Complying with New EPA Requirements for Mosquito Control

A Juniper Systems White Paper

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Contents

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Introduction

The ever growing mosquito population throughout the world continues to be a problem concerning public health. Despite being an annoyance and having a negative impact on communities, mosquitoes pose a legitimate threat to the human population by transmitting serious and harmful diseases. These diseases include several viruses, including West Nile Virus, and others, such as Dengue.

Within the United States, mosquito control programs are implemented to help reduce the negative impact of mosquitoes. Methods include, but are not limited to, adulticide, larvacide, and surveillance. Each of the aforementioned mosquito control methods utilizes pesticides to control populations. Pesticides often have detrimental effects on humans and other living organisms, resulting in many laws and regulations dictating the appropriate use of specific pesticides.

In 2006, the EPA ruled that Clean Water Act (CWA) permits were not required in order to discharge pesticides in or around water.[1] Earlier this year, that ruling was vacated, stating that pesticides are pollutants to U.S. waters. As a result, the Pesticides General Permit (PGP) was developed and is now required to be obtained by any operating entity responsible for discharging pesticides in or around water by April 10, 2011.[2]

The Challenge of Obtaining the NPDES PGP

With this new ruling in place, the EPA expects that the decreased amount of pesticides in U.S. waters and the environment will result in improved human health and conservation of the planet. Peter S.

This photo illustrates using insecticides for fogging and killing the adult mosquito. When fog-spraying is needed, it is crucial to cover as much area as possible.

[1] Environmental Protection Agency, "Final Rule on Aquatic Pesticides," United States Environmental Protection Agency, June 3, 2010, http://cfpub.epa.gov/npdes/pesticides/aquaticpesticides.cfm (accessed October 28, 2010).

[2] Environmental Protection Agency, "EPA Pesticide General Permit for Discharges from the Application of Pesticides," United States Environmental Protection Agency, May 28, 2010, http://cfpub.epa.gov/npdes/home.cfm?program_id=410 (accessed October 28, 2010).

Silva, assistant administrator for EPA's Office of Water said, "EPA believes this draft permit strikes a balance between using pesticides to control pests and protecting human health and water quality."[3]

The PGP, established under the National Pollutant Discharge Elimination System (NPDES) Program, will require all applicators to minimize the amount of pesticides discharged by using the lowest effective amount of pesticide, take necessary action to prevent leaks and spills, maintain and calibrate relevant equipment, and monitor for and report adverse incidents.[3]

By April 10, 2011, any applicator that is not covered under an NPDES permit that discharges pesticides in or near U.S. waters is in violation of the Clean Water Act (CWA). Applicators without permit coverage found in violation of the CWA will be subject to penalties of up to $37,500 per day, potential lawsuits, and other fines from associated EPA regulations.[4]

Estimations by the EPA conclude that this recent ruling "…will affect approximately 365,000 pesticide applicators nationwide that perform 5.6 million pesticide applications annually."[5]

With such a vast number of individuals and organizations being affected by the PGP, countless concerns and questions are inevitable. For a brief period of time, the EPA welcomed comments from concerned and confused individuals who will be affected by the legal ramifications of the PGP come April 2011. Common concerns center on the short amount of time available until the PGP is required to be in compliance with the CWA. Other concerns include the expense of

[3] Environmental Protection Agency, "EPA Proposes New Permit Requirements for Pesticide Discharges: Action would reduce amount of pesticides discharged and protect America's waters," United States Environmental Protection Agency, June 2, 2010, http://yosemite.epa.gov/opa/admpress.nsf/0/ 0330728F34E5807185257736004E0E8E (accessed October 28, 2010).

[4] Environmental Protection Agency, "Frequently Asked Questions on EPA's draft NPDES Pesticides General Permit (PGP)," United States Environmental Protection Agency, n.d., http://www.epa.gov/npdes/pubs/pgp_faqs.pdf (accessed October 28, 2010).

[5] Environmental Protection Agency, "EPA Pesticide General Permit for Discharges from the Application of Pesticides," United States Environmental Protection Agency, May 28, 2010, http://cfpub.epa.gov/npdes/home.cfm?program_id=410 (accessed October 28, 2010).
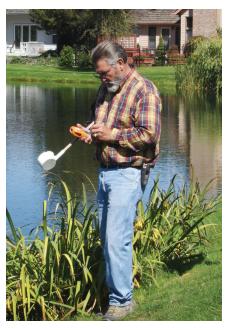
implementing the PGP into already existing programs, the vague rules and requirements in order to obtain a PGP, and the burdensome and non-productive repercussions wrought by this drastic change in regulation. Simply put, many people affected by this ruling do not have the resources or knowledge available to comply by the April 2011 deadline. The process and requirements to obtain the PGP are confusing and vague, leaving many pesticide applicators in the dark regarding something that carries a serious impact to their everyday life.

Rugged Handheld w/ Mosquito Control Software as a Solution

Even without the new PGP requirements, mosquito control data management has been moving into a new age of technology. No longer will pen and paper suffice as efficient and reliable data collection methods, especially when government regulations and penalties are looming.

Rugged handheld computers paired with mosquito control software are sure to improve the efficiency and verifiability of collected data. These mosquito

control solutions offer peace of mind by automatically including forms and functions for record keeping, mapping, and reporting, all which are required to be in compliance with the CWA. Important PGP requirements must be met by mosquito control software by featuring mapping capabilities, historical surveillance data, reporting functions, etc. The main goal of any mosquito control solution is to minimize pesticide use and optimize inspection frequency, ensuring human health safety and environmental protection.

When looking for a mosquito control solution to meet PGP requirements, it is important to keep in mind the following things:

Recommended Software Features
- The software that is chosen should be compatible with other industry standards.
- Mobile capabilities are required for on-site, real-time data collection.
- Seamless data transfer from the field to the office, and back again improves efficiency and operational costs.
- Easy-to-use GPS navigation and mapping results in fast data collection.

Recommended Handheld Features
- Be sure that the selected rugged handheld is built to IP67 standards by being waterproof and dustproof. Use in mosquito control applications guarantees contact with chemicals, water, and harsh environmental conditions.
- GPS capabilities are imperative to collect accurate and verifiable data, as well as to guide technicians to mosquito locations.

Seamless data transfer from the field to the office, and back again improves efficiency and operational costs.

By using the appropriate equipment and software with the afore-mentioned features, the ability to integrate mosquito control solutions into existing programs will ensure compliance in order to obtain a required PGP.

Archer Field PC® with Sentinel™ GIS

Juniper Systems Rugged Handhelds with Sentinel™ GIS

With the use of Juniper Systems rugged handheld computers and Sentinel™ GIS software, meeting the PGP requirements becomes a much more feasible task. The Juniper Systems Archer Field PC® and Mesa Rugged Notepad™ are both built to IP67 and MIL-STD-810 standards, ensuring unsurpassed ruggedness when it is needed most. Sentinel™ GIS software offers four different application modules to suit varying mosquito control needs, including larvicide, adulticide, surveillance, and service request. By combining the capabilities of either the Archer Field PC® or Mesa Rugged Notepad™ with Sentinel™ GIS, pesticide applicators will enjoy peace of mind knowing that this solution meets requirements enforced by the EPA.

NPDES PGP requirements met by Sentinel™ GIS:
- Locate and map mosquito breeding sources
- Utilize historical surveillance data to set action thresholds
- Optimize inspection frequency and minimize pesticide use
- Identify mosquito species targets
- Manage mosquito surveillance data and track disease
- Track environmental conditions when applying pesticide
- Provide map-based historical record of field activity/pesticide use
- Generate pesticide use, breeding source, and disease reports

For more information regarding this Sentinel™ GIS and Juniper Systems handheld solution, please contact Electronic Data Solutions at 208-324-8006, or visit www.elecdata.com.

Sentinel™ GIS is the ideal complete solution for recording and managing data critical to controlling mosquitoes. This easy-to-use package features mobile GIS solutions for mosquito control, automated synchronization between the desktop GIS and the mobile GIS, and supervisory tools making it easy for supervisors to customize and maintain their workflow processes. Applications are based on industry standard ESRI ArcGIS and ArcPad software, yet they are fully customizable for specific mosquito control needs.

Advantages of Sentinel™ GIS:
- Simple – No GIS experience needed
- Efficient – Automated data management processes for office/field
- Specific – Built solely for mosquito control activities
- Complete – Update tools, maps, database, and reports
- Standard – Built upon ESRI GIS/Mapping technology
- Economical – One-time purchase maximizes return on investment

The Mesa Rugged Notepad™, designed and manufactured by Juniper Systems of Logan, UT, is the first of its kind, offering unparalleled screen real estate with 5.7 inches of active viewing display. The Mesa Geo model comes with 2-5 meter GPS accuracy, as well as a 3.2MP digital camera. The Mesa Geo 3G model includes a 3G data modem in addition to GPS and digital camera. A vehicle mounting dock is also offered for mobile docking needs. The Archer Field PC® is the epitome of an ultra-rugged, compact handheld. Its

Mesa Rugged Notepad™ Geo 3G Model

long battery life, sunlight readable display, and operation in extreme conditions qualifies it as the perfect solution for everything rugged. Wireless and integrated GPS options are available on the Archer. For more information on these rugged handheld computers, please visit www.junipersys.com, or call 435-753-1881.

Conclusion

For pesticide applicators feeling unsure on how to meet the recent regulations and PGP requirements, no other solution delivers compliance like the Sentinel™ GIS software with a Juniper rugged handheld. Sentinel™ GIS, paired with either the Mesa or Archer, is sure to improve the efficiency and verifiability of mosquito control data. By providing forms and functions for record keeping, mapping, and reporting, this solution makes obtaining a Pesticide General Permit by April 10, 2011 quick, easy, and economical.