



[UNLEASHING THE POWER OF GREEN]



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COMMENTS ON DRAFT GENERAL PERMIT FOR 401 WATER QUALITY CERTIFICATION: OIL
AND GAS EXPLORATION AND PRODUCTION WELLS AND ATTENDANT FEATURES

The Ohio Environmental Council, the Buckeye Forest Council, the Sierra Club, and the Center for Health, Environment & Justice submit the following comments to the Ohio EPA Division of Surface Water regarding the Draft General Permit for 401 Water Quality Certification for Oil and Gas wells. We thank Ohio EPA for this opportunity to submit comments, and hope that our comments are helpful to the agency as it finalizes this important General Permit.

INTRODUCTION

Healthy wetlands provide many benefits to our communities that are impossible to reliably replicate with other infrastructure. They minimize stream down cutting and bank erosion. They act as natural flood controls by containing excess flood water and releasing it slowly. Thus, detrimental flooding is more common in areas without wetlands. By reducing flooding, wetlands save wear-and-tear on basements, yards and streets, which in turn saves our economy from the loss of work days and

property damage. Wetlands also clean water by filtering out pollutants and absorbing nutrients, leaving the water cleaner for innumerable downstream uses. Furthermore, wetlands provide habitat for thousands of plants and animals, including critical habitat for a number of threatened and endangered species. This translates into education and recreation opportunities for Ohio's citizens. When wetlands are impacted, these flora and fauna are impacted as well.

Ohio has lost more than 90% of its original wetlands, and the remaining 10% deserve protection. Ohio EPA's 2010 study of mitigation banks revealed that Ohio's replacement wetlands have not been able to effectively replace the functions of the lost natural wetlands, even when mitigation ratios of greater than 1:1 are taken into account. To add insult to injury, some of the mitigated wetlands were built several counties away from the original impact.

Left unchecked, the coming deep shale drilling boom could fill in or dry out a large percentage of our remaining streams and wetlands. Thus, it is essential that Ohio EPA's 401 permitting process is able to effectively protect our natural resources. We thank you for providing this opportunity to comment on the Draft General Permit, and we look forward to working with you further to ensure that Ohio continues to benefit from the ecological services provided by wetlands well into the future.

At the outset, we would like to support Ohio EPA's decision not to allow impacts to Category 3 wetlands in the Draft General Permit. We strongly encourage EPA to include this same requirement in the final General Permit, because these increasingly rare wild areas provide important functions that are almost impossible to replace through mitigation. We encourage Ohio EPA to prohibit impacts to high-functioning category 2 wetlands as well, as they provide functions that are exceedingly difficult to replace through mitigation.

On behalf of our members, we would like to present the following comments, along with five recommendations that we feel would strengthen protections of our few remaining wetlands without imposing undue costs on industry.

COMMENTS

I. The General Permit must emphasize the avoidance and minimization of impacts to wetlands over mitigation for both legal and practical reasons.

On its face, the Draft General Permit does not seem to prioritize the avoidance and minimization of harms to wetlands over mitigation. As long as the applicant "describes avoidance and minimization measures that were undertaken," the Draft General Permit seems prepared to allow impacts and mitigation.¹ Thus, the Draft General Permit suggests that, as long as an applicant has at least done *something* to avoid and/or minimize impacts, it will be approved to impact and mitigate up to 0.5 acres.

This type of permitting structure might be permissible if mitigation could be shown to be a practically effective and legally permissible means to maintain the functionality of our wetlands. However, Ohio EPA found extremely discouraging results when it studied the effectiveness of wetland

¹ Draft General Permit § II(I), at page 5.

² Mack, J.J and M. Micacchion. 2006. *An ecological assessment of Ohio mitigation banks: Vegetation*,

mitigation in Ohio in 2006² and again in 2010.³ And, practical considerations aside, the Ohio Administrative Code requires that avoidance and minimization of impacts be prioritized ahead of mitigation. We therefore provide the following recommendation, and discuss our reasoning more thoroughly below.

Recommendation #1: The final version of the General Permit must require applicants to make a rigorous showing that they are avoiding impacts to the maximum extent practicable. This showing should include an evaluation of potential avoidance and minimization options, along with an explanation of why the proposed project is preferable to the alternatives. One possible criterion could be to require a showing that there are no other feasible drill sites within a one mile radius of the wetland. Given that horizontal fracturing wells are able to access resources over a mile from the well head, it should typically be practical and feasible for drillers to arrange their well heads so as to avoid impacts to wetlands. Once a showing of impracticability is made, the General permit must require as much minimization of impacts as is feasible. Only then can the Permit allow an applicant to impact and mitigate. See OAC § 3745-1-54(D)(4); OAC § 37451-50(W); OAC § 3745-1-50(F), discussed *infra*.

A. Avoidance and minimization must be preferred to mitigation because Ohio’s mitigation bank projects have a very high failure rate.

By giving relatively cursory consideration to avoidance and mitigation, the Draft General Permit places a great deal of confidence in mitigation as a means of preserving the essential functions of our wetlands. This confidence seems somewhat misguided in light of Ohio EPA’s evaluations of Ohio’s mitigation programs. The most recent study took place in 2010; it evaluated 26 randomly selected mitigation projects and found, based on the plant and animal life present at the sites, that “61.5% (16 sites) are considered failures, 15.38% (4 sites) are considered potential successes and 23.08% (6 sites) are considered successes.”⁴

The study noted that “[m]any studies of mitigation wetlands have reported that for various reasons they provide a reduced level of functions and services and/or have a lower ecological condition than natural wetlands of the same type or class.”⁵ Specifically, regarding the vegetation present in mitigation wetlands, the study found that “only 5 of these [26] mitigation wetlands (19.2%) fell into the ‘Wetland Habitat’ (WLH) proposed wetland tiered aquatic life use,” which is generally a minimum required performance standard for EPA-authorized mitigation banks⁶ The evaluations for amphibian life were even worse. The study found that 23 of the 26 mitigation wetlands studies were in the “poor” range for amphibian life.⁷ That is an 88% rate of failure for protecting our fragile wildlife biodiversity.

² Mack, J.J and M. Micacchion. 2006. *An ecological assessment of Ohio mitigation banks: Vegetation, Amphibians, Hydrology, and Soils. Ohio EPA Technical Report WET/2006-1.* Ohio Environmental Protection Agency, Division of Surface Water, Wetland Ecology Group, Columbus, Ohio

³ Micacchion, Mick, Brian D. Gara, and John J. Mack. 2010. *Assessment of wetland mitigation projects in Ohio. Volume I: An Ecological Assessment of Ohio Individual Wetland Mitigation Projects. Ohio EPA Technical Report WET/2010-1A.* Ohio Environmental Protection Agency, Wetland Ecology Group, Division of Surface Water, Groveport, Ohio,

⁴ *Id.* at xi

⁵ *Id.* at 1

⁶ *Id.* at 6

⁷ *Id.* at 9

Less than 20% of mitigation wetlands are meeting Ohio EPA's requirements for aquatic vegetation, only 12% are living up to the promise of protective biodiversity. Over 60% are considered out-and-out failures with little-to-no chance of being rehabilitated into successes, and the jury is out on another 15%, some of which may become failures down the line.⁸ These are not the kinds of success rates that should encourage Ohio EPA to go forward treating mitigation as a readily acceptable alternative to avoidance and minimization of impacts. We therefore advise, encourage, and implore Ohio EPA to require a rigorous showing that avoidance of impacts is not possible, and then require all reasonable minimization efforts, before permitting mitigation under the General Permit, as per our first recommendation, listed above.

B. The Ohio Administrative Code requires that avoidance and minimization must be exhausted before impact and mitigation are allowed.

The Draft General Permit does not mention the Administrative Code's requirement that an applicant must avoid or minimize impacts to wetlands to the maximum extent practicable. In fact, the Draft General Permit's only requirement concerning avoidance and minimization is that the applicant must "describe avoidance and minimization measures taken."⁹ Therefore, on its face the Draft General Permit contemplates that applicants who meet these minimal disclosure requirements will be authorized to impact jurisdictional wetlands and streams. On its face, there is no indication that alternatives will be analyzed and that the alternatives with the least impact should be preferred to those with the most, as long as the impacted area is less than half an acre.

This approach flatly contradicts the very specific analytic approach that the Ohio Administrative Code requires EPA to follow when evaluating a proposal to impact a wetland. Impacts to Ohio's wetlands may not be permitted unless "[t]here is no practicable alternative which would have less adverse impact on the wetland ecosystem".¹⁰ Further, OAC § 3745-1-45(c) states that avoidance is "the first step in the alternatives analysis" during which "the applicant must demonstrate that alternatives which fulfill the basic project purpose and have less impacts to the wetland are not practicable, so long as the alternative does not have other significant adverse environmental consequences." Only once it is determined that avoidance is impracticable can the analysis proceed to "minimization."¹¹ The Administrative Code explicitly states that the possibility of mitigation is only available "for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization have been achieved."¹² The Administrative Code explicitly states that these provisions apply to § 401 concurrence determinations such as those at issue in the draft general permit.¹³

The OAC imposes a particular framework for analyzing alternatives when an applicant proposes to impact wetlands. Specifically, the final version of the General Permit must require a full and detailed

⁸ *Id.* at xi

⁹ Draft General Permit § II(I), at page 5.

¹⁰ OAC § 3745-1-54(D)(4)

¹¹ OAC § 37451-50(W)

¹² OAC § 3745-1-50(F)

¹³ OAC § 3745-1-54(D)(4) (included comment)

analysis of avoidance and minimization possibilities. The directive of OAC § 3745-1-55 to require avoidance unless “[t]here is no practicable alternative which would have less adverse impact on the wetland ecosystem” can only be satisfied if EPA thoroughly evaluates other alternatives before allowing an applicant to undertake mitigation for permitted impacts, as per our recommendations above.

II. The General Permit should be modified to reduce the potential for drillers to unknowingly impact wetlands and increase coordination with county and local authorities.

We are concerned with the possibility that a drilling company might not know that it is impacting a wetland, and therefore might impact a wetland without even applying for coverage under a General Permit. Many wetlands are too shallow to appear on the National Wetland Inventory, the Army Corps of Engineer’s map of jurisdictional wetlands, or other such maps. In particular, vernal pools are usually less than two feet deep and often occupy less than half an acre in area. They are only filled with water seasonally, and so they are difficult for the untrained eye to notice for much of the year. Even when they have water in them, an applicant who is not specifically knowledgeable about vernal pools might think that they are just puddles and fill them in without ever realizing that the vernal pool is a wetland.

Despite their small size, vernal provide critical habitat to thousands of species. Some species of amphibians and macroinvertebrates require vernal pools for all or part of their life cycle. EPA has observed that “the replacement of ecological services provided by . . . vernal pools are rarely targeted as a component of wetland mitigation.”¹⁴ As such, “Ohio continues to experience a net loss of amphibian habitat, even if the overall amount of wetland acreage has been stabilized via the regulation of water resource impacts.”¹⁵

One way to find out a lot of information about local streams, wetlands, and flood plains is to contact local authorities such as the Soil and Water Conservation District and floodplain managers. Under the current system, these local authorities are not informed about new oil and gas operations that create the kinds of impacts that might otherwise fall under their jurisdiction. These authorities should be included in this process for two reasons. First, including them would allow Ohio EPA to gain the benefit of their knowledge of local wetlands, streams, and floodplains. Second, such notification would inform local authorities about important activities in their area so that they do not inadvertently also permit activities that are incompatible with the activities that Ohio EPA is permitting, either because the activities interfere with each other or because they represent cumulative impacts that neither agency was expecting when the approvals were issued.

Recommendation #2 (a): EPA should make sure that impacts to wetlands are being assessed properly. Applicants should be required to check not only the national wetland inventories, but also the state’s Potential Vernal Pool Restoration Sites, available at <http://wwwapp.epa.ohio.gov/dsw/gis/vernal/>.

¹⁴ Gara, B. D. and M. Micacchion. 2010. *Assessment of wetland mitigation projects in Ohio. Volume 2: Developing a GIS-based tool to optimize vernal pool wetland mitigation site selection. Ohio EPA Technical Report WET/2010-1B.* Ohio Environmental Protection Agency, Wetland Ecology Group, Division of Surface Water, Columbus, Ohio at pg. viii.

¹⁵ *Id.*

Recommendation #2(b): The final General Permit should require any impacts to vernal pools that are permitted (after avoidance and minimization) to be mitigated with new vernal pools, so that Ohio does not continue to lose its amphibian habitat.

Recommendation #2(c): Section 2(L) of the Draft General Permit should be modified to require documentation that relevant local agencies responsible for wetlands and flood plain (such as land trusts, and soil and water conservation districts about the application) have been notified of the application. For example, the applicant could include a copy of a public notice published in an appropriate local newspaper that a request for a permit has been made to the US Army Corps of Engineers and Ohio EPA. This notice should be in addition to any notice issues by the Army Corps.

III. EPA should minimize the potential for water withdrawals to impact wetlands or streams by drying them out.

The Draft General Permit does not impose any requirements relating to the applicant's water source. Some applicants might interpret this omission as permission to use the wetlands, stream, or its source waters as a source for the withdrawals. But, as EPA knows, each deep shale well can use 2–5 million gallons of water. If such large withdrawals are not carefully managed, they could change the water table in a way that would impact not just 0.5 acres of wetland and 300 feet of stream, but any streams or wetlands in a much larger surrounding area.

Recommendation #3: The final General Permit should expressly prohibit water withdrawals that might affect a wetland or stream. One way to put such a requirement into action would be to require the applicant to disclose its proposed water sources and to work with EPA to make sure that the proposed water usages will not impact the wetland or stream. The Permit should also require operations to cease if the stream or wetland's water level is visibly impacted.¹⁶

IV. The General Permit should address scope and aggregation issues

Aggregation issues often raise difficult questions in environmental regulation, but they are nonetheless important issues that must be dealt with. We have two concerns relating to scope and aggregation in this Draft General Permit.

The first issue comes up when an applicant is approved under the General Permit, but later seeks to expand. Section II(I) of the Draft General Permit requires an applicant to submit its rationale as to “why the project should be considered as a single and complete project.” This is a good requirement, but we are concerned about the type of circumstance in which an applicant starts a project that qualifies for a General Permit by impacting, say, 0.4 acres but then, a number of years later, wishes to expand its operation in a way that would impact another 0.4 acres of the same wetland. While the Draft General

¹⁶ Ohio EPA has jurisdiction to regulate water withdrawals, among other indirect impacts to wetlands, under OAC §§ 3745-1-50(U), 3745-1-54(B)(1), 3745-1-54(B)(5), and 3745-1-54(D).

Permit seems to prohibit such an expansion,¹⁷ we would request a minor clarification to make explicit that later work on the pad cannot expand the cumulative total impact past 0.5 acres under the General Permit.

Similarly, an aggregation issue will come up when a drilling company decides that, instead of establishing one well pad that would impact, for example, 0.6 acres of a wetland, it will build two well pads and spread them out so that each impacts 0.3 acres. The single large pad would not qualify for a General Permit, but the two pads would each qualify, even though separating the pads that way would probably present more harm overall in terms of emissions, risk of accidents, etc.

We suggest that the General Permit should evaluate impacts on a wetland-by-wetland basis. Thus, no more than 0.5 acres of impact to any given wetland would qualify for a General Permit. Once any applicant had impacted 0.5 acres of a given wetland, no more proposed impacts to that wetland from the oil and gas sector would qualify for the general permit.

This approach is workable in Ohio because our wetlands are small enough that the requirement's actual impact on industry's array of available siting options would be far smaller than it might seem at first glance. Ohio's largest wetland is Magee Marsh, which covers 2,200 acres.¹⁸ At first glance, 2,200 acres might seem like a large area across which to limit impacts under the General Permit to only 0.5 acres. However, it is important to remember that a deep shale well can extract underground gas that is over a mile away from the well head. 2,200 acres is only 3.4 square miles. The Magee Marsh Wildlife Area never stretches for even one mile from north to south.¹⁹ Given that horizontal fracturing wells can exploit resources that are over a mile away from the well head, if Ohio's largest wetland were located directly over a rich natural gas reserve, the entire resource could be exploited without the need to fill in *any* of the wetland to build the well pad. Thus, there is no need to allow, through the *general* permitting process, impacts of more than 0.5 acres to any single wetland.

This approach would also solve both of our scoping and aggregation concerns.

Recommendation #4(a): The final General Permit should not be available to applicants who propose to impact a wetland when the proposed activity would cause the total cumulative impact to that wetland from oil and gas drilling to exceed 0.5 acres. The baseline for measuring the cumulative total impact to wetlands could be the condition of the wetlands as of the effective date of the General Permit. Ohio EPA could maintain an up-to-date spreadsheet listing all of Ohio's wetlands and their cumulative impacts from oil and gas drilling so far. This information could be made available to potential applicants and also to the public on the Ohio EPA website.

Recommendation #4(b): We also request a minor clarification in § I(C) of the Draft General Permit to indicate that the General Permit's impact limitations are meant as caps to the total cumulative over the life of the project.

¹⁷ See Draft General Permit §I(A) and I(C)

¹⁸ Ohio DNR, *Magee Marsh Wildlife Area*, available at” <http://www.dnr.state.oh.us/tabid/19778/default.aspx>

¹⁹ Map available at <http://www.dnr.state.oh.us/Portals/9/Images/hunting/Wildlife%20Area%20Maps/pub045.gif>

V. **We urge EPA and DNR to work together to monitor well sites that are in or near wetlands and streams.**

The General Permit does not spell out what monitoring will take place when an applicant begins drilling in or near a wetland or stream. Streams and wetlands are sensitive ecosystems and can be adversely impacted by a discharge or spillage or berm failure, for example, that might seem insignificant to a construction or operation team that is accustomed to working in areas that are not as sensitive. Thus, we are concerned that wetlands and streams will be inadvertently impacted in ways that the applicant might not even notice.

Recommendation #5: We urge EPA to work with DNR to advise operators and construction teams to ensure that they understand the sensitivity and importance of streams and wetlands. We also encourage the agencies to monitor all sites that impact wetlands to ensure that all proper procedures are being followed.

CONCLUSION

Thank you again for this opportunity to comment on the Draft General Permit. We appreciate Ohio EPA's continuing efforts to protect Ohio's streams and wetlands, and we the agency will consider our comments in drafting the final General Permit.

The undersigned parties request a written response.

Sincerely,

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