



VECTOR CONTROL PLAN

for the
Agromin – Commercial Organics Processing Operation

Edwards Ranch Road
Santa Paula, California 93060

Submitted to:

County of Ventura Resource Management Agency
Environmental Health Division
800 S Victoria Ave
Ventura, CA 93009-1740

February 2017

County of Ventura
Notice of Preparation of an EIR
PL17-0154
Attachment 16 - Vector Control Plan

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1.0 INTRODUCTION & OBJECTIVES

This Vector Control Plan is meant to serve as a supplement to Agromin’s Odor Impact Minimization Plan (OIMP) and Dust Control Plan. Together, these plans will help ensure that odors, dust, and vectors are properly monitored and remain under control throughout operations at the proposed Agromin Biogenic Energy Park Facility.

The proposed facility will be located at the south end of Edwards Ranch Road, near the City of Santa Paula in the unincorporated portion of Ventura County, CA (APN: 090-0-180-085). The proposed facility will receive and process up to 295,000 tons of food and green material annually, using open windrow composting, Anaerobic Digesters (AD), and Covered Aerated Static Pile (CASP) systems to convert organic materials into useable compost. For an overview of the proposed site location and facility layout, please refer to Figures 1 and 2 in Attachment A.

1.1 Definitions and Regulations

The California Department of Resources Recycling and Recovery (CalRecycle) defines a “vector” as the following:

“Vector includes any insect or other arthropod, rodent, or other animal capable of transmitting the causative agents of human disease, or disrupting the normal enjoyment of life by adversely affecting the public health and well being.” (Title 14 § 17225.73)

CalRecycle’s General Operating Standards require compost facility operators to take measures to control vectors. Specifically, Title 14 regulations provides the following guidance with respect to vector control activities:

“(3) All handling activities shall be conducted in a manner that minimizes vectors, odor impacts, litter, hazards, nuisances, and noise impacts; and minimizes human contact with, inhalation, ingestion, and transportation of dust, particulates, and pathogenic organisms.” (Title 14 § 17867 (a)(2))

Additionally, the Ventura County Non-Coastal Zoning Ordinance (NCZO) requires the following standard be applied to Organics Processing Operations with over 5,000 square feet of open beds:

“Pests - All operations must implement management practices to prevent and control vectors, such as flies, rodents and scavenging birds.” (VCNCZO, Section 8107-36.4.1)

1.2 Plan Objectives

The acceptance of green and food materials as part of ongoing composting operations at the proposed facility provides an environment conducive to vector attraction and proliferation. Additionally, the installation of two large drainage ponds on the southern portion of the facility has the potential to create a breeding ground for mosquitoes.

Birds and other vectors attracted to the proposed facility could pose a health hazard to onsite personnel as well as neighboring residents and agricultural operations, as they are capable of transmitting diseases to humans, pets and crops. In addition to disease transmittal, vectors can also disrupt site operations, damage equipment, and create aesthetic visual impacts to the site and surrounding areas.

Due to these potential issues, the recommendations within this plan aim to achieve the following

objectives related to vector control:

- Monitor onsite conditions to ensure potential vector issues are identified and assessed in a timely manner;
- Minimize the amount of exposed food material available that could serve to attract birds (including gulls), rats/mice, flies, mosquitoes, or other vectors;
- Implement measures that will minimize the population of rats/mice, flies, mosquitoes, or other vectors living and/or breeding at the facility;
- To the greatest extent possible, minimize the amount of standing water within the drainage ponds that could serve as a breeding ground for mosquitoes.

2.0 COMPOSTING OPERATIONS & VECTOR ATTRACTORS

Food material collected and processed at the proposed facility will have the greatest potential to attract vectors, specifically flies, mosquitoes, birds and certain mammalian species such as rats/mice, raccoons and coyotes. Vectors are attracted to composting facilities as the organic materials stored there represent an easy food source for opportunistic feeders and insect larvae.

The following composting operations proposed at the facility have the potential to attract vectors.

2.1 Receiving Compost Feedstocks

The proposed compost operations will accept compostable material including green material, woody material, agricultural waste, food material, and compost blending amendments such as fertilizer, peat moss, and gypsum. Green material will be received in an open building (i.e. no walls) while food material will be received in an enclosed building subject to negative pressure with biofilters to control odor emissions, which also deters vector attraction. Fertilizers and other amendments will be received at the Packaging Building and then blended with other compost products for resale to customers. During the receiving/tipping process, unprocessed organic materials and amendments have the potential to attract vectors.

2.2 Open Windrows

Active composting of green materials will occur in large, open windrows located in the central portion of the proposed facility (Figure 2, Attachment A). It should be noted that open windrows will be used to compost only green material and already digested food material. This greatly diminishes the potential for open windrows to attract vectors, but small quantities of rotting organic material within piles and standing water in between rows could serve as attractors.

2.3 CASP Composting

The covered aerated static pile (CASP) method of composting will be utilized for the processing of food material, which is blended with green material to no more than 40% food material. The proposed CASP system will be in conformance with all applicable regulations, operations and monitoring reports required by the Ventura County Environmental Health, who is the Lead Enforcement Agency (LEA).

Food material will be delivered from commercial packing trucks and received in two tipping areas within the food materials processing building. The building is fully enclosed which serves to deter vector attraction. It is also subject to negative pressure. Before discharging to the outside, air from the

building is passed through external bio-filters to control odor and air emissions. Food material will be processed and placed into the CASP within 48-hours of receiving to minimize exposure time which could serve to attract vectors. Prior to being transferred from the building, food material is mixed with processed green material which helps to control odors and deter vector attraction during transport from the enclosed building to the either CASP. The combined material is then transferred to the CASP via front-end loaders for treatment.

Once material is placed inside the CASP bunker, it is anticipated that the material will be covered with the "GORE™ Cover". The GORE™ Cover is a multi-layer laminate cover that can achieve up to 97% reduction in odor concentrations and greater than 99% containment of bio-aerosols and particulate matter. It also serves as a barrier to vector attraction while in the active composting phase. Materials placed in the CASP will be retained for 21 days before it is then transferred to open windrows for final curing.

The CASP system is also designed to collect moisture runoff for re-use, eliminating standing water which helps to prevent vector attraction.

2.4 AD Composting

Agromin is also proposing to install SMARTFERM Anaerobic Digestion (AD) technology systems to process food and green material in an oxygen-free environment. Agromin will divert green and food material already being received at the compost facility and place it into the AD system for composting.

The feedstocks are delivered to the site by commercial green material collection vehicles and by food material collection and transfer vehicles. The material will be handled in the same way as the CASP material, received within the appropriate processing building depending on the material. Materials placed in the AD system will also be retained for 21 days.

Each basic SMARTFERM AD system design features four (4) steel fabricated and insulated tunnels, each 12 feet in width, 12 feet in height and 40 feet in length. Each tunnel has a specially designed hatch that provides a gas-tight seal to ensure anaerobic conditions are properly maintained during processing. The system also contains a partially below-grade concrete percolate tank which collects percolate for reuse. The enclosed nature of the system will mostly eliminate vector attraction during processing.

3.0 VECTOR CONTROL MEASURES

The following sections outline specific measures to be implemented at the proposed facility to minimize impacts resulting from the following vectors:

- Insects (flies, mosquitoes);
- Birds;
- Rodents (mice, rats); and
- Mesopredators (coyotes, feral dogs/cats, raccoons).

Each day, the operator will determine if significant populations of onsite vectors are present as well as evaluate existing site conditions and planned operations for the potential to attract vectors. If the operator detects a significant vector population, he/she will take the following actions:

- Investigate and determine the likely source of attraction;

- Determine if specific onsite management practices (described below) could alleviate the problem and immediately take steps to remedy the situation; and
- Determine whether or not the vector attraction event is significant enough to warrant contacting a licensed vector specialist.

The primary onsite deterrent for vector control shall be the prompt processing of feedstock materials, with a special emphasis on food material, in accordance with the Agromin's quality control protocol. Generally, this protocol requires load checking to ensure contaminants of less than 1%, the initial sorting and mixing of raw feedstocks within 24-48 hours of delivery, prompt size reduction through grinding, final mixing, moisture control, temperature monitoring, final screening, continuous trash collection with regular trash hauling, and segregated storage of finished materials. In addition, the processing of food material feedstock and co-collected food material will be delivered to the enclosed processing building, which is subject to negative pressure with exhaust through bio-filters to control odors and emissions that could potentially attract vectors. The maximum storage time shall be 7 days for incoming green material feedstock and 48 hours for food material feedstock. At no time should raw food material feedstock be stored outside the enclosed processing building.

The following sections describe more detailed control measures for each specific vector.

3.1 Insect Controls

The primary insects of concern at the proposed facility are flies and mosquitoes, both of which are attracted to decaying organic material and have the potential to transmit pathogens and communicable diseases to humans.

Flies: Flies are both a nuisance and a vector. They can pick up dangerous organisms with their mouths and other body parts, and pass them to humans and animals through their feces and vomitus. Flies that breed and feed on damp and decaying organic matter include: Fruit flies, Phorid flies, Sphaerocerid flies, House flies, Blow flies, Bottle flies, and cluster flies. The goal is to eliminate the potential feeding and breeding sites for flies within the compost feedstocks and windrows as well as the CASP and AD systems. The following measures shall be implemented to accomplish this goal:

- Maintain sufficient windrow/pile structure and temperature to eliminate fly feeding and breeding sites within the facility. This shall be accomplished by blending all food material and green material together to achieve a carbon to nitrogen (C:N) ratio between 25:1-40:1 or higher prior to active composting, and by maintaining a temperature between 131° and 160° F during active composting.
- All green and food material feedstock deliveries received shall be mixed and ground to a size of 3" or less within 48 hours of delivery to the facility. Prior to transfer from the enclosed processing building, food material shall be mixed with green material. No raw food material shall leave the building without being either mixed with green material or properly covered to prevent vector attraction.
- If observed, all windrow or pile spillage shall be collected using an onsite vacuum truck and incorporated back into the pile or windrow processes.
- All spaces between processing piles and/or windrows shall be kept free of waste, and site drainage shall be directed away from compost piles.

- To the extent feasible, screens shall be placed on all the doors and windows of buildings proposed to provide human habitation to keep unwanted insects out.
- Sticky flytraps shall be placed in all structures housing employees, and shall be inspected and replaced on a regular basis.

Mosquitoes: Mosquitoes are responsible for more human deaths than any other living creature. Every year, over one million people die from mosquito-borne diseases. Mosquitoes can carry many different kinds of serious diseases, including malaria, heartworm, dengue fever, encephalitis, yellow fever, and West Nile Virus. All Mosquitoes need water to complete their life cycle. Therefore, the goal of Agromin's mosquito control program is to eliminate standing water on-site through proper drainage and good housekeeping.

Runoff from the AD and CASP systems is self-contained within each system and reused in those processes.

Smaller quantities of surface runoff may pond in a few localized low areas throughout the facility. Greater quantities of surface runoff will be collected in two detention basins located on the southern portion of the facility through a system of surface drainage channels and subsurface storm drains see Figure 2 (Attachment A) for the location of the drainage ponds. These ponds are lined to prevent water from infiltrating into the ground. The drainage ponds could potentially store large quantities of water for extended periods of time.

Agromin shall implement the following measures to prevent mosquito breeding throughout the proposed facility:

- Onsite personnel shall survey the site daily for standing water.
- Unsealed containers holding water will be turned over.
- Ditches and/or drainage facilities will be cleared of dirt and debris.
- Small quantities of ponded/pooled water will either be absorbed using onsite supplies of mulch and placed back into compost piles, or pumped into water trucks and used in the processing of compost piles. Smaller pools also tend to naturally evaporate.
- Standing water in the detention ponds will be visually inspected on a daily basis for evidence of mosquito larvae (called "wigglers") and pupa (called "tumblers"). The perimeter of the ponds will have the greatest potential to harbor larvae/pupa, and shall be inspected thoroughly. If water is murky, onsite personnel shall collect water from the perimeter of the pond in a clear container for easier inspection. If larvae and/or pupa are observed within either pond, Agromin staff shall contact Ventura County Environmental Health Division (VCEHD) to assess the use of mosquito fish as a vector control. The mosquito fish are available for free upon request from Ventura County's Vector Control Program and can be directly introduced to the detention basins. If used, mosquito fish shall be applied to the ponds within 5 days following the discovery of larvae/pupae.
- If the use of mosquito fish is not feasible as determined by the VCEHD, then larvicides (e.g. VectoBac, VectoLex, etc.) shall be applied to the ponds. The larvicide operation shall only be

applied by a licensed pesticide applicator. If used, larvicides shall be applied to the ponds within 5 days following the discovery of larvae/pupae by onsite staff.

- Vegetation conducive to mosquito production, such as water hyacinth (*Eichhornia spp.*), duckweed (*Lemna* and *Spirodela spp.*) and filamentous algal mats shall be prohibited from establishment within the drainage ponds. The ponds shall be inspected regularly and monitored for vegetation growth, and any growth found shall be immediately removed.
- Personal protective equipment, such as mosquito repellent, shall be kept onsite for use by facility personnel in the event that a high concentration of mosquitoes are identified. If unusually high concentrations of mosquitoes are observed, personnel shall immediately alert the onsite manager and nearby staff.
- Sticky fly traps shall be placed near the retention ponds and inspected on a monthly basis for evidence of adult mosquitoes.

3.2 Bird Controls

The facility has four operational components with the greatest potential to attract birds (including gulls). These operational components include:

- Initial receiving and tipping of green and food materials;
- Initial processing and storage of green and food materials;
- Blending and storage of food and green material within the processing buildings; and
- Active composting in windrows and the CASP systems.

The primary bird attraction event is the initial tipping of food material. To the greatest extent possible, onsite personnel shall direct trucks containing food material *completely* into the enclosed processing building. After initial tipping, food material will immediately be pushed through the processing system which involves grinding, sorting and screening the material within the enclosed building. Once processed, materials will then be immediately transferred to either the CASP or AD systems to minimize exposure time.

If for any reason piles of unprocessed or processed food materials need to be stored inside the processing building for longer than 24 hours, a textile cover, mulch or layer of finished compost will be used to cover the piles. Since the green material needs to be mixed with food material to achieve optimum efficiency during active composting and/or anaerobic digestion, the covering of food material is a natural step in the Agromin's overall process and should therefore not inhibit normal facility operations. All food material received will need to be processed and placed into either the CASP or AD systems within 48-hours of being received.

Bird deterrents proposed for use at the facility may include the following:

- Bird wires with mylar flagging may be strung over exposed active windrow piles and the food material processing building to eliminate places for seagulls to roost;

- Bird wires with mylar flagging may also be strung over the entrance to the food material processing building and the green material tipping areas so that seagulls cannot fly into these areas from above;
- Employ guns (“bird scarers”) including “canons” and “screamers”, around the food materials processing building to deter bird activity;
- Broadcast distress recordings of birds to deter attraction;
- Maintain a daily litter clean-up program around the site; and
- Practice good housekeeping and regularly sanitize the tipping areas.

3.3 Rodent Controls

Rodents are attracted to compost sites, as they can provide an easily accessible source of food. Rodents can carry and spread diseases such as the hanta virus and bubonic plague and they can also cause fires or electrical shorts by chewing through electrical wires in structures and equipment. They can proliferate in a number of spaces, including engine compartments, old vehicles, storage sheds, brush piles and under buildings or other structures. Therefore, the goal of Agromin’s rodent control program is to eliminate the three basic environmental factors conducive to rodent proliferation: (1) Food, (2) Water, and (3) Harborage. The following measures shall be implemented to accomplish this goal:

- All garbage shall be removed from the site perimeter and from within buildings on a daily basis. All garbage shall be placed in trash receptacles with tight-fitting covers. Damaged garbage receptacles shall be replaced in a timely manner.
- Incoming food material trucks shall be directed into the enclosed processing building for immediate processing.
- Remove all old vehicles, and other rubble from the site that could harbor rodents.
- Sweep up and remove excess compost and/or green and food material feedstocks from along the walls of buildings.
- Building materials (lumber, roofing, cement blocks, bricks, buckets) shall not be stacked within on-site buildings or structures.
- Within all structures, finished products shall be stored on pallets.
- All site landscaping shall be trimmed and/or thinned periodically to minimize potential rat habitation. All trees and/or shrubs located adjacent to existing structures shall be thinned so that approximately two feet of separation exists between each tree/shrub to minimize the potential for rodents to freely move between them.
- If the above described sanitation and building construction control measures are ineffective in controlling rodent populations on-site, traps can be utilized as necessary to control the rodent population. If implemented, inspection of all traps shall occur on a weekly basis to ensure proper baiting. No rodenticides (anti-coagulants) shall be used as trap bait. All dead animals shall be disposed and removed from the site immediately to prevent further vector attraction.

3.4 Mesopredators

A mesopredator is a medium-sized predator in the middle of a trophic level, which typically preys on smaller animals, but often displays an opportunistic diet and high toleration for close contact with humans. Examples of mesopredators include opossums, feral cats and dogs, coyotes and raccoons. Due

to their opportunist diet tendencies, these mesopredators may be attracted to the facility as a source of food. The goal of Agromin’s mesopredator control activities is to avoid significant impacts during operations by limiting the attraction of mesopredators to the facility and ensuring no increase in the number of mesopredators. The following measures shall be implemented to accomplish this goal:

- California Department of Fish and Wildlife (CDFW) approved trapping of mesopredators as an abatement strategy. Traps shall be placed at regular intervals around the perimeter of the proposed Conditional Use Permit (CUP) boundary, and will have large enough mesh to avoid trapping non-target small mammals. All trapping procedures shall follow CDFW regulations. Inspection of traps, removal of nuisance animals, and release of non-targeted species will occur within 12 hours of trap deployment. No poisoning of mesopredators or any other trapped animal is permitted, unless approval is granted by the CDFW and the Ventura County Planning Division.
- Use of registered repellents, to ensure mesopredators are not attracted to the site. These repellents shall be used in a manner that is consistent with CDFW regulations and will be placed along the perimeter of the CUP boundary.

4.0 SUCCESS REPORTING

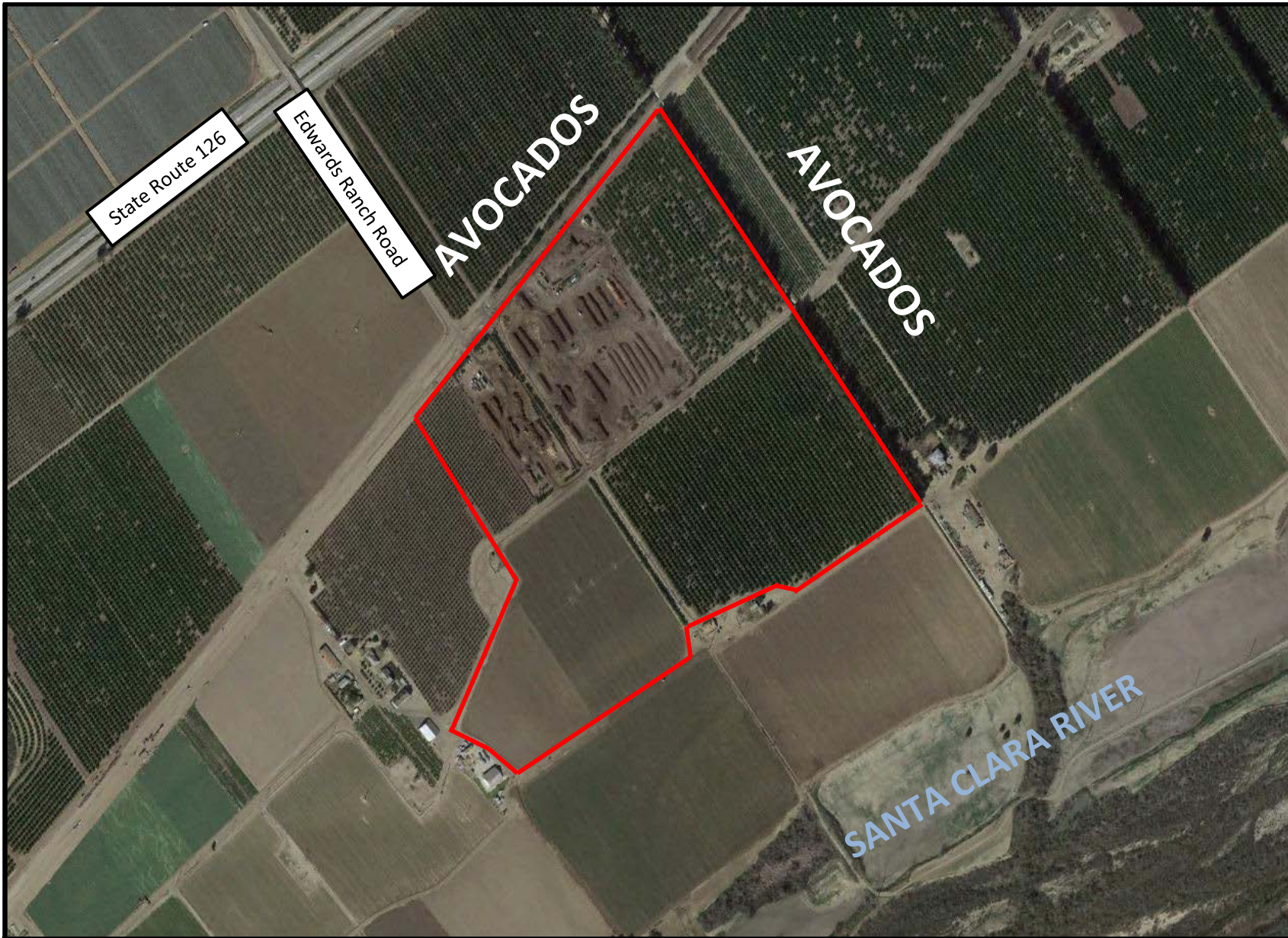
To gauge the success of this vector control program and the procedures outlined within this plan, assessments of onsite vector activity shall be conducted on a monthly basis at minimum, by a designated onsite employee who is familiar with the potential vectors in the area and control policies. Records of these assessments shall be maintained onsite and available to the LEA by request.

Metrics that may be used to gauge the success of this vector control program and track vector issues at the facility include:

- The increase/decrease in the number of gulls present in the tipping area and the general population of gulls around the facility.
- The increase/decrease in fly populations, mosquito populations, and rodent populations.
- Mesopredator monitoring reports conducted by a CDFW licensed trapper can be reviewed to track the number of mesopredators captured and the effectiveness of the control measures utilized.

ATTACHMENT A

FIGURES



Google Maps 2015

Approximate Site Boundaries



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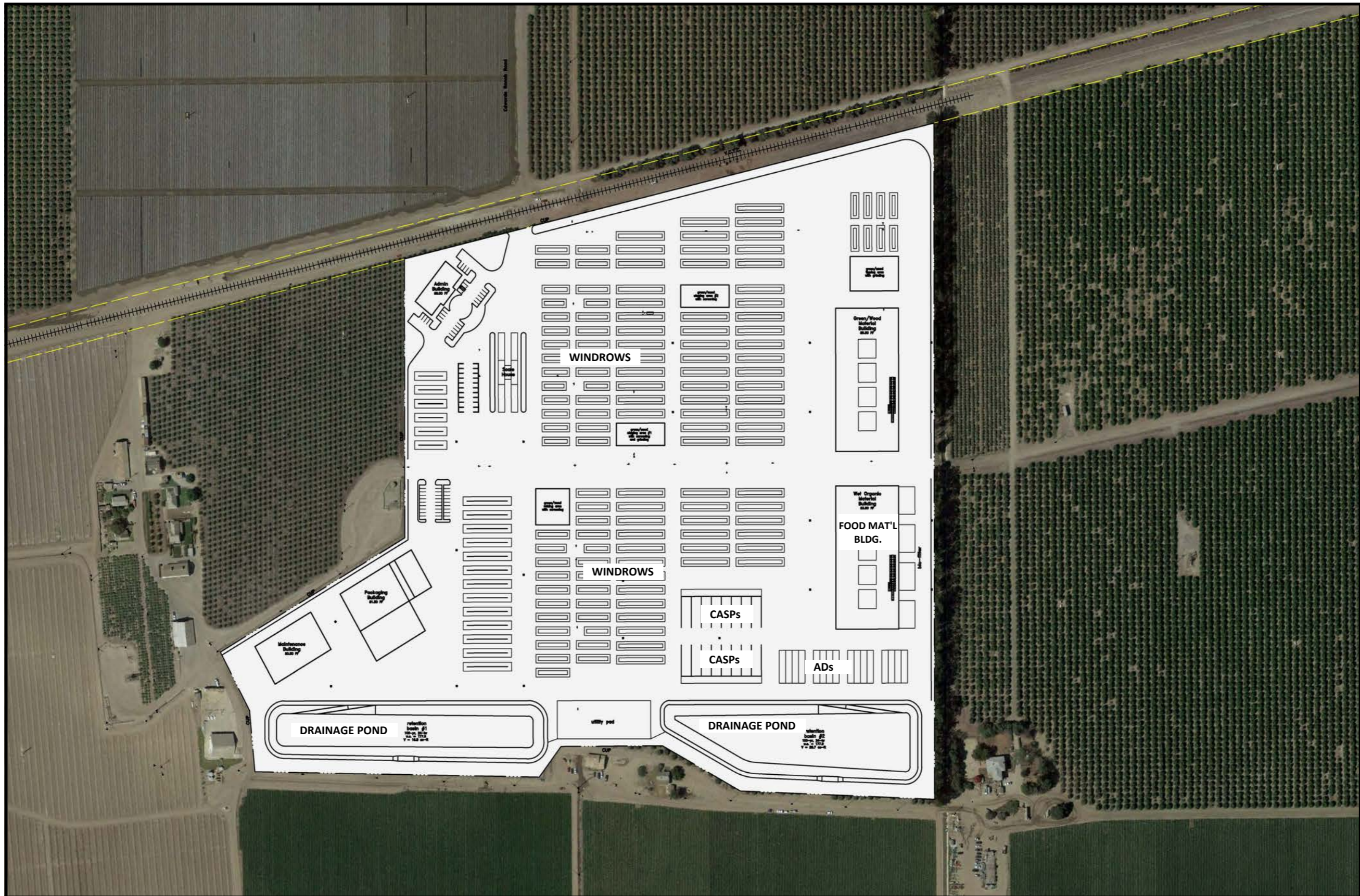
FIGURE

1

SITE LOCATION MAP

Agromin - Biogenic Energy Park
Santa Paula, California

PROJECT #:	AG01.11.02	DATE:	4/25/16
SCALE:	as shown	DRAWN BY:	GPS



SESPE
CONSULTING, INC.

FIGURE 2	FACILITY SITE PLAN		
	Agromin - Biogenic Energy Park Santa Paula, California 93060		
PROJECT #:	AG01.11.02	DATE:	2/28/17
SCALE:	as shown	DRAWN BY:	RDF