January 12, 2022

To: Don Hall
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Division of Water Quality
Utah Department of Environmental Quality

Utah Physicians for a Healthy Environment (UPHE) and other environmental groups have been concerned about the inappropriate use of pesticides by the state's mosquito abatement districts, Salt Lake City Mosquito Abatement District (SLCMAD) in particular, since we found out about their request to involve the US Air Force last year. In investigating that request, and SLCMAD's Environmental Assessment for that request, UPHE learned for the first time that for many years SLCMAD has engaged in yearly, repeated, widespread aerial spraying of pesticides over approximately 160,000 acres in the Northwest Quadrant of SLC. UPHE subsequently developed an extensive, heavily referenced report that concluded there are multiple reasons why SLCMAD's use of pesticides, especially aerial sprayed pesticides, is extremely poor public policy. That report is attached, and we ask that the relevant staff of the Utah Division of Water Quality and Utah Water Quality Board read the report before reissuing the Pesticide General Permit for mosquito districts. Though the general permit is applicable state wide its application to SLCMAD is arbitrary and capricious, and as it relates to this district, the permit should be terminated.

Furthermore, after investigating the requirements of the permit and SLCMAD's compliance with the permit, we have found reason for requesting that UDWQ deny a reissuance of that permit as per the information below. Pesticides are toxic chemicals universally recognized as public health, wildlife, and ecological hazards, but the decision as to whether widespread pesticide spraying in the state is justified or not is being made by people with virtually no expertise or qualifications in the issue. SLCMAD's director establishes the agency's strategy which is routinely rubber stamped by their board, who also have no real expertise in the matter particularly as it relates to public health and the environment. The director's expertise is limited to entomology which is hardly the same as expertise in public health, environmental toxins, or the connection between the two. The same lack of expertise characterizes the other mosquito districts in the state.

We invite the Division of Water Quality (DWQ) to exercise its expertise and fulfill its duty to protect the state's waters that are continually polluted by toxic pesticides. Importantly, this pollution occurs outside of the parameters and requirements of the General Water Quality permit drafted and enforced by DWQ. Also critical, is the fact that DWQ recognizes SLCMAD's failures to protect water quality and comply with the permit given your August 2019 letter from DWQ director Erica Gaddis. More detail on these failures is described below.

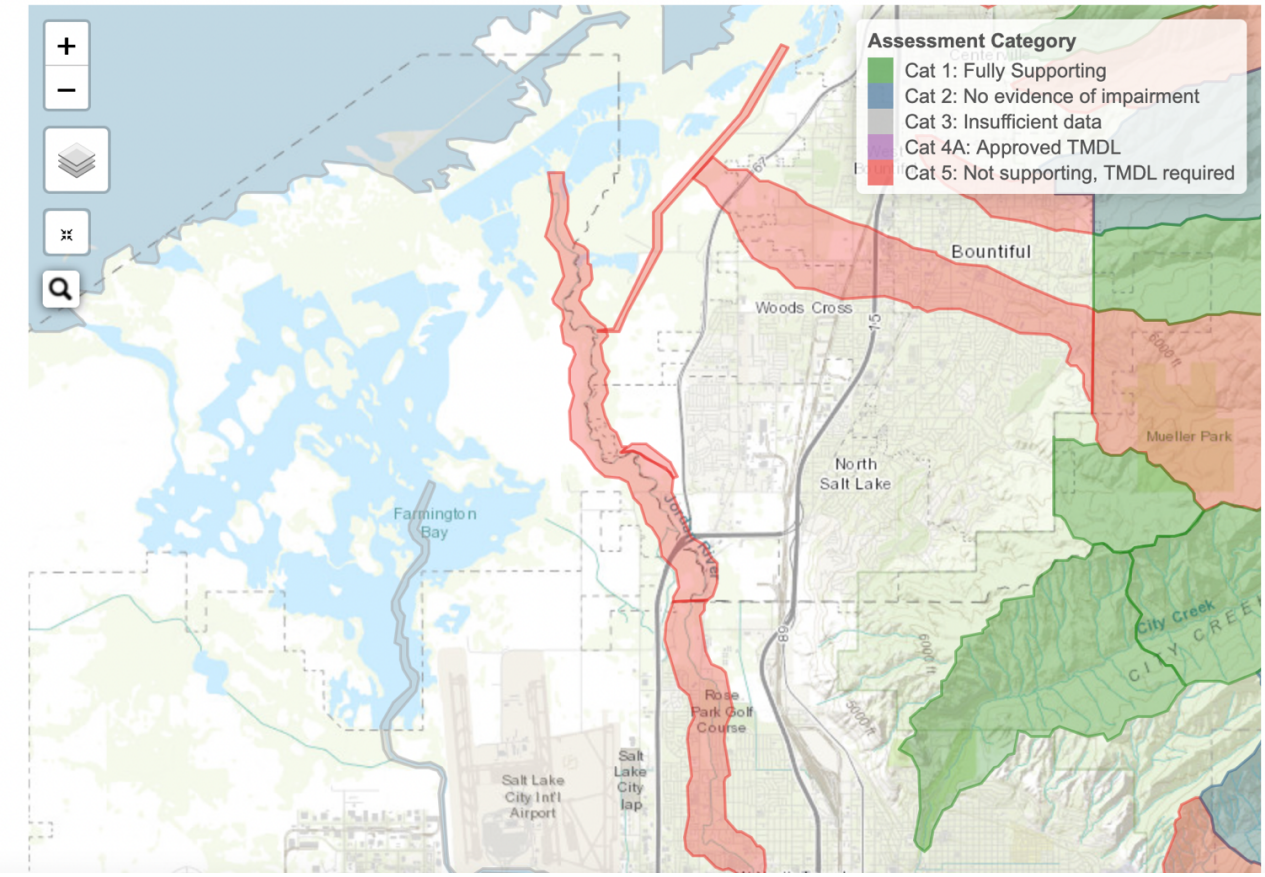
SLCMAD's Compliance with General Permit under the Clean Water Act for Pesticide Discharge into waters of the state.

Currently mosquito abatement activities that discharge pesticides into waters of the state of Utah are governed under a 2016 General Permit under the Clean Water Act. It applies to operators who discharge biologic or chemical pesticides to surface waters of the state for mosquito abatement. The mosquito control activities could be present at near standing or flowing surface water. To receive coverage under this permit the operator must submit a *Notice of Intent*. Mosquito Abatement Districts fall under operator group 2 as a government or quasi government agency that discharge pesticides as a significant part of their activities. Within each NOI they must describe the area and watershed where the discharge is to occur. In this case the NOIs generally include a map with this information.

Water Quality Standards

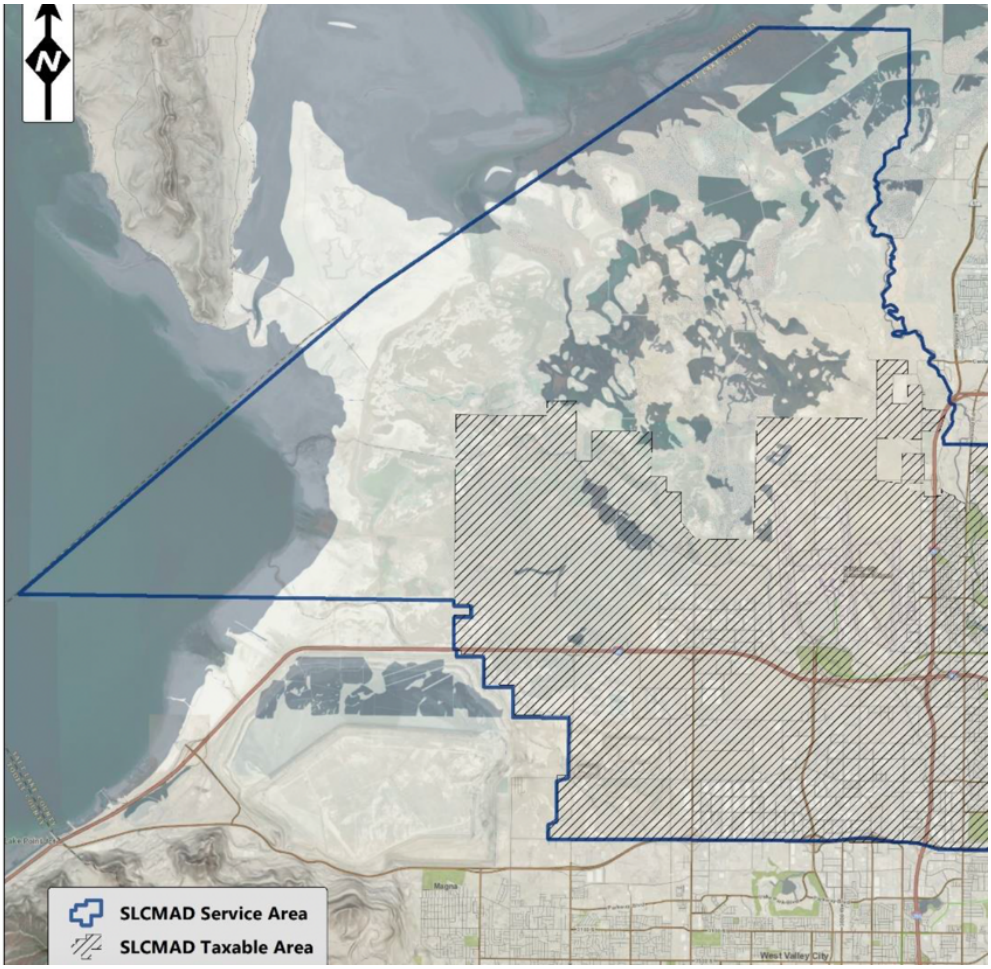
The permit does not permit pesticide discharges in areas that are considered "impaired" under section 303(d) (aka total maximum daily load TMDL) of the Clean Water Act. The TMDL list must be updated by the state every two years and is based on the maximum amount of water pollution that can enter a waterbody and still meet water quality standards. Below is the Jordan River TMDL map and boundary which is presumably an area that is sprayed for mosquitos in violation of the permit.

> Impaired Waters Requirements. Discharges to pesticide impaired waters are not allowed, whether or not an operator is permitted. The permit does not provide coverage for any discharges from a pesticide application to waters of the State if the water is identified as impaired by that pesticide or its degrades. For purposes of the permit, impaired waters are those that have been identified pursuant to Section 303(d) of the CWA as not meeting applicable State water quality standards. Impaired waters for the purposes of this permit include both waters with DWQ approved or EPA-established Total Maximum Daily Loads (TMDLs) and waters for which DWQ has not yet approved or established a TMDL.



The district distinguishes between the taxable and “service area”, but clearly, they “service” in areas that are impaired including the Jordan River area and most likely the Sessions Mountains/Woods Cross/Bountiful area also has a TMDL section.

ix 2 – Map of SLCMAD and Area of Control.



Such impaired waters don't meet applicable water quality standards and have either been approved for the TMDL list or they have been identified as eligible for listing, but the TMDL has not been established /approved. Such a water quality impaired waterbody exists in the area that SLCMAD sprays for mosquitos. Based on the attached map the Jordan River is impaired all along its south to north orientation past the SLC airport, Farmington Bay until it terminates into the GSL.

Also critical under the permit is compliance with the objective quantitative water quality standards and more subjective narrative water quality standards that may apply. The narrative standard requires avoidance of discharge where there may be harm to aquatic organisms or undesirable human health effects as determined by bioassay or other tests. The Great Salt Lake is a class 5 waterbody under state WQS. However certain other areas are class 2 or 3 above 4,200 feet and *Farmington Bay Waterfowl Management Area*. Also surface water in wetlands shall be protected from changes in pH and dissolved oxygen that create significant adverse

impacts to the existing beneficial uses. Discussion of water quality standards, of either kind, isn't included in any of the GRAMA responses that we received from SLCMAD.

These water quality requirements also relate to the monitoring requirements of the permit whereby the amount of pesticide must be the lowest effective quantity for pest control. In SLCMAD's 2021 EA they acknowledged that, "In many instances, the numbers of mosquitoes collected in some of the traps do not decrease after aerial ULV adulticide operations are conducted." In other words, SLCMAD acknowledges pesticide spraying is not an effective control strategy.

The general permit requires an entity to spot check for any incidents to wildlife. Here, SLCMAD only states that their contractor, VCT, "attempts" to inspect larval species weekly, but no indication that they comply with the lowest effective quantity, or that they perform the required visual monitoring.

Pesticide Discharge Management Plan (PDMP)

Once an entity submits a Notice of Intent (NOI) to discharge pesticides under the general permit it must submit a PDMP. The primary goal of this document is to demonstrate how the permittee will implement the pollution limits of the permit and describe what control measures will help meet these limits. However, the PDMP does not contain any discussion whatsoever about pollution limits. Furthermore, there is no mention at all concerning effluent limits.

> Water Quality-Based Effluent Limitations: In addition to technology based effluent limitations, operators must follow water quality-based effluent limitations. Operators must control applications as needed to comply with the state's water quality standards and FIFRA. If at any time the operator or DWQ determines that the application or discharge violates water quality

Though other aspects of the plan are present, the primary aspect of the PDMP is control and prevention of pesticide related deterioration of water quality through effluent limits. The plan is completely lacking in this respect.

Integrated Pest Management Shortcomings

Consistent with the permit's goal of limitation of pesticides only when all other non-chemical methods have failed is that mosquito abatement districts utilize *Integrated Pest Management*. The PDMP describes *Integrated Mosquito Management* as a program that utilizes all available treatment options to reduce mosquito populations while maintaining a quality environment. The program is designed to utilize extensive monitoring and surveillance of target mosquitos, establishment of larval/mosquito densities to determine a baseline, identify known breeding sites, and perhaps most critical to implement efficient methods that reduce the discharge of pesticides. This is a recognition of the fact that pesticides are a public health and environmental threat, and so other non-chemical methods are to be prioritized.

For instance, under the permit, from least environmentally harmful to most environmentally damaging, the permit obligates a permittee to investigate methods in the following order:

1. no action
2. prevention
3. physical methods
4. cultural methods
5. biological control, and only last are
6. pesticides

The only real comprehensive report on the topics contained within the permit that we received include the 30-page PDMP described above. In the PDMP, instead of discussion of these aspects from the permit they instead consider methods such as education and public outreach, news media, website, and no treatment zones as other non-chemical methods of mosquito management. While these are laudable and noteworthy aspects of mosquito control, they aren't consistent with the permit, and they ignore the other methods cited above that are ignored by SLCMAD.

Consistent with the permit they do indicate that they utilize physical controls indicating they are economic and effective but may not be practical in larval habitats. Though these methods are shown to be effective there is no discussion as to how extensive and widespread these methods are utilized by SLCMAD. The report also indicates that biological controls, cited in the permit, are utilized such as the 1,300 ornamental ponds in the city and are stocked with mosquito eating fish such as *Western mosquitofish*. They tout the hardiness of the species and that they need to be replaced every year since they only can live in artificial water bodies. Unfortunately, in contradiction to the permit, the preferred control measures: no action, prevention, and cultural methods are not discussed at all, and most troublesome is that the chemical/pesticide methods are overutilized and overemphasized in their control program including larvicides and especially adulticides.

Also, under the permit, before the first pesticide application and annually the applicator must establish larval and adult mosquito densities to serve as a baseline for integrated pest management (IPM). Although the district uses monitoring and trapping of different mosquito species, they don't appear to gather baseline numbers and admit they only "strive" to utilize IPM. The permit directs the mosquito district to identify target species to develop specific strategies based on the developmental and behavior of the species. They must also identify known breeding sites for source reduction. The primary document identifies the primary target species but doesn't articulate what the specific strategies include for each species.

Relatedly, the permit requires that when pesticides are ultimately utilized that the permittee must conduct larval/adult surveillance **before** each application to determine the pest management area and determine the action threshold. Surveillance activities occur through larval sample collection and adult collection of three types of traps in many different areas.

They update maps of mosquito producing areas annually, but there is no indication that they conduct specific surveillance prior to each application for purposes of the pest management area. Additionally, the permit requires reduction of environmental impact by application only when the action threshold is met. For larval and adult applications there are at least 4 to 5 scenarios that may trigger a threshold for treatment, which creates many situations where chemical treatments can be utilized instead of one consistent action threshold. SLCMAD concedes that action thresholds vary based on a variety of factors such as location and time of season. SLCMAD also concedes that their thresholds for invoking pesticides may be solely to target nuisance mosquitoes rather than limiting their use to species that carry disease.

All mosquito districts that fall under this general permit are required to submit an NOI and **must** utilize IPM.

> Integrated Pest Management (IPM) Practices: IPMs are applicable to any entity that is required to submit an NOI, including any pesticide applicator hired by such entity or any other employee, contractor, subcontractor or other agent must use integrated pests management practices. IPMs in the permit are measures required to meet the effluent limits for each pesticide use category. IPMs include the following: 1) identifying and assessing the pest problem and potential; 2) assessing effective pest management considering different options to manage pests and protect water quality; and 3) implementing specified procedures and practices for applying pesticides.

Despite this requirement, in their PDMP, SLCMAD only states that "they strive" to use integrated mosquito management to the extent possible.

> elimination or eradication.
>
> IMM requires careful inspection and monitoring for the presence of mosquitoes and conditions favoring their development; and prevention of oviposition and human/mosquito contact through effective public education, sanitation and facility maintenance. The SLCMAD strives to employ these IMM components to the extent possible. In the SLCMAD IMM program,

In their GRAMA, they submitted materials and reports on this general topic, but there's no indication within the district's own materials that they adhere and follow IPM's core aspects.

Documentation of SLCMAD's adherence to an IPM strategy is not satisfied by their comment that they "strive" to use it. In particular, they have demonstrated an ongoing commitment to repeated, widespread, aerial spraying of the most toxic type of pesticides available, organophosphate adulticides, regardless of the public health circumstances that might or might not justify it, such as an epidemic of a mosquito borne disease like West Nile Virus. SLCMAD recently invoked an increased tax levy on property owners, reflecting an intent to purchase a helicopter and construct a hangar requiring millions of dollars. This is evidence of a baseline, future commitment to extensive, a priori pesticide use, irrespective of monitoring or disease prevalence, which contradict the principles of IPM.

An example of that a priori strategy occurred in 2020, when there were only 2 confirmed WNV cases in the entire state, yet SLCMAD and other districts conducted their routine pesticide spraying. In SLCMAD's case that included 160,000 acres aerially sprayed in the Northwest Quadrant of SLC. Mosquito abatement districts in other states such as Colorado and Wisconsin have developed effective mosquito control strategies without the use of chemical pesticides, yet SLCMAD has demonstrated no interest or even curiosity in investigating those strategies, another contradiction of a IPM strategy and violation of the permit.

Monitoring, Annual Reports, and Records

In line with the permit's goals to limit water pollution is a monitoring requirement to prove that the lowest amount of pesticide is utilized are monitoring requirements such as spot checks. This visual monitoring, or spot checks helps ensure that there are no unintended consequences or other species as a result of the pesticide applications. Record keeping of unexpected impacts to non-target organisms and evidence of visual monitoring must be kept but is not present. Other required recordkeeping includes correspondence between the applicator and the DWQ concerning permit coverage. Here, we don't see any relevant records. Lastly, large applicators, over 75,000 acres must submit an annual report. We didn't receive any of these reports that are to indicate adverse incidents, treatment area information, and corrective activities.

Permit Compliance

A permittee must comply with all conditions and any violation is to result in enforcement, permit termination, revocation, or denial of a permit renewal application. Violation of a permit condition is subject to civil penalty of $10,000 a day or if they knowingly violate the permit may be subject to a fine not more than $50,000 a day.

A. Duty to Comply.
The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions.
The Act provides that any person who violates a permit condition implementing provisions of the Act is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person guilty of a third degree felony who knowingly violates permit conditions of the Act may be subject to a fine not exceeding $50,000 per day of violation. Except as provided at Part III.G, Adverse Incident Documentation and Reporting, Part III.L Upset Conditions, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

Though the Utah Department of Water Quality was responding to deficiencies in permit compliance with respect to a 2019 EA the same violations apply to SLCMAD's programmatic activities as would have occurred under a proposed action with the Air Force studied in the EA. Clearly, the district is in violation of the permit in a number of different ways.

There is virtually no justification for SLCMAD's extensive, routine use of mosquito abatement pesticides from the standpoint public health protection. The case is strong that in fact their strategy causes much more public harm than public benefit. While we don't expect the UDWQ and the Water Quality board to be the final arbiter of that issue, we ask that they deny a reissuance of the general pesticide permit as it is applied to SLCMAD based on the evidence of their violation of the existing one.

Sincerely,
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