Condition 23	Geotechnical Reports

Prior to the commencement of construction for buildings at each proposed facility, the design of each facility shall be based on a facility-specific geotechnical report prepared by a California registered geotechnical engineer and professional geologist. The geotechnical report shall provide seismic data for use with at least the minimum requirements of the California Building Code (2007), as adopted by the County of San Luis Obispo.

Evidence of compliance:

Generator Buildings at Pump Stations

Design of buildings located at all pump sites associated with the wastewater project is based on recommendations contained within the project Geotechnical Report prepared by Fugro West, Inc., dated March 9, 2004, and the Addendum and Update to the Geotechnical Report dated October 24, 2011. The Geotechnical Report and Addendum referenced above discuss geologic hazards present at the various sites and the seismic design data and parameters needed to design for those hazards. Please note that the seismic data contained in the 2010 California Building Code, referenced in Section 4.1 of Addendum, is the basis for design of all buildings as the 2010 California Building Code was adopted after the Coastal permit for the project was approved. The 2007 California Building Code, which is referenced in Condition 23 of the Coastal Permit, and the 2001 California Building Code and 1997 Uniform Building Code which are referenced in Section 6.3.1 in the Geotechnical Report, are superseded by the 2010 California Building Code.

The recommendations contained within the report and addendum are based on site specific soils investigations that were performed at each pump site and are presented in Tables within Section 4.1.2 of the Addendum and duplicated herein:

Section 6.1 of Geotechnical Report (Summary of Findings):
"The site is in a seismically active area of California. The plant should be designed to at least the minimum building code requirements of Seismic Zone 4. The site is located near the Los Osos Fault that is considered active, and capable of generating at least a magnitude 6.8 earthquake. Seismic response spectra and probabilistic seismic hazard analyses have been prepared to assist in the design of the project."

Section 4.1.2 of Addendum (Code Based Design Criteria)
"Structures should be designed to resist the lateral forces generated by earthquake shaking in accordance with the building code and local design practice. This section presents seismic design parameters for use with the 2010 California Building Code (CBC). The site coordinate and USGS interactive web page "Seismic Design Values for Buildings" (USGS 2008) was used to obtain seismic design criteria. Based on these criteria, the seismic data for use with code-based design are provided below

Seismic Data

California Building Code	Seismic Parameter	Values for Site Class D	Value for Site Class F (liquefaction)
Site Coordinates	Latitude, degrees	35.3127	35.3127
	Longitude, degrees	-120.8383	-120.8383
Section 1613.5.1 Figure 1613.5	Ss, Seismic Factor, Site Class B at 0.2 sec	1.472	1.472
	S_1, Seismic Factor, Site Class B at 1 sec	0.555	0.555
	Site Class	S_D, Stiff Soil*	S_F, Liquefiable**
Section 1613.5.3 Table 1613.5.3(1)	Fa, Site Coefficient for Site Class	1.0	0.9
Section 1613.5.3 Table 1613.5.3(2)	Fv, Site Coefficient for Site Class	1.5	2.4
Section 1614A	S_{MS}, Stie Specific Response Parameter for Site Class at 0.2 sec	1.472	1.325
	S_{M1}, Site Specific Response Parameter for Site Class at 1 sec.	0.833	1.333
	$S_{DS} = 2/3\ S_{MS}$	0.981	0.883
	$S_{D1} = 2/3\ S_{M1}$	0.555	0.889

* Assumes site mitigation performed to address liquefaction.

** Assume no site mitigation is performed to address liquefaction and is equivalent to Site Class E.

Based on potential liquefaction hazards, lower portions of the collection system area and some pump station locations are classified as a Site Class F per the building code. The values and subsequent response spectra were estimated for a Site Class E, "S_E", soft soil site, based on the estimated residual shear strength of potentially liquefiable soils. Other areas of the site, and prior to there being liquefaction, are classified as Site Class D, "S_D". The design for pump stations should consider the higher of either the Site Class F or Site Class D values presented in the table above for design and the structural period being considered."

Condition Satisfied–Collection System

Jason H. Biggs

Director, SLO County Planning

2-7-2012

Date

Condition Satisfied–Treatment Facility

Jason H. Biggs

Director, SLO County Planning

2-7-2012

Date