# California Regional Water Quality Control Board
## Central Coast Region

**Linda S. Adams**
*Acting Secretary for Environmental Protection*

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**Edmund G. Brown Jr.**
*Governor*


May 27, 2011

Mr. John Waddell
County of San Luis Obispo, Public Works Department
County Government Center, Room 207
San Luis Obispo, CA 93408

Dear Mr. Waddell:

**USE AND DISPOSAL PLAN FOR CONSTRUCTION DEWATERING, LOS OSOS PROJECT**

The purpose of this letter is to clarify issues related to the use and disposal of water generated by dewatering during the construction of San Luis Obispo County's Los Osos Water Recycling Facility Project (Project). As discussed previously, construction dewatering is authorized under the statewide *General Permit for Storm Water Discharges Associated with Construction Activities (General Permit)*, provided such discharges comply with the permit conditions and best management practices (BMPs) to protect water quality. To enroll under the General Permit, create an account in the Stormwater Multiple Application and Report Tracking System (SMARTS) at:

https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp

Once registered in SMARTS, the legally responsible person or his or her authorized signatory or data submitter must electronically submit permit registration documents prior to commencing construction activities. The County must develop a construction dewatering plan to address all items described in this letter related to Project dewatering activities. The County must include this plan in the project Storm Water Pollution Prevention Plan (SWPPP). The County shall adhere to all other requirements related to Project construction activities pursuant to the General Permit. The following information is intended as guidance in developing and implementing BMPs in your SWPPP and construction bid documents.

Central Coast Water Board staff has determined that water generated by Project dewatering activities is an authorized non-stormwater discharge under the General Permit provided that the following conditions are satisfied:

1. The discharge does not cause or contribute to a violation of any water quality standard;

2. The discharge does not violate any other provision of the General Permit;

3. The discharge is not prohibited by the Central Coast Water Board Basin Plan;

4. The County has included and implemented specific BMPs required by the General Permit to prevent or reduce the contact of groundwater from dewatering with construction materials or equipment.

5. The discharge does not contain toxic constituents in toxic amounts or (other) significant quantities of pollutants;

6. The discharge is monitored and meets the applicable Numeric Action Limits and Numeric Effluent Limits (General Permit, V. Effluent Standards); and

7. The County reports the sampling information in an annual report.

Considering analytical results of samples collected by the Los Osos Community Services District (CSD) and Central Coast Water Board staff, we anticipate that bacteria, sediment, nitrate, and ammonia are constituents of concern to water quality. However, we have also taken into consideration that dewatering activities will be short-term and necessary for construction of the Project. Each of the constituents of concern is described below, followed by applicable water quality objectives, the basis for specified requirements, and actions needed to protect against, minimize, and mitigate for potential water quality impacts associated with construction dewatering activities. Compliance with the applicable water quality objectives (below) constitutes compliance with the aforementioned conditions for authorized non-stormwater discharge pursuant to Section III of the General Permit.

**Discharge Minimization** – Use and disposal of water generated by construction dewatering to land (i.e., compaction, dust control, irrigation, percolation, etc.) is the primary BMP to ensure water quality protection. The County must dispose of construction dewatering to land whenever feasible. The alternative disposal options described below are applicable only after the Central Coast Water Board agrees that land disposal options are infeasible. Feasibility considerations include, but are not limited to, project delay, environmental impacts, technical, and cost considerations.

**Bacteria** – Due to the proximity of septic systems to dewatering intakes, bacteria may be present in the discharge in excess of water quality objectives. A wide variety of coliform bacteria are naturally prevalent in soil, so, because of the source, fecal coliform bacteria are the most appropriate indicator of human pathogens. Accordingly, dewatering discharges must not cause receiving waters to exceed water quality objectives for fecal coliform bacteria of 14 most probable number per 100 milliliters

(MPN/100ml) median and no more than ten percent of samples exceeding 43 MPN/100ml. These objectives are based upon protection of the shellfish harvesting beneficial uses of the receiving waters[1]. Basin Plan criteria for protection of body-contact recreation beneficial uses of receiving waters are also applicable, but are less stringent than the shellfish objectives above. Body-contact recreation criteria for fecal coliform bacteria include 200 MPN/100ml log mean and no more than ten percent of samples exceeding 400 MPN/100ml. If disinfection of the discharge is implemented using chlorine, residual chlorine must be removed prior to discharge into surface waters. Representative samples of construction dewatering discharges must be collected and analyzed for fecal coliform bacteria weekly while dewatering discharges continue.

**Sediment** – Our understanding of the proposed dewatering procedure is that shallow groundwater will be extracted from the soil rather than directly from the trench, although occasional pumping from trenches may be needed. Based upon this information, we do not anticipate excess sediment to be an issue of concern for water quality. However, discharges should be free of sediment concentrations that result in deposition or concentration of material that causes nuisance or adversely affects beneficial uses. Also, the discharge velocity should be diminished and conveyed to channels (rather than exposed mudflats) to minimize disturbance of bay sediments. This objective is based upon Basin Plan general objectives for all inland surface waters, enclosed bays and estuaries. Representative samples of construction dewatering discharges must be collected and analyzed for turbidity weekly while dewatering discharges continue. Compliance with the following effluent limitations[2] satisfies effluent standards in Section V.B. of the General Permit.

**Table 1 – Turbidity Effluent Limitations**

| Parameter | Test Method | Discharge Type | Min. Detection Limit | Units | Numeric Action Level | Numeric Effluent Limitation |
|---|---|---|---|---|---|---|
| Turbidity | EPA 0180.1 and /or field test with calibrated portable instrument | Risk Level 2[1] | 1.0 | NTU | 250 NTU | N/A |
| | | Risk Level 3[1] | | | 250 NTU | 500 NTU |

1 – Risk level will be determined by staff pursuant to Section VIII of the General Permit.
NTUs - Nephelometric Turbidity Units
N/A – not applicable
EPA –Environmental Protection Agency

[1] Morro Bay Pathogen TMDL, Resolution No. R3-2002-0117
[2] Table obtained from Section V.B., Table 1 of the Construction Stormwater General Permit Order No. 2009-0009-DWQ.

**pH –** According to October 2006 groundwater quality data for the Los Osos upper aquifer, pH ranges from 5.9 to 7.2[3]. In order to protect warm freshwater, cold freshwater, and ocean water habitats, pH shall not be depressed below 7.0 or raised above 8.5, and any change in normal ambient pH shall not exceed 0.5 in fresh waters[4]. pH can vary greatly in receiving waters (diurnal and annual fluctuations). Therefore, Section V.B. of the General Permit provides effluent limitations protective of surface water beneficial uses. Representative samples of construction dewatering discharges shall be collected and analyzed monthly for pH while dewatering occurs. Compliance with the following effluent limitations[5] satisfies Section V.B. of the General Permit..

**Table 2 – ph Effluent Limitations**

| Parameter | Test Method | Discharge Type | Min. Detection Limit | Units | Numeric Action Level (NAL) | Numeric Effluent Limitation (NEL) |
|---|---|---|---|---|---|---|
| pH | Field test with calibrated portable instrument | Risk Level 2[1] | 0.2 | s.u. | Lower NAL= 6.5 Upper NAL= 8.5 | N/A |
| | | Risk Level 3[1] | | | Lower NAL= 6.5 Upper NAL= 8.5 | Lower NEL= 6.0 Upper NEL= 9.0 |

s.u. – pH standard units

**Nitrate –** The Basin Plan does not have a water quality objective for nitrate specific to Morro Bay Estuary. However, as a biostimulatory substance, nitrate and other nitrogen-containing compounds may contribute to algal blooms resulting in water quality impairment. Algal blooms due to the discharge are prohibited. Therefore, dewatering discharges should be conveyed close to actively flowing channels in order to minimize accumulation of nutrients in shallow waters.

**Ammonia –** Due to septic system effluent discharges to shallow groundwater, water generated by construction dewatering may contain concentrations of ammonia that could be toxic to marine organisms. Construction dewatering discharges shall not cause receiving water concentrations of total ammonia to exceed 24 milligrams per liter as nitrogen (mg/L as N) in freshwater and 21 mg/L as N in Morro Bay. These criteria

[3] Table 3 - Los Osos Nitrate Monitoring Program, Los Osos Community Services District, Cleath and Associates, October 2006
[4] Pursuant to Section II.A.1 and Section II.A.2 of the Basin Plan
[5] Table obtained from Section V.B., Table 1 of the Construction Stormwater General Permit Order No. 2009-0009-DWQ.

are based upon USEPA ambient water quality criteria for waters with pH of 7[6]. If monitoring indicates a pH value above 7, then more stringent ammonia criteria may apply. In addition, according to Section II.A.2 of the Basin Plan, the discharge shall not cause concentrations of un-ionized ammonia ($NH_3$) to exceed 0.025 mg/L in the receiving water (i.e., inland surface waters, enclosed bays, and estuaries). If the ammonia concentrations exceeds 24 mg/L (freshwater) or 21 mg/L (Morro Bay) and the pH value is above 7 when dewatering, then follow-up receiving water sampling for temperature and salinity is required. Representative samples of construction dewatering discharges shall be collected and analyzed monthly for ammonia and pH while dewatering occurs.

**Monitoring, Reporting, and Notifications** - The water quality objectives described above are for receiving waters. This means that compliance with the specified objective is measured in the receiving water rather than the discharge. However, due to the variability of receiving water quality and conditions, compliance monitoring must be implemented by representative sampling of the discharge. If discharge samples reveal concentrations in excess of water quality objectives, then follow-up sampling of receiving water must be implemented to verify compliance with the appropriate receiving water objectives. Throughout Project construction, monthly monitoring reports must be submitted summarizing bacteria, turbidity, pH, and ammonia monitoring data; estimated volume of dewatering discharges; time, date and location of dewatering and location of discharge. If monitoring results indicate noncompliance with criteria described above, then Central Coast Water Board staff must be notified immediately (via email or telephone). Additionally, monthly reports must include a description of corrective actions and a corresponding schedule for implementation.

## SUMMARY OF DISCHARGE & MONITORING REQUIREMENTS

| Parameter | Water Quality Objective | Monitoring Frequency |
|---|---|---|
| Discharge Minimization | Alternatives Feasibility Evaluation | Advance Approval |
| Volume & Location | Recorded for each surface water discharge | Ongoing |
| Fecal Coliform Bacteria | 14 MPN/100ml median | Weekly |
| | No more than 10% exceed 43 MPN/100ml | |
| Turbidity | 250 NTU (NAL) | Weekly |
| | 500 NTU (NEL) | |
| pH | 6.5 to 8.5 (NAL)[1] | Monthly |

[6] U.S. Environmental Protection Agency, Office of Water, National Recommended Water Quality Criteria 2002, EPA 822-R-02-047

| | | |
|---|---|---|
| | 6.0 to 9.0 (NEL)[1] | |
| Ammonia | 24 mg/l (as N)[1] | Monthly |
| Un-ionized Ammonia | 0.025 mg/L (as N) | Calculated Monthly |
| Temperature | 35 degrees C | Triggered if pH is above 7 |
| Salinity | 20 g/kg | Triggered if pH is above 7 |
| Summary Reports | Discharge & Compliance Summary | Monthly |

1 - If monitoring indicates a pH value above 7, then more stringent ammonia criteria may apply.
MPN/100ml – most probable number per 100 milliliters
NTUs - Nephelometric Turbidity Units
NAL – Numeric Action Level
NEL – Numeric Effluent Limitation
mg/L – milligrams per liter
g/kg – grams per kilogram

We look forward to completion of the Los Osos Water Recycling Facility Project as soon as possible to prevent further degradation of water quality due to septic system discharges and we are available to assist County staff if needed to facilitate project completion. If you have questions, please call **David LaCaro at (805) 549-3892 or by email dlacaro@waterboards.ca.gov.**

Sincerely,

for Harvey Packard

Harvey Packard

Digitally signed by Harvey Packard
DN: cn=Harvey Packard, o=California Regional Water Quality Control Board, ou=Central Coast Region, email=hpackard@waterboards.ca.gov, c=US
Date: 2011.05.27 14:39:06 -07'00'

Roger W. Briggs
Executive Officer

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