



City and County of Denver

Department of Transportation and Infrastructure

Right-of-Way Services
Wastewater Permits

201 W. Colfax Avenue, Denver, CO 80202

Wastewater Permits Phone: 720-865-3060

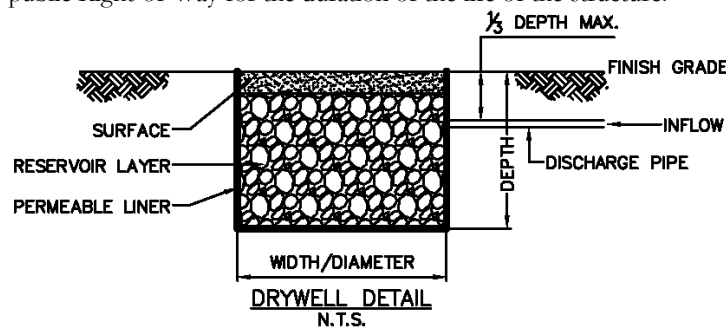
Email: WastewaterPermits@denvergov.org
Permitting Info: www.denvergov.org/SUDP

Groundwater Dewatering Permitting Requirements

Authority:	Denver Revised Municipal Code (D.R.M.C.) of the City and County of Denver, Chapter 56, Sections 56-111 and 56-102 (h).
Purpose:	The regulation of groundwater dewatering discharge to protect public and private property.
Document Date:	March 7, 2024
Customer Interface:	<p>Permits are issued by</p> <ul style="list-style-type: none"> ➤ Wastewater Permits: wastewaterpermits@denvergov.org or 720-865-3060. ➤ State of Colorado Water Quality Control Division (WQCD) CDPHE Dewatering General Permit Program online application portal CEOS portal ➤ Environmental Protection Agency (EPA) Region 8 Underground Injection Control <p>Enforcement of dewatering system compliance is performed by</p> <ul style="list-style-type: none"> ➤ Neighborhood Inspection Services (NIS): 311 in coordination with DOTI WW Plumbing Inspection ➤ Denver Department of Public Health and Environment (DDPHE) Department of Public Health Environment
Definition:	Groundwater Dewatering System means a permanent well, drain, perimeter drain, sump or other excavation constructed for the purpose of keeping the water table below a desired level or elevation where the water produced is not put to beneficial use.
Permitting Requirements:	<p>A Wastewater Sewer Use and Drainage Permit (SUDP) must be obtained for any proposed groundwater dewatering system. Any system proposed outside of four (4) feet of the water table may not require a permit at DOTI's discretion. Proper submittal and log in through E-Permits under the original or new building log is required.</p> <ul style="list-style-type: none"> ➤ Commercial, Mixed Use and Multi-Residential of 3 or more unit buildings require a separate groundwater dewatering LOG for SUDP only review and permit. CDPHE and/or EPA review for permit determination may be required. ➤ Single family and Duplex (2 unit) only groundwater dewatering reviewed and permitted as part of the building construction SUDP permit <p>The initial SUDP submittal must include</p> <ul style="list-style-type: none"> ➤ Future Owner Notification Letter with narrative of groundwater dewatering system to be maintained ➤ Groundwater Management Plan, prepared by a geotechnical engineer licensed in the State of Colorado that must include: <ul style="list-style-type: none"> • Elevations in NAVD88 of the existing groundwater level, lowest construction point (example: bottom of footers) and dewatering capturing device (example: perforated pipe) • Pre-construction ground elevation in NAVD88 utilized in the submitted Geotech Soils report • Anticipated highest post-construction groundwater elevation in NAVD88 for the life of the structure • Anticipated frequency of discharge (example: daily, seasonal, monthly) • Designed discharge rate (in gallons per minute or cubic feet per second) including soil filtration rate • Complete plans and details of the system to include the entire site with structure(s) with distances, location, size (minimum 4-inch diameter) and material of all piping, connections and/or discharge point to structures and property lines, in conformance with the Groundwater Discharge Criteria (outlined below) <p>After initial review and upon SUDP reviewer approval and direction, the applicant must record the following as an easement with Denver's Clerk and Recorder's office. A copy of the recorded document must be submitted after recording.</p> <ul style="list-style-type: none"> ➤ Single Family and Duplex projects:

	<ol style="list-style-type: none"> 1) the approved future owner notification of the groundwater dewatering system, 2) geotechnical prepared groundwater management plan <p>➤ Commercial, Mixed Use and Multi-Residential of 3 or more unit buildings:</p> <ol style="list-style-type: none"> 1) the approved future owner notification letter, 2) CDPHE permit or determination letter if applicable 3) EPA determination letter or permit if applicable
<p>Groundwater Discharge Method and Criteria:</p>	<p><u>Water:</u> No storm or surface water (open to sky water) shall be allowed or directed to enter a groundwater dewatering system. Storm water may be discharged from the property by alternate means that meet Wastewater requirements and standards for storm drainage. For example, roof drains and downspouts/splash blocks shall be designed in a way to minimize this storm water from reaching the underground building perimeter drain. Exception: Overflow drains within non-hardscaped window wells may drain to the perimeter drain and groundwater dewatering system.</p> <p><u>Sanitary Sewer:</u> In no case may ground water be discharged to the sanitary sewer system.</p> <p><u>Design Criteria</u></p> <ul style="list-style-type: none"> ➤ No discharge will be permitted to cross the property lines and impact adjacent private property or the public Right-of-Way. ➤ All discharge methods must be designed so that there is no impact to adjacent properties or to the Right-of-Way. If this is not possible, then the groundwater dewatering system may not be installed. ➤ The depth of the lowest construction point of the structure shall be designed and water capturing device or system shall be designed to be greater than 4 feet minimum above the water table for the life of the structure, (requires future owner notification letter and P.E. signed/stamped design plans) OR ➤ The lowest construction point shall be designed to allow for a high water table without the need to dewater for the life of the structure (requires future owner notification letter only) <p><u>Groundwater Discharge Methods:</u></p> <ol style="list-style-type: none"> 1. Hard-piped connection to a storm sewer system. (may also require a CDPHE and/or EPA review and an additional state or federal permit) 2. Injection back into the ground, in a manner different than method 3 (requires EPA review and may require an additional federal permit and may also require CDPHE review and an additional state permit) 3. To a drywell that is wider than it is deep, measured from the finished grade 4. To the surface within the property <ol style="list-style-type: none"> 1. <u>Discharge of groundwater to a storm sewer system</u> Requires demonstration that the other options for maintaining groundwater discharge and flows listed below are not feasible. If, after demonstrating all other options are not feasible and there is an existing public storm sewer or major drainage channel located within proximity to the site, the sump pump may be permitted to discharge or connect directly to the public storm sewer system. DOTI review and approval of signed and stamped flow calculations showing the storm main or major drainage channel has available capacity to include the proposed additional groundwater discharge flows prepared by a Colorado licensed Professional Engineer (PE) may be required and may, at the discretion of DOTI, require copy of EPA and/or CDPHE review, system plans and permit determination. DOTI review and approval of the details and connection location to the public storm pipe, manhole, inlet, box culvert, or open channel is also required. For larger projects with a storm system with water quality, anticipated connected groundwater flows must be disclosed and included with the storm project review. The DOTI approved groundwater dewatering connection shall not be routed thru the water quality device and MUST connect on the downstream/outbound side of the water quality device (vault, filters, etc) or in a separated location as directed by DOTI. Connection may involve obtaining written permission to connect and discharge to a private storm sewer system that then discharges to a public storm sewer system, including channel. Discharge rate to a public storm sewer system from direct connection or from a private storm sewer system may not exceed 0.10 cubic feet per second (44.9 gallons per minute) or at a rate as determined by DOTI Wastewater.

2. Discharge of groundwater via Injection into the ground
Injection location must be within the site and shall not be located within or in close proximity to any public or private utility easement with below grade public piping, devices or fixtures and will require a copy of EPA review and permitting determination and CDPHE review. A copy of a CDPHE review, system plans and permit may also be required as determined by CDPHE review. Note that drywells that are deeper, measured from finished grade, than they are wide are considered an injection well
3. Discharge of groundwater to a drywell
The groundwater dewatering system may discharge to a drywell, that is wider then it is deep, measured from finished grade with P.E. signed and stamped flow and filtration calculations and design that demonstrate the design will not result in compromising the integrity of any new or proposed structures or result in surface flows over drywell overflows to any adjacent property or public Right-of-Way or cause a rise in the water table of neighboring property for the duration of the life of the structure. An example drywell detail, including certain minimum requirements, is shown below. Drywells that are deeper, measured from finished grade, than they are wide are considered an injection well and will require EPA and CDPHE reviews as stated above
4. Discharge of groundwater to the surface
The groundwater dewatering system may discharge to the surface, with P.E. signed and stamped letter that certifies that the surface flows will not result in surface flows to any adjacent property or public Right-of-Way for the duration of the life of the structure.



NOTES:

1. Dimensional ratio: Drywell depth must not exceed the drywell width/diameter.
2. Volume: Must contain a minimum volume, based on soil permeability and pump discharge rate (maximum discharge capacity of the pump) to ensure adequate capacity without overflow.
3. Reservoir Layer: Shall use rock of uniform size in order to maximize volume. $\frac{3}{4}$ " river rock or $\frac{3}{4}$ " crushed rock is recommended.
4. Surface: The surface shall be designed in a way that prevents sediment migration into the top of the drywell, which would reduce void volume and permeability.
5. Liner: The drywell should be lined in order to prevent sediment migration into the reservoir from adjacent soil. The liner shall have the proper permeability rate to allow the drywell to drain in the appropriate time based on the drywell size and rate.
6. Discharge pipe: It is recommended that the discharge pipe be placed no deeper than $\frac{1}{3}$ the depth of the pit.
7. All water piped to the drywell shall be groundwater sump pump discharge only; all stormwater run off must be routed through a separate system. Any stormwater run off from roofs or ground surface will clog the fabric and native soils.

Fees:

See www.denvergov.org/SUDP to review the current SUDP and DOTI fee schedules