

Determining Natural Background Conditions

Introduction

The information below provides guidance on how to determine natural background conditions to comply with the 1200-Z and 1200-A industrial stormwater permits issued by the Oregon Department of Environmental Quality. DEQ has adapted U.S. Environmental Protection Agency requirements to develop its permits.

What are natural conditions?

Natural conditions are those that aren't caused by humans and can alter a waterway's physical, biological or chemical makeup. For instance, wildfires, floods, earthquakes, volcanic or geothermal activity, wind, insect infestation, and diseased vegetation are all considered natural conditions.

What are natural background pollutants?

The U.S. Environmental Protection Agency defines natural background pollutants as substances that naturally occur in soils or groundwater. Natural background pollutants do not include pollutants from earlier activity on the site, or pollutants from neighboring sources that are not naturally occurring.

When is use of natural conditions appropriate?

If a permit holder considers sampling exceedances are solely attributed to the presence of pollutants in natural background and not associated with industrial activities a natural background waiver report may be submitted. For example, high naturally occurring levels of iron in soils or groundwater could cause a permit holder to exceed a benchmark value. DEQ allows permit holders to justify benchmark exceedances in stormwater based on local natural background concentrations; however, precise processes must be followed. If the elevated pollutant loading is in any way related to human-influenced activities, a natural background waiver does not apply.

This provision for establishing natural background levels cannot be used to demonstrate compliance with effluent limitation guidelines.

What information do the permits require?

To ensure the request for a natural background waiver from Tier II or from continued monitoring requirements meet the permit requirements the report must include:

- Investigation and analysis used to demonstrate that exceedance are due only to natural background
- Data and peer-reviewed literature studies that tie the presence of the pollutant causing the exceedance in the discharge to natural background sources in the watershed

What information is required in the explanation?

The explanation must include any data previously collected by the facility staff or others that describe the levels of natural background pollutants in the receiving waters. The permit holder must establish background concentration of a pollutant in runoff from a non-human impacted reference site in the same watershed. The report must provide a summary that justifies the determination including:

- A map showing the reference site in relation to the facility and elevation
- Available geology and soil information for reference and sampling sites
- Photographs showing available land cover information and site vegetation
- Site reconnaissance survey data regarding presence of roads, outfalls, or other human-made structures
- Records from relevant state or federal agencies indicating no known mining, forestry, or other human activities upstream of the proposed reference site during the time the record collection occurred
- Monitoring data
- Information from peer-reviewed publications
- Data from a local, state, or federal government publication specific to runoff or stormwater in the immediate region

Studies that are in other geographic areas, or are based on clearly different topographies or soils, are not eligible. When no data are available, and there are no known sources of the pollutant, there is no basis for the exemption.



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Water Quality Stormwater Permitting

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In cases where historic monitoring data from a site are used for generating a natural background value, and the site is no longer accessible or able to meet reference site acceptability criteria, then there must be documentation (such as historic land use maps) that the site did meet reference site criteria which indicates the absence of human activity.

How will this information and data on natural background conditions be used?

DEQ or DEQ's agent may review a permit holder's determination that a benchmark exceedance is based solely on natural background concentrations, and disallow the exception if the documentation is inadequate.

For more information please contact:

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References

- NPDES 1200-Z Schedule D.3.r. and 1200-A Schedule D.3.m.; and U.S. EPA 2015 Multi-Sector General Permit, 6.2.1.2. Natural background pollutant levels
[United States Environmental Protection Agency](http://www.epa.gov/production/files/2015-11/documents/msgp_q-a_aug2009.pdf)
- U.S. EPA 2015 Multi-Sector General Permit Fact Sheet, pp 58-59: X.B.1. Natural Background Sources
- U.S. EPA Region 10, MSGP Questions and Answers August 14, 2009
https://www.epa.gov/sites/production/files/2015-11/documents/msgp_q-a_aug2009.pdf, Question 50

Alternative formats

Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email deqinfo@deq.state.or.us.