

# SAMPLE

## COUNTY OF SANTA CLARA INTEGRATED PEST MANAGEMENT COUNTY IPM COORDINATOR - FIELD INSPECTION REPORT

<b>Date of Inspection:</b>	<b>Project Site:</b>
<b>Dept. IPM Coordinator:</b> <b>Phone:</b> <b>Fax:</b> <b>E Mail:</b> <b>Address (If Other than Project site):</b> <b>City/State/Zip Code:</b>	<b>Address:</b>  <b>City/State/Zip Code:</b>
<b>On Site Contact</b> John Doe <a href="mailto:JohnDoe@xyz.org">JohnDoe@xyz.org</a> 408-299-5159	<b>Title</b> Facility Manager
<b>Report Circulation other than above</b>	<b>Title</b>
<b>Last Inspected:</b> Initial Inspection	<b>Next Inspection:</b>

### IPM PROJECT SUBJECT: RODENT MANAGEMENT

#### SITE EVALUATION

Pests:                                      Yes X                                      No \_\_\_\_\_

Activity: Roaches \_\_\_\_\_ Rodents \_\_\_\_\_ Flies \_\_\_\_\_ Stored Product Pests \_\_\_\_\_ Others X \_\_\_\_\_

Where:

1. **Non Biting Midges** (Chironomids) were noted in the offices of section A, in the air ducts, over the drop ceilings, as well as large numbers were noted outside resting on walls, trapped in spider webs, in and around A/C units (on the roof).
2. **Field Cricket** activity noted throughout the section "A" offices.

#### PEST FACTS TO KNOW ABOUT: NON BITING MIDGES

Non biting midges (Chironomids) are found in swift moving streams, **deep and or slow moving flood drain, stagnant ditches**, and in lakes and ponds that are **rich in decomposing organic matter**. They are often mistaken for mosquitoes. Many species look like mosquitoes and may form annoying swarms or clouds in the air but **they do not bite**. The difference is that female mosquitoes do bite; female midges do not.

The immature stages also develop in water in pools, containers, ponds, and **clogged rain gutters**, or or in some cases, **wet soil** or seepage areas. Most feed on **living or decaying plant matter** and are an important part of aquatic food chains. Many species can survive in very stagnant or polluted water. The life cycle usually takes about 4 to 5 weeks. There may be several generations during the summer but these

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insects usually disappear with the onset of dry weather. Fortunately, **problems are usually temporary and intermittent.**

Most species of Chironomids midges are highly desirable organisms in aquatic habitats. Midges are an important food source for fish and predatory aquatic insects. Larvae “clean” the aquatic environment by consuming and recycling organic debris.

However, in urban environments where buildings are constructed adjacent to **flood channels**, creeks, lakes and ponds, adult midges often emerge in extremely large numbers, causing a variety of nuisance and other problems for people who reside within the flight range of these insects. Adults are weak flyers and may fly or are blown ashore where they **congregate on vegetation, under porch alcoves and on walls of buildings.** Swarms of adults may be so dense that they interfere with outdoor activities and stain walls, cars and other surfaces upon which they rest. Adults are **attracted to lights** and may **accumulate in large numbers on window screens and around porch and streetlights** and sometimes **sucked directly into the Air conditioning ducts, inside buildings with negative air pressure.** The **occurrence of midges promotes the growth of spiders** whose unsightly webs may have to be removed frequently.

**Long-term control** requires trying to **eliminate breeding sites, wet areas or standing water.** Often, however, this is not practical. Water should not be treated with any insecticide in an attempt to control midges. The potential harm to the environment and wildlife is too great to justify an application for a temporary nuisance.

There are no good alternatives for control of the adults, other than some pressurized aerosol sprays containing pyrethrins. These are impractical for treating anything other than small areas. These products only kill insects that are directly hit by spray particles; there is no lasting or residual effect. More Midges will quickly enter the area after the spray has settled.

Midges have not been implicated in the transmission of disease; however, due to their large numbers, they become nuisance. **However, the presence of their dead bodies (insect particles) in the air conditioning ducts or over drop ceilings in office environments as noted in this case is cause of concern, since Chironomids contains potent inhalant allergens. It should be considered when dealing with human respiratory allergy caused by arthropods.**

**Possible Solutions:** Please note that some of the suggested solutions are beyond the scope of building/facility management expertise. For example: **Nutrient Reduction, Draw down of Creek, and Biological Control in the Creek.** These are discussed in the overall framework of pest management strategies, so that all concerned groups understand their responsibilities and can work together to provide long-term solution to combat this challenge.

### **Physical and Cultural:**

- **Nutrient reduction:** Reduction of aquatic midge populations can often be accomplished if the physical and chemical environmental factors that is responsible for development of nuisance populations are altered. Since dense larval populations usually occur in nutrient rich habitats, manipulating the nutrients that are introduced into aquatic systems by reducing run off from agricultural operations and urban environments may help to discourage the proliferation midges.
- **Draw down of creek:** Exposure of bottom mud by draining lakes and reservoir during winter months will kill over wintering midge larvae, reducing the size of the adult population emerging in spring. Understandably, this method may not be practical for all bodies of water.
- **Diversion of adults:** Many lakes and reservoirs that produce nuisance populations of midges have homes and businesses constructed along the shorelines. After emergence, midge adults are attracted to shoreline lights. High intensity white light has been found to be highly attractive to adults. Keep window blinds closed and porch light off during heavy emergence periods to help reduce the number

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of adults attracted to residences. Strategically placed high intensity white lights may divert midges away from populated areas.

- **Electrocution traps:** Electrocution traps will attract and kill large numbers of midge adults. It is doubtful that a single electrocution trap could kill a sufficient number of midge adults to appreciably reduce nuisance populations. In addition, during heavy adult activity, the trap may malfunction as a result of becoming clogged with midge body fragments.

### **Biological:**

Midges are fed upon by a large variety of aquatic organisms, such as dragon fly nymphs, predaceous diving beetles and a variety of fish species. Where the diversity of predaceous animals is high, the density of midge larvae is usually held below nuisance population levels. Shallow, organically rich lakes, flood drainage and heavily polluted habitats such as sewage waste lagoons are inhabited by few predaceous species compared to bodies of water that receive less nutrient-rich input.

**Predatory fish:** Chironomids midges are a major component of the diet of many fish species. In particular, bottom-feeding fishes, such as catfish and carp, consume large numbers of midge larvae. However, the feeding of these fishes has, generally, not been shown to reduce adult midge populations below nuisance levels adjacent to habitats where there were large larval populations.

**Biological larvicide:** *Bacillus thuringiensis* var. *israelensis* (Bti), is registered for use against Chironomids midge larvae. Bti is toxic after being consumed by the larvae. Consequently, in waters of high organic content (which present a competing food source for the midges), Bti is only effective at high rates of application (at least 10 times the rates needed for mosquitoes), which limits the economic use of Bti to small habitats. To maximize the effectiveness of larvicide, applications should be properly timed. Accordingly, dredge samples of bottom mud should be collected, sieved, and the Chironomids larvae recovered and counted. Chemical treatments should be made when the number of larvae found equals or exceeds 200 per 6-inch square bottom sample. This treatment threshold is completely arbitrary. It is based on insecticide treatments made for the control of midge larvae in Florida and California. Without monitoring a midge population for one season, the relationship between numbers of immature midges in the bottom mud and consequent numbers of nuisance adults cannot be established.

**Insect Growth Regulator:** The insect growth regulator methoprene is also registered for use to control midges.

### **PEST FACTS TO KNOW ABOUT: FIELD CRICKETS:**

**Field Crickets & Ground Crickets** over winter as eggs or nymphs in **moist, firm soil**. They become structural pests in late summer and early fall when they move out of fields and into buildings. They are largely **active at night** and readily **attracted to lights**, can fly and are often **found around dumpsters**. They **occur in lawns, underneath shrubbery** and **wooded areas**. Large swarms may invade well-lighted areas covering streets and the sides of buildings black with crickets. Outbreaks occur when rainfall follows a period of drought or area surrounding the structures is irrigated.

**Possible Solutions:** Sanitation is the most important means of eliminating nuisance crickets. **Keep all areas** in and around buildings **free of moisture, dense vegetation** and weeds (1 foot band next to foundation). Mow lawns, cut weeds, and clean up garbage collection areas. **Remove harborage sites** such as piles of bricks, **stones, rotting wood or mulch** and other debris. **Caulk and seal all cracks and crevices**, especially **near the ground level** at windows and doorways.

**Make sure** that all **windows and doors** are **tight fitting with proper screening** in place. Exclusion is an important factor as well as light discipline. **Avoid bright mercury vapor lights** in entryways and along structure perimeters since crickets will be attracted from far distances. **Convert to sodium vapor yellow lights** (less attractive to insects) instead of white, neon or mercury vapor lights.

Avoid any kind of on ground storage around/near by the structure. Raise garbage cans off the ground if practical. Trash and dumpsters should be placed as far from the building as possible. Crickets are attracted to food in these areas. Crickets may be troublesome at trash dumps, grassy roadsides, pasture fields and wooded areas (breeding sites) before entering structures. Crickets can be killed with a fly swatter, collected by vacuum cleaner or broom and dustpan and discarded, if a few are present.

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### **CURRENT PEST MANAGEMENT PRACTICES IN USE**

None

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### **ALTERNATIVES TO PESTICIDES**

Pesticide application for adult Midge control on the building or inside the building are not practical except biological control, that needs to be coordinated with authority responsible to manage arthropods in the flood channels behind the building.

There may be need for insecticide bait placement to check the cricket activity around the exterior perimeter of the building. Residual insecticide application is not recommended.

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### **RECOMMENDATIONS & FOLLOW UP**

#### **Adopting IPM & Pesticide Use Reduction:**

Your objective should be adopt elements of IPM in sequence or together as suggested above and opt for Rodenticide use as the last resort, which may not be warranted once the control is achieved through habitat modification, exclusion and trapping. Remember IPM projects are a joint partnership among the beneficiaries and must be accomplished with strong desire and commitment among all concerned.

#### **Recommendations to the Facility Management:**

- Consider alteration in the exterior lighting system away from wall, flooding the building from a distance. Consider replacing mercury vapor lamps on or near the building with high-pressure sodium vapor lamps to reduce night flying insects (midges, crickets etc.) attracted to the area.
- Trim the vegetation and consider altering the landscape in the affected areas by selecting less dense vegetation (drought tolerant, that requires less frequent watering). This will help to prevent attracting midges as well as other insects like crickets taking shelter during the daytime and later in the evening gaining entrance inside the building through fine cracks & crevices as well as through doors as and when opened.
- The condensate leak from the Air Conditioners should be connected to a closed drainage system (not roof storm drains) to minimize puddle of water on the paved surface as noted adjacent to the dumpster.
- Ensure to fix the gaps between the air intake duct/vent filters as noted in most of the air conditioning units at the roof. It was pointed out to Mel Rosson, Maintenance Engineer.
- Ensure that all Skylights (on roof) are airtight.
- Install air filters on the return air duct/vents. There is likelihood that midges are sucked through these holes, which currently has no protection.
- Ensure to seal the gaps between the entrance doors.
- Arrange deep cleaning/disinfecting air-conditioning ducts/vents as dead midges were noted inside. This is the major cause of problem (at present) as dead insects/and fragments are blowing through these vents into the staff offices and there is a considerable health concern (allergens) to the staff. Affected staff should be relocated to other office areas, until problem is resolved.
- It seems that the building currently has negative air pressure. Check and ensure to create positive air pressure through increased flow of air pumped into the structure.
- Installing air curtains on the key doors (frequently opened doors) will also help to minimize the insects gaining entrance inwards.
- Arrange with exterminator for indoor vacuuming and cleaning of dead or live crickets and exterior perimeter treatment (baiting only, no residual insecticide application).

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- Arrange the schedule and communicate with the SSA staff (tenant) so that they are aware of the action plan and expected timeline to resolve this problem.
- [Discuss the subject with authority responsible for Flood Channel maintenance and ask them to investigate the possibility of Biological control treatment of the water and surrounding vegetation.](#)

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**References:** None, except as hyperlinked

**Inspection Made By:** NARESH DUGGAL, M.Sc.,C.Q.C.S., BCE (Board Certified Entomologist)

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