)
11	Total annual cost of tranquilizer: $1,723.11	1701 dogs X cost per dog: $1.013 = $1,723.11
12	Tranquilizer cost per animal: $0.32	$1,723.11 / 5427 (total animals euthanized) = $0.317
	CO LABOR COST	
13	Number of employees to euthanize: 2	*Note: actual municipal animal control agency uses 2 operators (employees) to euthanize by carbon monoxide*
14	Load time: 10 minutes	Includes transport to chamber
15	Run time: 35 minutes	Employees do paperwork and watch chamber
16	Unload time: 5 minutes	Remove carcasses, clean chamber for next cycle
17	Total cycle time: 50 min	Load: 10 + run: 35 + unload: 5 = 50 minutes
18	Number of dogs or cats per cycle: 6	Dogs and cats are not mixed in a cycle

19	Number of cycles per day: 2.5	Average number of animals euthanized per day: 15 / number of animals per cycle: 6 = 2.5
20	Total time per day: 125 minutes	Load + run + unload (cycle time) = 50 minutes X 2.5 cycles = 125 minutes (2.08 hours)
21	Labor cost per minute per person: $0.226	Hourly wage: $10.44 + 30% fringe: $3.13 = $13.57 / 60 minutes = $0.226
22	Total labor cost per minute (2 operators): $0.452	$0.226 X 2 operators = $0.452
23	Total labor cost per cycle: $22.60	$0.452 X 50 minutes = $22.60
24	Labor cost per day: $56.25	$22.60 X 2.5 cycles = $56.50
25	Labor cost per animal: $3.77	$56.50 / 15 animals = $3.766
26	Alternate: labor cost per animal with 1 operator rather than 2: $1.88	$0.226 X 50 minutes = $11.30 X 2.5 cycles = $28.25 / 15 animals = $1.88 (*note: will likely take longer to load and unload but is not reflected in this matrix)*
	CO SUPPLY COST	
27	CO gas cylinder: $219.00	Includes cylinder rental plus gas
28	Annual number of cylinders: 15	Total number of cylinders used in 2007
29	Total gas cost:	$219 per cylinder X 15 cylinders = $3285
30	Gas cost per day:	Annual cost / 365 days = $9.00
31	Supply cost per animal: $0.60	$9.00 / 15 animals = $0.60
	CARBON MONOXIDE TOTAL COST	

32	CO cost per animal: $4.98	Equipment cost per animal: $0.29 + tranquilizer cost: $0.32 + labor cost per animal: $3.77 + supply cost per animal: $0.60 = $4.98
33	Alternate CO cost (1 operator): $3.09	Equipment cost per animal: $0.29 + tranquilizer cost: $0.32 + labor cost per animal: $1.88 + supply cost per animal: $0.60 = $3.09

CARBON MONOXIDE Vs EBI

34	**EBI cost per animal**	**$2.29**
35	**CO cost per animal (2 operators)**	**$4.98**
36	**CO cost per animal (2 operators) *without tranquilizer***	**$4.66**
36	**CO cost per animal (1 operator)**	**$3.09**
37	**CO cost per animal (1 operator) *without tranquilizer***	**$2.77**

Joshua M. Galarza

From: Ricardo Lopez Ortiz
Sent: Thursday, July 22, 2010 10:58 AM
To: Daniel Galán Kercadó
Cc: Joshua M. Galarza; Miguel A. Garcia Bermudez
Subject: RE: Preguntas sobre costos y riesgos a los RN, asociados al caso de Bioculture Mauritius Group en Guayama.

Estimado Secretario,

A mi mejor entender, debajo de cada una de sus preguntas, le presento alternativas y estimados conservadores.

1- ¿Cuál sería el costo de captura en el caso hipotético de escape de macacos cangrejeros (Macaca fascicularis) de un facilidad como la que proyecta construir y operar Bioculture Mauritius Group (en adelante BCM) en Guayama?

El DRNA tiene el personal capacitado para cazar primates efectivamente (con rifles) pero, actualmente, no cuenta con las herramientas (ej. rifles cal .22, .17. etc., armas costomizadas, miras telescópicas con buena óptica (ej. Leupold), silenciadores, binóculos infrarrojos, etc.). Para esto el DRNA cuenta con la contratación de un cazador/biólogo de WS/USDA. El DRNA también cuenta con el equipo para la captura de animales vivos en trampas.

El costo de captura va a depender mucho del tiempo que tome la captura, que a su vez se relaciona con el entorno del fugitivo y su destino (vivo vs. muerto). En el caso de la localidad en Guayama, el entorno es de bosque seco subtropical montañoso (más complejo que las zonas agrícolas donde el DRNA captura monos patas (E. patas) y parecido a los bosques de Sierra Bermeja donde se capturan Rhesus (M. mulata). En este tipo de entorno el animal navegará mayormente por cruces de tributarios (caminos, quebradas, etc). Usará esos tributarios como vías y referencias para acezar a recursos necesarios limitados (ej. comida, agua, lugares de observación, dormideros, etc.). Si la captura se desea viva, el costo aumentará según sea la habilidad del fugitivo en evitar las trampas (animales que han estado enjaulados se vuelven reacios a las jaulas/trampas y gente). Si la captura permite la eutanasia, esta dependerá mayormente de la habilidad del cazador y reduce el tiempo de captura.

La contratación de un Biólogo adiestrado para esto puede variar significativamente. Un Biólogo de WS/USDA le costaría al DRNA ca. $60/hora. Uno privado entre $40 y $60 la hora. Un equipo de un Biólogo y un Vigilante del DRNA, ambos adiestrados en la captura de primates, le costaría al DRNA entre $42 y $46/hora.

En equipo y materiales el costo sería ca. $35,000 (Rifles de tres calibres diferentes preparados para este tipo de cacería, trampas, pistola, equipo de suministrar drogas, equipo de protección personal, cámaras, etc.). Estoy asumiendo que materiales como frutas y los servicios veterinarios y drogas serían suministrados por BCM.

En conclusión, es muy difícil predecir el costo de atrapar un primate que ha escapado de una facilidad donde estuvo retenido en jaulas. Hay casos donde la recaptura de un sólo rhesus ha tomado más de un año (http://www.cbsnews.com/stories/2010/03/04/national/main6266029.shtml). Un caso similar le costaría al DRNA entre $116,000 y $150,000 sin incluir gastos veterinarios (i.e. drogas, asistentes, etc.), frutas y vehículo 4x4 (i.e. combustible, mantenimiento, etc.). Otro ejemplo fue el escape de 15 monos patas (primates mucho menos inteligentes, evasivos y agresivos que los macacos) en abril del 2008, donde las autoridades capturaron 5 de los 15 dos meses después del escape. Para octubre de 2008 todavía quedaban 4 adultos y un juvenil aun sin capturar. Tomó 8 meses capturarlos/cazarlos a todos. Más incidentes en EE.UU. los puede conseguir en http://www.circuses.com/pdfs/primate_incident_list-us.pdf.

2- ¿Cuál sería el costo de disposición de macacos cangrejeros en el caso hipotético de quiebra de un facilidad como la que proyecta construir y operar BCM en Guayama?

El costo dependerá del destino del animal. Si se pretende mantener vivo hasta su exportación los costos y riesgos serían más elevados que si se disponen por eutanasia (el mantenimiento del animal vivo es costoso y arriesgado). Si la eutanasia es con el uso de drogas el costo y riesgos sería mayor que si se usan municiones calibre .22.

Lo más económico sería la disposición que permite la eutanasia con calibre .22, el manejo seguro de los bio-peligros y transportación hasta el vertedero de Peñuelas (Waste Management; WM). Para esto WM cobra cerca de $55/tonelada más los gastos de una nueva trinchera (~$200) de ser necesario. En promedio, un Macaco cangrejero pesa aproximadamente 15 libras. O sea, la disposición de un sólo animal puede costarle al DRNA entre $350 y $500 dólares sin contar gastos de gasolina, vehículo, rifle/pistola, ni la trinchera. El costo por animal disminuye según aumenta la

cantidad de animales. La eutanasia a través de cal. 22 y disposición en el vertedero de Peñuelas de 1000 macacos cangrejeros en Guayama debe costarle al DRNA entre $7000 y $9500 sin contar sin contar gastos de gasolina, vehículo, rifle/pistola, municiones, ni trincheras.

El usar drogas para la eutanasia incluiría el costo de un veterinario y su equipo. Usando drogas aumentan los riesgos y el tiempo requerido para disponer de los cadáveres. Esto puede ser más de 5 veces el costo anterior estimado.

El costo de mantener los animales vivos para su exportación conlleva facilidades, equipo y personal parecido al de un zoológico. Un mejor estimado lo pudiera obtener a través del personal del Zoológico Juan A Rivero en Mayagüez.

3- Relacionado al mismo caso; además de los riesgos asociados al potencial de escape de macacos cangrejeros ¿Qué otros asuntos deben ser considerados como un riesgo a los Recursos Naturales?

Además de los riesgos planteados en el documento oficial titulado "Comentarios Técnicos a la Evaluación Ambiental Sometida por Bioculture Mauritius Group" por el Dr. Cruz Burgos y este servidor, y enviado en noviembre de 2008 a la oficina del Secretario del DRNA, no tengo evidencia potencial o histórica de nuevas amenazas. Sin embargo vale la pena recalcar que se desconoce los efectos que tenga la hibridación de Macacos cangrejeros con Rhesus en la vida silvestre. Existen varios ejemplos donde los híbridos resultan ser más peligrosos que los organismos puros. De ser así, el potencial de amenaza a la salud pública, la agricultura y la vida silvestre serían mayores que la de las especies puras.

Cordialmente,

Ricardo López Ortiz, MS, PhD,
Coordinador del Proyecto para el Control de Primates, División de Recursos Terrestres, DRNA PR, Teléfono oficina # 787-833-2025, móvil # 1-787-502-1535

-----Original Message-----
From: Ricardo Lopez Ortiz
Sent: Wed 7/21/2010 8:47
To: Daniel Galán Kercadó
Cc: Joshua M. Galarza; Miguel A. Garcia Bermudez
Subject: Preguntas sobre costos y riesgos a los RN, asociados al caso de Bioculture Mauritius Group en Guayama.

Estimado Secretario,

Durante la tarde de ayer, como es usual durante los martes, estaba trabajando en el manglar del Bosque Estatal de Boquerón cuando recibí su llamada. Esas tareas en el manglar continúan durante la mañana de hoy. Simultáneamente, el resto del personal estará verificando capturas de primates en tres fincas (2 en CR y una en Sabana Grande). Ellos se comunican conmigo constantemente. De no tener captura de primates hoy, debo estar en la oficina temprano en la tarde para poder contestar sus preguntas y enviárselas prontamente. De no ser así, el jueves en la mañana debo poder enviar las contestaciones.

Básicamente las preguntas fueron las siguientes:

1- ¿Cuál sería el costo de captura en el caso hipotético de escape de macacos cangrejeros (Macaca fascicularis) de un facilidad como la que proyecta construir y operar Bioculture Mauritius Group (en adelante BCM) en Guayama?

2- ¿Cuál sería el costo de disposición de macacos cangrejeros en el caso hipotético de quiebra de un facilidad como la que proyecta construir y operar BCM en Guayama?

3- Relacionado al mismo caso; además de los riesgos asociados al potencial de escape de macacos cangrejeros ¿Qué otros asuntos deben ser considerados como un riesgo a los Recursos Naturales?

Le agradeceré que corrija cualquier error de interpretación que entienda pertinente y/o que añada cualquier otra pregunta sobre el caso.
Los costos relacionados a tareas veterinarias los puedo estimar con cierta incertidumbre la cual sería mucho menor si le consulto al Veterinario del DA asociado a nuestro proyecto. Voy a proceder con los estimados míos, si prefiere los del veterinario me deja saber para intentar obtenerlos.

Cordialmente,

Ricardo López Ortiz, MS, PhD,

Coordinador del Proyecto para el Control de Primates, División de Recursos Terrestres, DRNA PR, Teléfono oficina # 787-833-2025, móvil # 1-787-502-1535

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DRNA
JUL 16 2010
OFICINA DE SECRETARIA

16 de julio de 2010

Hon. Daniel J. Galán Kercadó
Secretario
Departamento de Recursos Naturales y Ambientales
P. O. Box 366147
San Juan, Puerto Rico 00936

Re: Enmienda al Permiso de Importación de Animales Núm. 2010-IC-O-VS-PVS15-SJ-00416-0502-2010.

Estimado Secretario Galán:

El pasado 25 de mayo, el Departamento de Recursos Naturales y Ambientales (en adelante "DRNA") expidió el permiso de referencia. Luego de revisar el mismo proponemos las siguientes enmiendas al permiso para su consideración. Las enmiendas aquí presentadas tienen el propósito de aclarar algunas condiciones y dar cumplimiento a las mismas balanceando la viabilidad de las operaciones de la empresa con el deber del DRNA de velar por el cumplimiento de la política pública del Estado en materia de conservación de vida silvestre.

Enmiendas al Permiso *Número 2010-IC-O-VS-PVS15-SJ-00416-0502-2010*[1]

Previo a entrar en las condiciones del permiso señalamos que en el epígrafe del Permiso aparece el término "Expira" pero consigna la fecha de emisión. Suponemos que es un error clerical y que debe ser la fecha de emisión. Por lo tanto, se debe cambiar para que lea "Fecha de expedición: 26 de mayo de 2010". De otra parte, para que no haya dudas ni controversias sobre el tipo de permiso, entendiéndose que es un permiso de importación y exportación para fines científicos, en el epígrafe en la parte de "Tipo de Permiso" debe decir: "Importación y Exportación para Fines Científicos".

Ahora bien, atendiendo específicamente las condiciones del permiso, solicitamos las siguientes enmiendas:

Condición 1.5. - La redacción se presta a confusión ya que e límite de 4,500 individuos durante la vigencia del permiso es aplicable a la importación, no a la exportación. Para que esté claro, se propone la siguiente enmienda, que no altera el propósito de la condición:

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[1] Se utilizara el mismo sistema de enumeración del permiso actual para facilitar la identificación de las condiciones a enmendarse.

> Se autoriza a Bioculture PR, Inc. a importar y exportar para fines científicos, primates de la especie *Macaca fascicularis*. Entendiéndose que el número de animales a importar no excederá la capacidad autorizada por el Departamento de Agricultura de los Estados Unidos (USDA) de jaulas para mantener los animales; y la importación de animales para procrear no será más de cuatro mil quinientos (4,500) individuos durante el término de vigencia de este Permiso, según se desglosa a continuación:...

Condición 1.7.1. - Recomendamos la siguiente redacción de este inciso para propósitos de claridad sin que se afecte el resultado porque para todos los efectos, los autorizados por ley se refiere a entidades académicas de educación universitaria dedicadas a la investigación científicas en Puerto Rico:

> Será ilegal vender, ceder o transferir los animales en cuestión a otra persona o entidad, dentro del territorio de Puerto Rico, excepto a las entidades autorizadas por ley dedicadas a investigación científica en Puerto Rico. De Bioculture PR, Inc. realizar cualquier venta, cesión o transferencia a cualquiera de éstas, deberá notificarlo al DRNA dentro de un término de treinta (30) días, a partir de la fecha en que se realice la transacción. La notificación deberá incluir el número de primates que hayan sido vendidos, cedidos o transferidos.

Condición 1.7.4. - De la misma no surge en que momento se debe entregar el certificado veterinario. Sugerimos que el certificado médico deberá conservarse en las facilidades de Bioculture y estar disponibles para producirse en casos de inspecciones o por solicitud oportuna del DRNA.

Condición 1.7.8 - La descripción de las medidas de seguridad se presta para confusión ya que el sistema de verjas, según el plano aprobado por ARPe incluye una verja electrificada con detectores de movimiento. Se debe mencionar también el sistema de triple seguro en las jaulas. Sugerimos el siguiente lenguaje:

> La instalación contará con máxima seguridad. Lo anterior incluye, pero no se limita, a lo siguiente: verja alrededor del perímetro de las jaulas que deberá estar electrificada, jaulas con triple seguro para acceder a los animales, guardias de seguridad las veinticuatro (24) horas, alarmas contra escape y detectores de movimiento en la verja del perímetro conectado al sistema de alarmas.

Condiciones 1.7.10 y 1.7.11 - Bioculture está en disposición de adquirir el seguro de responsabilidad pública con el límite impuesto de un millón de dólares y los respectivos endosos sin la imposición de una fianza. Es evidente que la responsabilidad de los daños que causen los animales está cubierta por el seguro de responsabilidad pública,

por ello, no es necesaria la fianza en este renglón. El interés público no se vería afectado por este cambio pues habrá una aseguradora respondiendo, además de Bioculture. En resumidas cuentas, lo que se propone es que los límites escalonados descritos en el art. 1.7.12 sea el de la póliza de seguros, ya que ésta cubriría la responsabilidad pública. De lo contrario, sabemos que tal fianza no solo resultaría redundante, sino que, al no existir compañías dispuestas a vender tal producto, dicho requisito impediría que Bioculture pueda operar en Puerto Rico. está disponible y no haría viable la operación.

Condición 1.7.12. Modificar este artículo para atemperarlo a los cambios antes descritos sobre el seguro de responsabilidad pública y al establecimiento de un Fondo Especial según se sugiere a continuación:

> Bioculture está dispuesto a establecer un Fondo Especial de ciento setenta mil dólares ($170,000)[2] para asegurar aquellos gastos relacionados a la captura de animales en casos de fuga y manejo de los animales en casos de abandono o quiebra de Bioculture. Dicha suma de dinero se consignará en una cuenta PLICA y los fondos podrán ser retirados por el Gobierno de Puerto Rico, el DRNA o el Departamento de Agricultura según se describe a continuación:
>
> 1.7.12.1 - En aquellos casos relacionados a la fuga de animales (incluyendo casos de desastres naturales, causa mayor o negligencia atribuible a Bioculture), Bioculture deberá llevar a cabo gestiones para la captura inmediata del animal. Si en veinticuatro (24) horas no logra su captura, deberá notificarlo al DRNA. Aquellos gastos que incurra el DRNA para la captura de los animales deberá ser reembolsado a través de la compañía aseguradora y/o Bioculture. En caso de que la compañía aseguradora o Bioculture no cumplan con el reembolso de los gastos, el DRNA podrá desembolsar la cantidad correspondiente del Fondo Especial. Bioculture proveerá personal experto en captura de primates para asistir al DRNA.
>
> 1.7.12.2 - En caso de un abandono o quiebra de Bioculture donde no se dispusieran de los animales, se podrá utilizar el dinero en el Fondo Especial para que el DRNA lleve a cabo las gestiones necesarias para disponer de los mismos.

Condición 1.7.14 - Esta condición plantea un serio problema por implicar una renuncia a derechos constitucionales. Además, debe haber una razonabilidad en la intervención

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[2] Esta cantidad esta basada en los más de 20 años de experiencia de Bioculture en el manejo y captura de animales. A pesar de que durante la existencia de la compañía no ha ocurrido fuga de animal alguno, Bioculture ha llevado operaciones de captura de los *Macaca Fascicularis* y conoce el trabajo que conlleva la captura de los mismos así como el equipo necesario para ejecutar dicha operación. [**Ver Anejo 1**] También se conocen los costos de disponer de los animales por razones de eutanasia. [**Ver Anejo 2**].

de forma que se eviten abusos o arbitrariedades. A tales efectos, el artículo debe leer:

> El DRNA por conducto de la Unidad de Vida Silvestre del Cuerpo de Vigilantes, podrá en cualquier momento y sin previo aviso, entrar a las instalaciones de Bioculture PR, Inc., para inspeccionar que las condiciones de este Permiso se estén cumpliendo. Entendiéndose que dichas visitas para inspección no serán arbitrarias y caprichosas ni con frecuencia irrazonable. El empleado que realice la inspección, si desea acceder las areas de los animales, deberá cumplir con las medidas de cuidado y seguridad requeridas por Bioculture y el Departamento de Agricultura de los Estados Unidos (USDA). Mediante la firma de este documento Bioculture PR, Inc. renuncia expresa pero limitadamente a cualquier reclamo de derecho contra registros irrazonables en cuanto a las inspecciones que puedan llevarse a cabo por el DRNA para verificar el cumplimiento con las condiciones de este Permiso pero con ningún otro registro.

Condición 1.7.16. - Los cambios que se sugieren es que se amplíe el tiempo que tiene Bioculture para capturar el animal evadido. Aunque con el diseño de los edificios de la operación y las medidas de seguridad que se habrán de tomar, no se prevé que hayan fugas, lo cierto es que cuatro (4) horas para capturar el animal constituye un término arbitrario e irrazonablemente corto. Además, no es necesario reclamar directamente al seguro si Bioculture tiene un plazo razonable para reembolsar los gastos. Por ello, recomendamos modificarlo para que lea:

> En caso de que se escape cualquier primate por la razón que fuere, Bioculture PR, Inc. será responsable del rastreo y captura del mismo. Si dentro de veinticuatro (24) horas del escape, Bioculture PR, Inc. no ha podido atrapar el primate, tendrá la obligación de notificar este hecho al DRNA, quién se encargará de la captura del mismo y recobrará los costos de tal operación de conformidad con lo establecido en el art. 1.7.12, ante. De Bioculture PR, Inc. incumplir con la notificación, el Permiso podrá ser revocado.

Condición 1.7.18 - En este caso lo correcto sería el someter copia certificada de la póliza de seguro de responsabilidad pública. Debe, por tanto, leer:

> Bioculture PR, Inc. será responsable de someter copia certificada de las pólizas de seguro de responsabilidad pública, por las cantidades establecidas anteriormente, con treinta días de anticipación a la fecha en que entre en vigor el segundo, tercero, cuarto y quinto año de vigencia del Permiso. El incumplimiento con esta disposición podrá dar lugar a la revocación de este Permiso.

Condición 1.7.20. - Se repite y/o contradice lo provisto en los artículos 1.7.1.7 y 1.7.13. Para mayor claridad debe leer:

> Este Permiso tendrá vigencia y operará en pleno vigor en la fecha de su expedición, condicionado a que en los próximos treinta (30) días de haber sido expedido, Bioculture PR, Inc. haga entrega al DRNA de copia certificada de las pólizas de seguro de responsabilidad pública y de la fianza de cumplimiento requerida para cada año de vigencia de este Permiso.

Con las enmiendas aquí contenidas Bioculture podrá llevar a cabo su operación satisfactoriamente garantizando el interés público de maximizar la seguridad del ambiente y los ciudadanos de Puerto Rico.

Estamos disponibles para discutir las enmiendas solicitadas a su conveniencia o aclarar cualquier duda sobre las mismas.

Sin otro particular quedo de usted.

Respetuosamente,

Emil Rodríguez Escudero

ANEJO 1

BIOCULTURE

Bioculture (Puerto Rico) Inc.
Pueblita Carmen Box HC02 - 4250
Guayama
Puerto Rico 00784

Document BCM.PR.02.07

Animal Trapping Team

Bioculture has over 25 years experience in the trapping of wild (feral) monkeys on the island of Mauritius.
Trapping of monkeys requires a great knowledge of animal biology and behaviour.
The best trapping team should be comprised of an animal care taker who is very familiar with animal behaviour and an assistant to help place and maintain traps.
Equipment needed:

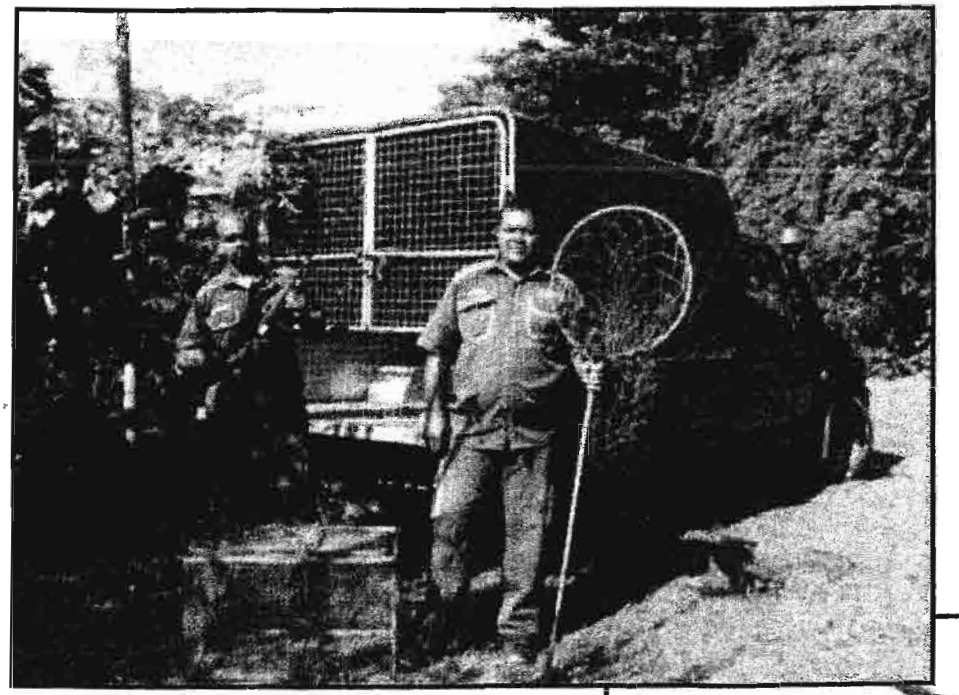
- Binoculars
- 4 individual traps that are baited with food and are triggered by the animal itself. These are placed near animal with its favorite food inside.
- Nets for animal trapping.
- Tranquilizing darts which can be fired or blown at the animal.
- Radio communication
- 4x4 vehicles.

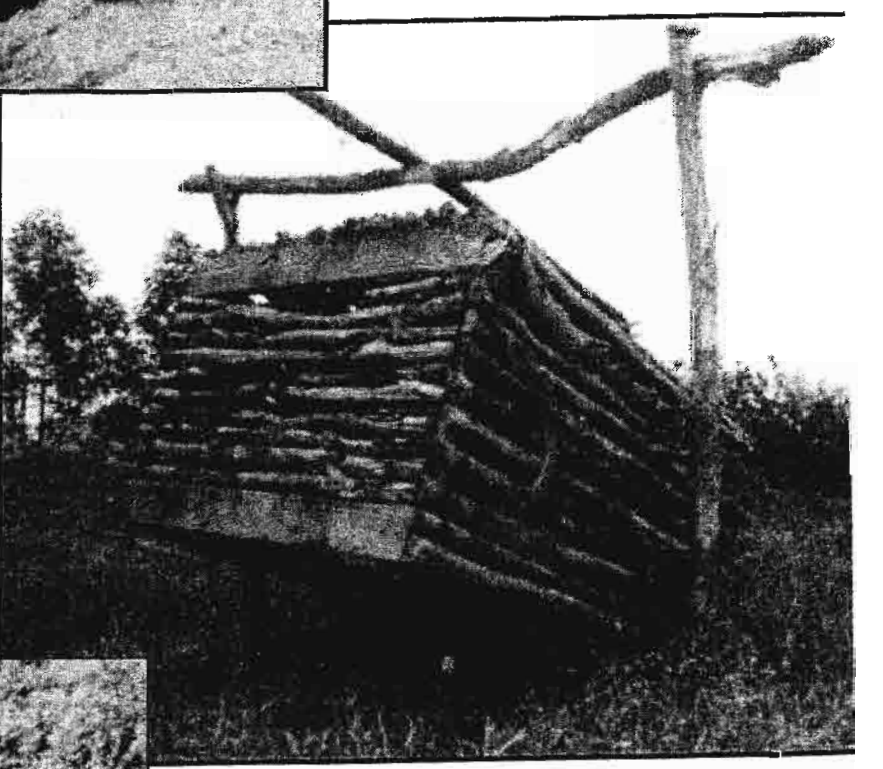
A daily operation cost for a professional trapping team is about 200$
A monthly operation cost of a professional trapping team is about 5000$
A trapping team will cover a very large area per day searching for animals.

It should however be remembered that:

1. Animals as a general rule will not venture far from the farm site in the event of an escape, and are thus easily recaptured.
2. Bioculture has invested very significantly in cage design and infrastructure and site fencing to prevent escapes.

Owen Griffiths
Managing Director.





Trappers, Net, dart gun and transport cage

ANEJO 2

BIOCULTURE

Bioculture (Puerto Rico) Inc.
Pueblita Carmen, Box HCO2 – 4250
Guayama
Puerto Rico 00784

Document BCM.PR.01.07

Euthanasia of animals

- ⇒ Animals are euthanized by an injection of concentrated anesthetic.
- ⇒ The Material is given based on the body weight and the quantity for adult animal is 4-5 kg of body weight (like a cat).
- ⇒ The price of a dose to anesthetic to euthanize one animal is between $1 and $2.
- ⇒ Procedure to be carried out by veterinarian with animal technician.
- ⇒ A veterinarian can euthanize a very large number of animals per day if needed.
- ⇒ In animal shelters veterinarians can euthanize hundreds of animals per day.
- ⇒ We estimate the cost for one animal with its disposal to be not more then $50 and the price will drop sharply if the quantity is much bigger.

Cost table for an euthanasia procedure.
Time/manpower for procedure: 1 animal technician and 1 veterinarian for 2 mins (time taken for procedure)

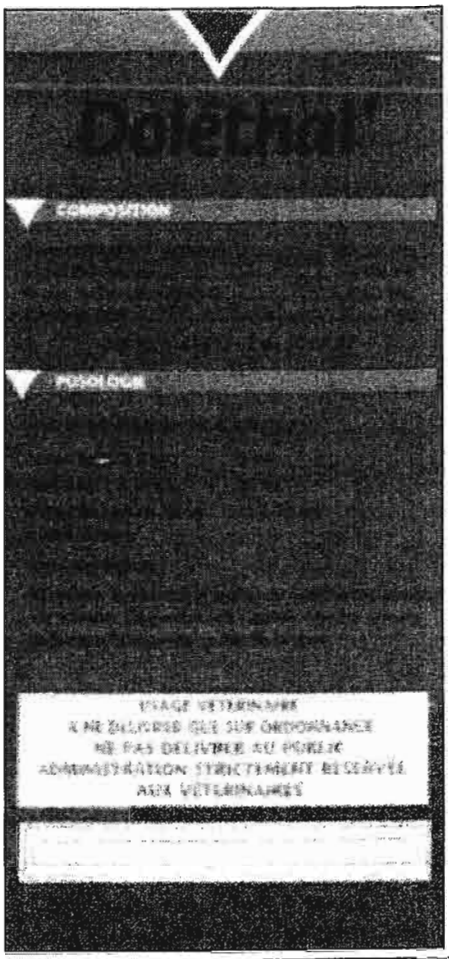
PROCEDURE: EUTHANASIA

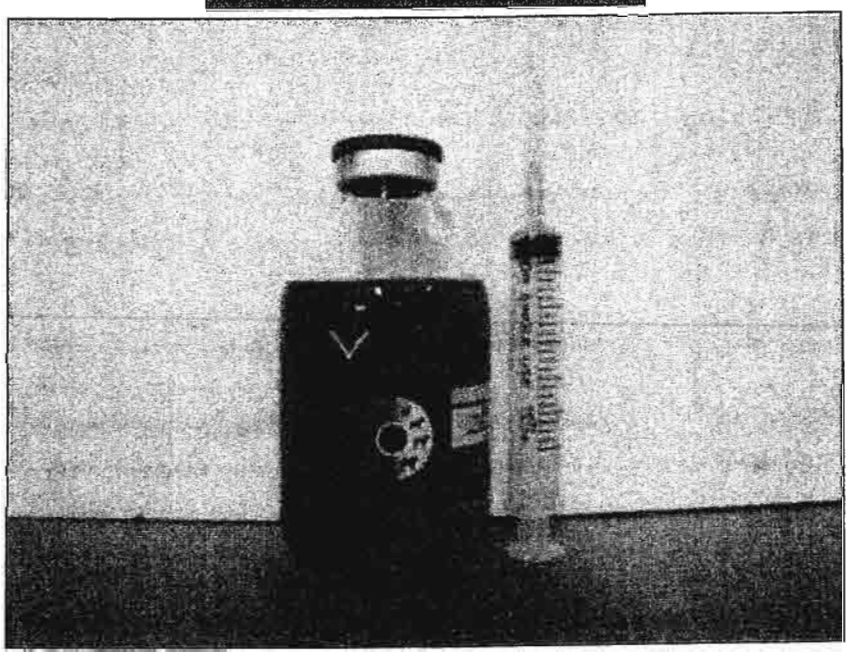
	AMOUNT	COST ($)	
TIME	2 mins		
MANPOWER			
Handler/Technician	1		
Veterinarian	1		
ITEMS			
Syringe+ Needle	2	0.50	
Latex Gloves	8	0.30	
Ketamine	0.4 ml	0.30	
Dolethal	4 ml	1.00	
Disposal Bag	1	0.50	
TOTAL		$2.60	

All calculations based on a 4 kg animal
Disposable items plus medicine costs based on $US costs in Mauritius.

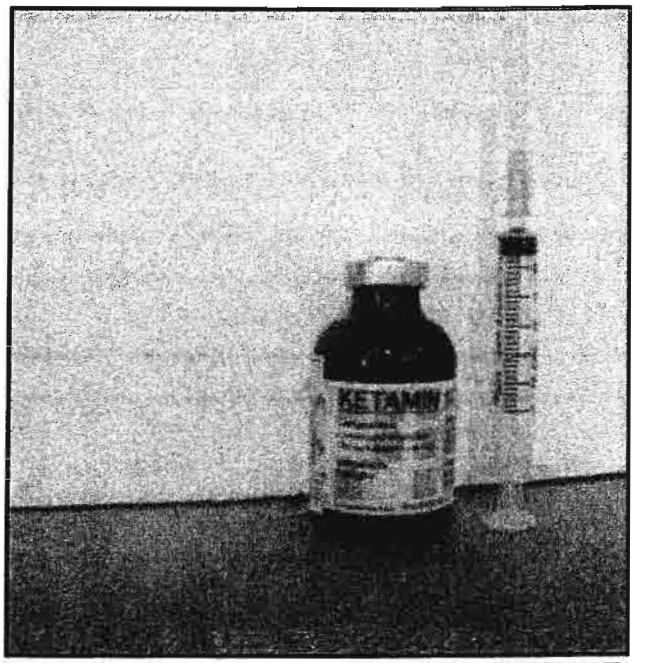
BIOCULTURE (PR) INC.

Euthanasia drugs





Tranquilizers



KETAMIN 10% INJ

18th June 2010

Javier Vazquez Morales, Esq.
Executive Director
Puerto Rico Industrial Development Company

Dear Javier,

We have had a number of very high level meetings re the issue of bond payments in the 'Animal Import Permit'. We clearly need to resolve this matter urgently.

Below we have set out our proposal that we hope will allow us to settle this issue and move on to the completion of all documentation and permitting.

As you are aware it is absolutely urgent that we resolve this issue. This project is key to the development of the Puerto Rican 'Bio-Island' concept and will bring much needed jobs to the Guayama area.

Bioculture's proposals re Animal Import Permit Bond.

Secretary's concern:

1. Bioculture needs to post a large bond in case they go bankrupt or walk away and abandon the site and the animals.

Bioculture can understand the Secretary's concern given their past experience with the USA authorities in the 1970's. On the other hand in the highly unlikely scenario where this could happen, to humanely euthanize a monkey would cost around $50.

Thus Bioculture is prepared to post an *Animal Import Bond* of $50/ animal imported. This bond is to be drawn down only if Bioculture was to cease its operations and did not remove the animals.

In the event that Bioculture did cease its operations and did remove all animals then this cash bond is to be returned to Bioculture

2. Animal escapes.

We have invested a lot of additional funds to ensure that site and cages are absolutely secure. None the less one cannot say this is impossible. Thus Bioculture proposes the following: