MOSQUITO RESEARCH & CONTROL UNIT
CAYMAN ISLANDS GOVERNMENT

OXITEC

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FOR IMMEDIATE RELEASE

GM Mosquito Release Commences in Grand Cayman

The Cayman Islands Government has strengthened its efforts to protect residents and visitors from Zika, dengue and chikungunya with the launch of additional mosquito controls today (28 July 2016).

The public health programme was delayed by two weeks due to legal action by an objector to the initiative. However, a court ruled earlier this week that there were no grounds for the action and lifted the temporary "stay", a legal proceeding to delay the release, which was imposed on 13 July 2016.

"It is important that we are able to get on with the job as there is an urgency from the public health perspective," said Dr. Bill Petrie, director of the Cayman Islands Mosquito Research and Control Unit (MRCU). "We need to get the project back on track and put in place the preventative measures we have planned to reduce the risk of local transmission of mosquito-borne diseases."

Three cases of imported Zika have recently been confirmed in Grand Cayman, contracted by residents who travelled to countries experiencing an outbreak of the virus.

Known as the "Friendly *Aedes aegypti* Project", operational roll-out of the pioneering technique using genetically modified mosquitoes began this morning in West Bay. The area is a hotspot for *Aedes aegypti,* the non-native species of mosquito that transmits Zika, dengue and chikungunya as well as yellow fever.

Zika can cause the birth defect microcephaly, the World Health Organization (WHO) has confirmed, and the virus is also linked to other serious medical conditions such as Guillain-Barré Syndrome, which can lead to total paralysis. Dengue and chikungunya are a serious threat to public health, with young children, the elderly and those with underlying medical conditions most at risk.

The operation in West Bay is being carried out by MRCU in collaboration with biotechnology company Oxitec.

"The technique is recommended by the World Health Organization as a tool to fight Zika," said Dr. Petrie. "One of the overarching responsibilities of the Ministry of Health is to

protect the health and well-being of residents and visitors to the Cayman Islands. As a government agency, MRCU is tasked with controlling the dangerous *Aedes aegypti* mosquito population, using the best arsenal at our disposal, to ensure this happens."

As well as the roll-out in Grand Cayman, Oxitec is currently deploying the technique operationally in an area of 65,000 people in Brazil, a country severely affected by the Zika virus.

The safety and efficiency of the technique was demonstrated through field releases in East End, Grand Cayman, in 2009 and 2010, as well as Brazil and Panama. The *Aedes aegypti* population was reduced by more than 90 per cent in the areas where these releases took place.

"The operation we are launching today in West Bay is the deployment of a tested technique," said Dr. Petrie. "It is a public health imperative that we control the *Aedes aegypti* mosquito, and that is exactly what we are undertaking to do."

The genetic modification technique developed by Oxitec has also undergone exhaustive safety testing and evaluation by teams of scientists around the world.

Earlier this year, WHO recommended pilot deployment of the Oxitec technique, under operational conditions, to respond to the Zika crisis which, in February, was declared an international public health emergency.

In the Cayman Islands the initiative was reviewed by the Department of Agriculture, the Department of Environment and the National Conservation Council, and official approval granted.

A proactive measure to prevent the local transmission of mosquito-borne viruses, the genetic-modification technique is being integrated with existing MRCU control methods which include the use of chemical and bacterial insecticides to kill *Aedes aegypti*.

The treatment area in West Bay comprises 300 acres between Watercourse Road, Powell Smith Lane, Rev. Blackman Road and Hell Road. A hundred to 200 pots, each containing approximately a thousand genetically modified, non-biting male *Aedes aegypti* mosquitoes, will be released around three times a week.

"The 'Friendly *Aedes aegypti'* males will seek out the wild female *Aedes aegypti* and, when they have offspring, the progeny will die before reaching adulthood," explained Dr. Renaud Lacroix, Oxitec's on-island project manager. "This limits the population of *Aedes aegypti*, helping to reduce the risk of viral transmission among people living in the area."

Aedes aegypti differs from other breeds of mosquito in Grand Cayman as it is the only one that carries Zika, dengue and chikungunya, and bites only during the day. Swamp mosquitoes cause the most nuisance to residents and visitors, and are active after dark.

Working alongside MRCU staff, three Caymanians and a scientist married to a Caymanian, have been hired to work on the project.

Kenroy Millwood, Giselle Johnson and Heidi Groves, all from West Bay, along with Isavella Evangelou, joined the Oxitec team a couple of months ago and are an integral part of the laboratory and fieldwork team.

"We are very excited to start this project and help make a difference in our community," said Kenroy.

The treatment phase in West Bay is expected to last around nine months and then be rolled out to other areas of Grand Cayman, subject to the relevant approvals. Cayman Brac and Little Cayman are not affected by the *Aedes aegypti* mosquito.

Sidebar:

How the technique works

The "Friendly *Aedes aegypti"* is a genetically modified male mosquito that cannot bite or transmit diseases. When it mates with a local female *Aedes aegypti* mosquito, the offspring die before being able to reproduce. Hence, with successive releases, the population of the Zika, dengue and chikungunya mosquito is reduced.

Further information

Diseases spread by the *Aedes aegypti* mosquito

- Zika virus is rapidly spreading into new countries and has caused a state of emergency in Brazil where it has been linked to a sudden increase in birth defects (microcephaly) and nervous system disorders (Guillain-Barré syndrome).

- Chikungunya swept into Central America and the Caribbean in 2014 with an epidemic spiking to over a million cases within a year.

- Dengue fever infects an estimated 400 million people globally every year with about half of the world's population at risk.

- Yellow fever is a major health threat. Globally, there are an estimated 200,000 cases of yellow fever, causing 30,000 deaths each year, with 90 per cent of cases occurring in Africa.

About MRCU

The Mosquito Research and Control Unit (MRCU) was established in 1965 to suppress mosquito populations to minimise discomfort from mosquito biting, to protect residents and visitors from mosquito-borne disease, and thereby enhance the quality of life and promote the economy of the Cayman Islands. The department has many years' experience in utilising integrated control to reduce the risk of local transmission of mosquito-borne diseases.

About Oxitec

Oxitec is a pioneer in using genetic engineering to control insect pests that spread disease and damage crops, and was founded in 2002 as a spinout from Oxford University (U.K.). Oxitec is a subsidiary of Intrexon Corporation (NYSE: XON), which engineers biology to help solve some of the world's biggest problems.

Press contact:	**For more information:**
MRCU Catherine MacGillivray Catherine.MacGillivray@gov.ky +345 244-1773 (office) +345 926-6110 (mobile)	www.mrcu.ky
Oxitec: Matt Warren info@oxitec.com +44 (0) 1235 832393	www.oxitec.com

Giselle Johnson and Heidi Groves take pots of genetically modified mosquitoes from the cooler to release into the wild.

Giselle Johnson and Heidi Groves, who work on the mosquito programme, open pots of genetically modified "Friendly *Aedes aegypti* mosquitoes".