A project is being planned for a new commercial center in a California beach community with a subterranean parking garage. But, according to the geotechnical report, groundwater is shallow, and the excavation contractor can expect to encounter it between 6 and 9 feet below ground surface. Soils at the site consist of a sandy loam. After consulting with a geotechnical engineer, you learn it is estimated that this site is going to produce up to 100,000 gallons per day of groundwater. *That is a lot of water!* What are we supposed to do with it? In this month’s edition of the *Monthly Dirt*, we are going to talk about permitting options and logistical water quality considerations for dewatering projects.

**So, what are we going to do with 100,000 gpd?** That is the question that many construction managers find themselves asking? To put it in perspective, it will fill five “Baker” tanks each and every day. Not only is that expensive, but a project manager will quickly find himself or herself running out of room to stage so many tanks. This is when the project manager comes to emphatically inform you that you will have to find a way to get rid of the water. Your list of options include:

- Discharging it to the ground
- Capturing and reusing it
- Trucking it off site to a municipal wastewater treatment plant
- Discharging it to the municipal sanitary sewer
- Discharging it to the municipal storm drain

After making a quick assessment of these options, you quickly realize that the first three options do not make any sense – there is just way too much water. For sites with smaller volumes of water, especially during the dry season, discharging the water to the ground or capturing the water and using it onsite for dust control, irrigation, or other construction related activities, may make sense. But, with such high daily yields, the site would be inundated and there is no way so much water could be used on-site. For the same reason, trucking is also not an economical option. This leaves the last two choices as the only potentially viable options.

**_sanitary sewer option:**

This option involves pumping or gravity-draining the groundwater to a municipal sanitary sewer manhole. But, before you go pop open a manhole lid, you need to get authorization from the sewer owner. Some municipalities struggle with having enough capacity just for their normal operations (especially during rain events) and will categorically not accept dewatering. Other municipalities will conditionally allow it depending upon the capacity of the system where the project is located. In all cases, however, before discharging to a public sanitary sewer system, the sewer district agency needs to be contacted, and a permit application submitted.

The advantages of discharging to a sanitary sewer system include:

- Typically, a more streamlined permitting experience;
- Usually, easy access to the discharge point;
- Typically, higher permit limits than compared with a NPDES Permit, meaning less pre-treatment needed;
- Typically, less sampling and monitoring requirements; and
- Typically, less onerous reporting requirements than under a NPDES Permit.

Disadvantages of going to a sanitary sewer system include volume and flow rate restrictions and a volume-based (and, sometimes, pollutant concentration-based) discharge fee. Many times, this fee can be very substantial.

**storm sewer option:**

This option involves pumping or gravity-draining the groundwater to a municipal storm drain or, sometimes, directly to a water body. But, before you stick the end of the hose in the closest storm drain inlet, let’s review some important Federal and State regulations. Ultimately, it is the Federal Clean Water Act that regulates these types of discharges. But, the USEPA has delegated permitting authority to the California State Water Resources Control
Board (SWRCB). The SWRCB issues State-wide National Pollutant Discharge Elimination System (NPDES) permits for discharges of water to municipal storm drain systems or water bodies. But, the SWRCB allows the nine Regional Water Quality Control Boards (RWQCBs) to implement NPDES permits for specific types of discharges within their regions. The NPDES Construction General Permit allows for certain types of non-storm water to be discharged off-site, which are called “authorized” non-storm water discharges. These include discharges from dechlorinated potable water sources such as: fire hydrant flushing, irrigation of vegetative erosion control measures, pipe flushing and testing, water to control dust, uncontaminated ground water from dewatering, and other discharges not subject to a separate general NPDES permit adopted by a Regional Water Board. Ah, so we can discharge dewatering under the CGP – cool! Not so fast … did you notice the last line? “… other discharges not subject to a separate general NPDES permit adopted by a Regional Water Board.” I know it is easy to miss, but the fact is that all but one of the RWQCBs have a separate general NPDES permit that covers de-watering.

Regional Permit Name | NPDES No. | Order No. | Issued Date | Expiration Date |
--- | --- | --- | --- | --- |
1 | R1-2015-0003 | GENERAL NPDES PERMIT FOR LOW THREAT DISCHARGES | 03/12/2015 | 09/20/2020 |
2 | No Separate Permit | Dewatering allowed to be discharged under the Construction General Permit |
3 | R3-2011-0023 | LOW THREAT DISCHARGES | 12/01/2011 | 12/31/2016 |
4 | R4-2013-0095 | GROUNDWATER EXTRACTION DISCHARGES | 06/06/2013 | 07/01/2018 |
5 | R5-2013-0074 | Dewatering & other low threat discharges | 10/14/2016 | 05/01/2018 |
6 | R6-2014-0049 | LIMITED THREAT DISCHARGES TO SURFACE WATER | 06/18/2014 | 06/17/2019 |
7 | R7-2009-0300 | LIMITED THREAT GENERAL PERMIT | 11/18/2009 | 11/18/2014 |
8 | R9-2016-0076 | GROUNDWATER EXTRACTION DISCHARGES | 03/10/2015 | 03/01/2020 |
9 | R10-2016-0003 | DE MINIMUS THREAT DISCHARGES | 03/12/2016 | 09/20/2020 |

To pursue the NPDES permitting option, you will need to determine which regional permit you are in and download the appropriate permit. (Refer to the hyperlinks in the above table.) A Notice of Intent (NOI) will be included in each of the above-referenced permits. It will need to be completed and submitted to the appropriate RWQCB with a permit fee (approximately $2,200) and whatever additional information that is requested in the permit. Usually, this will include a site map; a dewatering plan showing the method for groundwater extraction, volumes, rates, and discharge location; and analytical results (although some of the permits may not require analytical testing) until the system begins operation. Do not be surprised to find that the permit discharge limits for various analytical parameters may be hard to meet and require treatment. The water coming straight out of the ground may have higher levels of metals, nitrates, pH, or other constituents than what is allowed by the permit. It is very likely that a treatment system will be needed to not only make sure that turbidity and solids are below the permit limits, but also to remove other problematic constituents.

For a discharge to a municipal storm sewer system, the Water Board is not the only entity from whom you will need to obtain authorization. The owner of the storm sewer system will need to be contacted to make sure that they have capacity for the volume you plan to discharge. Municipal code usually requires that they be notified. In addition, there may be other entities to contact depending upon the project’s location. For example, if your project is near, and discharges to, the Monterey Bay, you will need to submit a NOI to the Monterey Bay National Marine Sanctuary as required by the Region 3 Low Threat Discharge NPDES Permit. MD
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ATS will work with a contractor’s need for a small footprint due to limited space or access. ATS assists with submittals, permitting requirements and serves as a regulatory interface. ATS experience managing groundwater has focused on the following applications: sub-grade and subterranean construction, drilling, and tunneling, trenching, micro boring and more.

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More than ever before your BMPs must be effective. According to the CGP (CA General Permit) the efficacy of the BMPs outlined in your SWPPP will be evaluated by inspections before, during, and after a storm event. The main learning points taken from these events will be How to SELECT, INSTALL, and INSPECT BMPs.

A Trade show will be on site with EC equipment, products, suppliers and the latest in erosion control BMP practices. Just a walk away is the Shasta College Erosion Control Training Facility where we will spend the second day watching and participating in BMP implementation. Check out this BMP video: https://www.youtube.com/watch?v=VbmjJTEmS78&feature=youtu.be

Cost is $400.00 per person. Beverages and lunch are provided for two days. You will receive a certificate of attendance for continuing education.

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