

1200-Z NPDES Industrial Stormwater General Permit: Annual Geometric Mean Reporting in Your DEQ Online



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Visit DEQ's
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land and water.*

The [1200-Z industrial stormwater general permit](#) that was issued by the Department of Environmental Quality in March 2021 requires permit registrants to report the Tier 2 geometric mean benchmark evaluation on the Aug. 15 Discharge Monitoring Report annually. The geometric mean is a specific calculation performed on a series of numbers, and it is different than an average. For registrants reporting to DEQ using [Your DEQ Online](#), this fact sheet provides assistance with calculating and reporting this information to DEQ.

Where in the 1200-Z permit does it require the geometric mean for Tier 2?

Please review Schedule A.12, permit page 21, for the full requirements about Tier 2. Schedule B.13.b, permit page 35, requires registrants to report Tier 2 geometric mean benchmark evaluations on the discharge monitoring report, or DMR, due Aug. 15 annually.

Which pollutants require a geometric mean calculation?

Statewide benchmark pollutants are the only category of pollutants subject to Tier 2 evaluation. In Your DEQ Online, the statewide benchmark pollutants may be found under the georegion DMR tab, which are abbreviated CS, PH, CS, CO, CR, EA, WV and MW. Each facility has been assigned a georegion based on geographic location. The georegion's statewide benchmarks are in Table 4 of the 1200-Z permit on page 26.

Which pollutants are exempt from Tier 2 geometric mean calculation?

During the 2021-2026 permit term, if any pollutant and monitoring location triggered Tier 2 status, no additional Tier 2 evaluation is required during the permit term for that pollutant at that monitoring location. Please review Schedule A.12, 1200-Z permit page 21, for the full permit requirements and exemptions.

How do I calculate geometric mean?

The most common way is to use Microsoft Excel. Additionally, there are many free tools available online that will assist you with this calculation, as well as posted instructions for calculating geometric means for the type of handheld calculator if you prefer that method. Please consult online resources for questions on how to accurately calculate the number.

When your lab result is "Not Detected" use one-half of the detection level

Per Schedule B.13.a.iv, permit page 35, when calculating the geometric mean, use one-half of the detection level for non-detections. When your lab reports "ND" or "Not Detected" as the result, look in the Definitions section of your lab report to see how your lab defines not detected, find the limit they reference, and use half that value in your geometric mean calculation. Do not use zero in your calculation because it is not accurate.

Geometric mean calculation is entered on the Aug. 15 DMR

In your account in Your DEQ Online, open the DMR due Aug. 15. You will see a new tab called "GM" for geometric mean.

To report your calculated geometric mean, first select the date **June 30** on the sample date calendar, and then add your calculated geometric mean to each location. Save and submit this DMR just like your other DMRs.

Do I still need to report the on the GM DMR annually if I have a monitoring waiver?

No. On July 20, 2023, DEQ revised the permit through rulemaking to re-instate a long-standing exemption that was inadvertently omitted during the 2021 renewal. Page 21 of the permit under Schedule A.12.a., now states: “Permit registrants are not required to conduct this evaluation for the benchmark parameter(s) for which DEQ or agent has granted a monitoring waiver in accordance with Schedule B.9 of this permit.” More information may be found [2023 Adopted Rules](#)

How do I report the geometric for pH?

pH is not a geometric mean evaluation but rather a minimum of 50 percent of qualifying samples must be within range. To report correctly on the pH GM DMR, first select the date **June 30** on the sample date calendar and then looking back at two full reporting years of sample results, report the percentage of samples outside the range. For example, most facilities will be using eight sampling results to determine the percentage of samples outside the range.

If three of the eight sampling are outside the range, simple divide three by eight to get 37.5 percent outside the range.

How do I report pH in reporting years 2024, 2025 and 2026?

Please use a rolling two full reporting years to report the percentage of samples outside the pH range.

Reporting years	pH GM DMR due date
2021/2022 and 2022/2023	Aug. 15, 2023
2022/2023 and 2023/2024	Aug. 15, 2024
2023/2024 and 2024/2025	Aug. 15, 2025
2024/2025 and 2025/2026	Aug. 15, 2026

Where can I find more information?

Please refer to [DEQ Stormwater’s Your DEQ Online manual](#) for instructions on how to access, complete and submit DMRs and other reports in Your DEQ Online.

Examples: Calculating annual geometric mean in Excel

This facility analyzed four stormwater samples during July 1, 2021, to June 30, 2022, and entered the four results from their laboratory reports vertically into Excel like this. After clicking in cell B6, select the fx function icon, circled below, to get the Insert Function pop up box:

The screenshot shows an Excel spreadsheet with the following data:

Sample Date	Total Zinc mg/L
11/02/21	0.09
12/15/21	0.20
01/12/22	0.60
03/01/22	0.30
	=

The 'Insert Function' dialog box is open, showing a list of functions. The 'GEOMEAN' function is selected. The dialog box includes a search field, a category dropdown set to 'Most Recently Used', and a list of functions: GEOMEAN, SUM, AVERAGE, IF, HYPERLINK, COUNT, and MAX. The description for GEOMEAN is: 'Returns the geometric mean of an array or range of positive numeric data.'

Select GEOMEAN from the function list, then select the OK button. Choose the cells for the data you want to calculate the geometric mean of, either by typing them in or clicking and dragging the column with your mouse. The calculated geometric mean will then appear in the cell you clicked on, in this case B6. Enter that value (0.24 milligram per liter, or mg/L in this example) into your GM Aug. 15 DMR tab to report your geometric mean for total zinc:

	A	B	C	D	E
1	Sample Date	Total Zinc mg/L			
2	11/02/21	0.09			
3	12/15/21	0.20			
4	01/12/22	0.60			
5	03/01/22	0.30			
6		0.24			
7					

When the Laboratory Report Result is “Not Detected”

This laboratory report for TSS (total suspended solids) has the result ND. Within this laboratory report, in the Notes and Conventions section, this laboratory defines ND as “analyte not detected at or above the reporting limit.” You can also see the Reporting Limit is reported as 5.00 mg/L.

In this case, the permit requires you use half the value of the limit within your geometric mean calculation, which is 2.5 mg/L:

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed
SW OF 005 (Compliance) (A7L0728-01)			Matrix: Water			
Batch: 7121025						
Total Suspended Solids	ND	---	5.00	mg/L	1	12/28/17 12:40

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported

Alternative formats

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.oregon.gov.