San Luis Obispo County
Los Osos Wastewater Project Development

TECHNICAL MEMORANDUM

SEPTAGE RECEIVING STATION OPTION

FINAL DRAFT
April 2008

7580 NORTH INGRAM AVENUE • SUITE 112 • FRESNO, CALIFORNIA 93711 • (559) 436-6616 • FAX (559) 436-1191

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SEPTAGE RECEIVING STATION OPTION

1.0 BACKGROUND

Septage is material that has been removed from a septic tank and hauled to another location for final disposition or additional treatment. A septage receiving station at the future Los Osos wastewater treatment plant would provide a disposal point for septage haulers in San Luis Obispo County (County), eliminating the need for many haulers to travel to Santa Maria or beyond. There are currently no treatment plants in the County that accept septage disposal. The septage receiving stations under consideration could serve only the community of Los Osos or could serve the community plus septage haulers disposing waste that originated outside of Los Osos. These were the two primary scenarios investigated in this technical memorandum (TM).

For this analysis, only septage waste was considered for disposal at the future treatment plant, not grease or chemical toilet waste. This memorandum provides an overview of what septage receiving stations are, the anticipated increases in flow and load associated with adding a septage receiving station at the future wastewater treatment plant, the impacts that these increases could have on the treatment process, the anticipated increase in truck traffic, anticipated revenue from disposal fees, and project costs.

2.0 INTRODUCTION - SEPTAGE RECEIVING STATION

The purpose of a septage receiving station is to pre-treat septage by removing solids, including rags, rocks and plastic material prior to introduction to the treatment plant processes. If not removed, these solids can damage pumps and other downstream equipment, or foul a digester process. Septage receiving units remove these solids, then wash, dewater, and compact them for landfill disposal. A picture of a septage receiving station is provided in Figure 1.

Septage haulers connect to the receiving stations, dispose their load and depart from the treatment plant in a very short time. A control valve automatically regulates incoming flow to prevent overflow. These units are completely enclosed to prevent odor emissions.

Most units can be automated, self-operating septage receiving stations with a coded security system and automatic load volume measurement for billing purposes. Additional options, such as pH and conductivity sensors, shut down the system if levels fall outside pre-set ranges. More information on septage receiving stations is provided later in this TM.

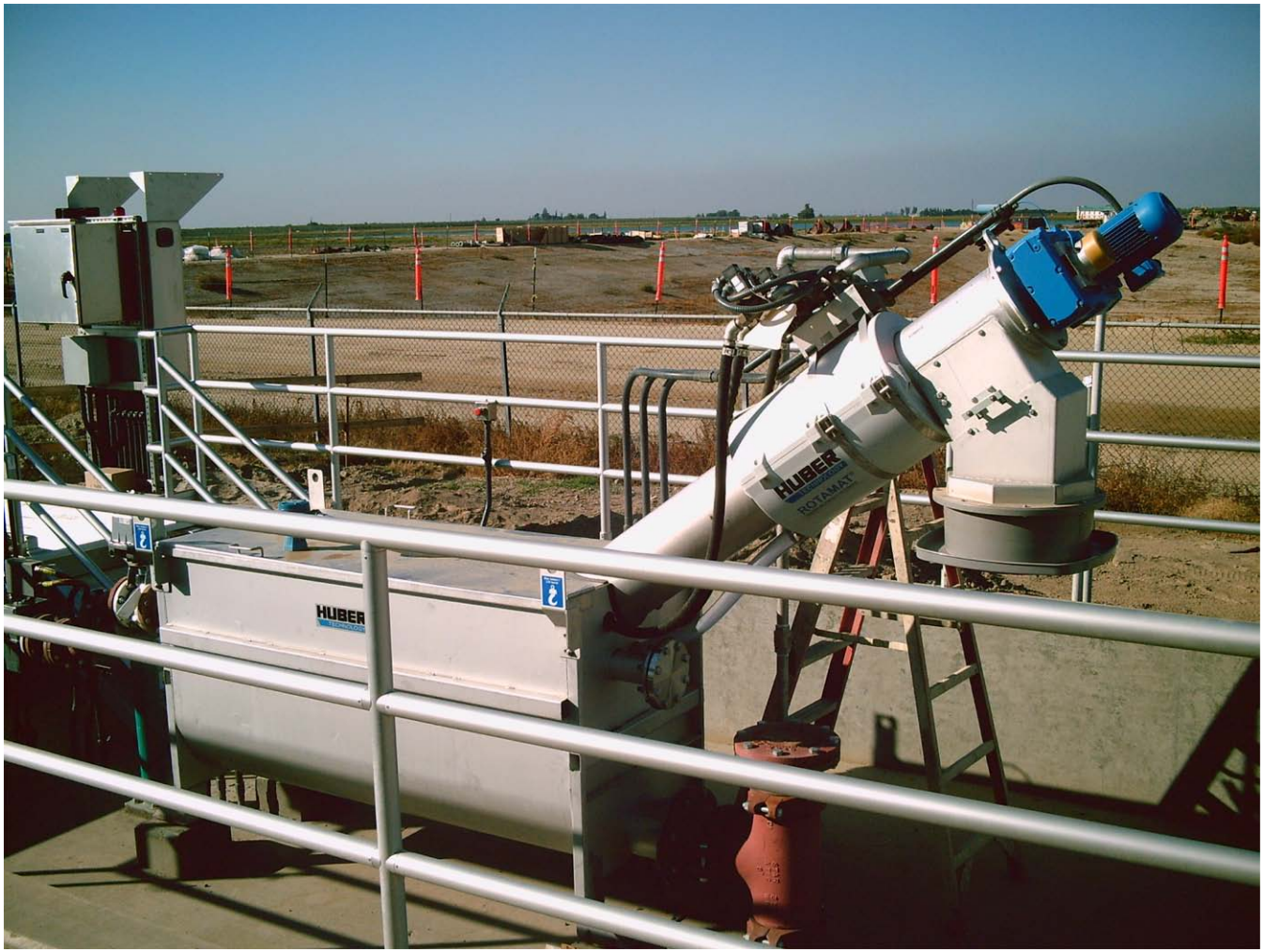

Figure 1
SEPTAGE RECEIVING STATION
IN MADERA, CALIFORNIA
LOS OSOS WASTEWATER PROJECT DEVELOPMENT
SAN LUIS OBISPO COUNTY

slo408f11-7630.ai

3.0 SEPTIC PUMPING PROJECTIONS

Evaluating the potential for a septage receiving station at the treatment plant requires an analysis of septic pumping projections. Two primary septic pumping scenarios were considered. The first scenario, or "Base Case" evaluated the amount of septage that would be generated by the community of Los Osos only. This Base Case scenario evaluated septage generation for a gravity/low pressure collection system and a septic tank effluent pumping/septic tank effluent gravity (STEP/STEG)) collection system, consistent with the two collection system alternatives evaluated in the August 2007, Fine Screening Analysis[1]. The second pumping scenario evaluated countywide septic pumping projections. Within the countywide scenario, we assessed the possibility that septage haulers would use a receiving station at the Los Osos treatment plant, and evaluated the impacts of future regulations on septic pumping. The results of the analysis are presented below.

3.1 Current Septic Pumping Rates in County

The County's Health Department (Environmental Health Division) maintains records of liquid waste haulers. The County completed a memorandum[2] on liquid waste haulers that included year 2007 septage-hauling quantities by company (see Appendix A for copy of memorandum). The information in this memorandum was used to develop the County septic pumping statistics in Table 1. The memorandum stated that if all the septic tanks within the County were pumped every five years, the amount of annual septage pumped would generate about 7 million gallons (MG). In other words, 20 percent (or 6,000 of the 30,000 County septic tanks) of the septic tanks would generate this volume of septage annually. This equates to approximately 1,200[3] gallons of waste per septic tank. Typical septic tank size ranges from 1,000 to 1,500 gallons for two to three bedroom homes (Ref: Crites and Tchobanoglous, 2002). The calculated volume of pumped septage is within this typical range.

From the available information, one can deduce that on average, septic tanks are pumped once every ten years. However, the State Water Resources Control Board's On-Site Wastewater Treatment System Regulations (AB 885) and the Central Coast Regional Water Quality Control Board's (Regional Board) pending Basin Plan update will require that all septic tanks be pumped and inspected once every five years, which will essentially double the current amount of septage pumping. For this analysis, it is assumed that the mandatory five-year pumping and inspection of each septic tank would begin in year 2011,

[1] San Luis Obispo County, Los Osos Wastewater Project Development, Viable Project Alternatives Fine Screening Analysis, Final, August 2007, Carollo Engineers in association with Crawford, Multari & Clark, Associates and Cleath & Associates.
[2] Liquid Waste and the Los Osos Waste Water Treatment Facility, Mary Whittlesey, Solid Waste Coordinator, December 12, 2007.
[3] December 12, 2007 memorandum reported that 7 million gallons per year would be generated if all 30,000 septic tanks pumped once every 5 years (or 7,000,000 gal/6,000 tanks = 1,200 gal/tank).

which is potentially the first operating year of the Los Osos treatment plant. If implementation of a five-year pumping requirement occurs sooner, there is no change to the amount of septage that would be hauled to the future Los Osos treatment plant. However, if implementation occurs at a later date, then the projections in this TM are likely greater than what would be transported to the septage receiving station.

Table 1 County Septic Pumping Statistics
Los Osos Wastewater Project Development
San Luis Obispo County

Item	Value
Number of Septic Tanks Countywide	30,000
New Septic Tank Installations	300 per year
Year 2007 Septage Pumped	3.7 million gallons
Number of Septic Tanks Pumped(1)	3,000 in 2007
Volume Pumped per Septic Tank(1)	1,200 gallons
Current Pumping Frequency	Once every 10 years
Basin Plan or AB 885 Pumping Frequency	Once every 5 years

Source: Liquid Waste and the Los Osos Waste Water Treatment Facility (Appendix A)
Note:
(1) Calculated value, not directly provided in memorandum.

3.2 Current Septic Pumping Rates in Los Osos

Within the Prohibition Zone, there are currently 4,281 septic tanks serving homes, businesses, mobile home parks, and schools. At build-out, there will be 4,769 STEP/STEG septic tanks or sewer lateral connections within the Prohibition Zone. There are currently 605 developed parcels with septic tanks outside the Prohibition Zone. At build-out, this number will increase to 749 parcels with septic tanks.

Since one septic tank within Los Osos' Prohibition Zone can possibly serve multiple users like the different spaces within a mobile home park, this analysis calculated a different volume per septic tank for the Prohibition Zone from what was presented in Table 1. The volume per septic tank for the Prohibition Zone was greater than the County average because of the large septic systems and community leach fields that are present in this zone. Septic tanks located outside the Prohibition Zone used the same volume per septic tank calculated in Table 1.

In order to calculate a volume per septic tank for the Prohibition Zone, this analysis used the Benefit Units (BUs) calculation from the Engineer's Report for the San Luis Obispo County Wastewater Assessment District No. 1 (Engineer's Report) dated December 18, 2007 prepared by the Wallace Group. The Engineer's Report established that within the Prohibition Zone, even though there are 4,281 septic tanks, factoring in the multiple users

served by these septic tanks, there is an equivalent of 5,353 single family residences served. The Engineer's Report presented the information in terms of BUs. One BU is equivalent to one single-family residence. If 4,281 septic tanks generate as much septage as 5,353 equivalent single-family residences, then the gallons per septic tank for the Prohibition Zone must equal to 1,500.

For the remainder of this technical memorandum, 1,500 gallons per septic tank will be used when calculating septage disposal originating within the Prohibition Zone, and 1,200 gallons per septic tank will be used for areas outside of the Prohibition Zone and countywide. Based on the pumping statistics calculated and summarized above, the following septic pumping rates shown in Table 2 were calculated for Los Osos and are assumed to represent current conditions.

Table 2 Los Osos Septic Pumping Statistics
Los Osos Wastewater Project Development
San Luis Obispo County

Item	Value
Current Septic Tanks Within Prohibition Zone	4,281
Current Septic Tanks Outside Prohibition Zone	605
Current Pumping Frequency	Once every 10 years
Number of Septic Tanks Pumped Annually Within Prohibition Zone	428
Number of Septic Tanks Pumped Annually Outside Prohibition Zone	61
Annual Septage Pumped Within Prohibition Zone(1)	642,000 gallons per year
Annual Septage Pumped Outside Prohibition Zone(2)	73,000 gallons per year
Total Annual Septage Pumped in Los Osos	715,000 gallons per year
Average Daily Pumping(3)	2,860 gallons per day (gpd)

Notes:
(1) (428 septic tanks) * (1,500 gallons per septic tank) = 642,000 gallons per year
(2) (61 septic tanks) * (1,200 gallons per septic tank) = 73,000 gallons per year
(3) Assumes septic tanks are pumped out during a 250-day period each year

3.3 Base Case: Los Osos Septic Pumping Only

The base case evaluated the amount of septage that would be pumped and disposed at the wastewater treatment plant from the community only. This could be considered the minimum amount of septage that would be received by the treatment plant, or the first phase of a regional septage-receiving program that services the County at-large.

The proposed waste discharge requirements (WDRs) will require that Los Osos property owners with septic tanks implement a septic tank management program. This program will

likely require that owners pump and inspect septic tanks once every five years. The WDR requirements would be implemented apart from the Regional Board Basin Plan or the AB 885 regulations, but the outcome for Los Osos would be the same.

If a gravity/low pressure collection system is the selected option, then all septic tanks within the Prohibition Zone will be replaced with sewer laterals, and 605 septic connections would remain outside the zone in year 2011. At build-out, the number of septic tanks will increase to 749 outside of the Prohibition Zone. If the STEP/STEG collection system were the selected option, then 4,281 new septic tanks would replace existing ones within the Prohibition Zone in year 2011 and a total of 4,769 septic tanks would be installed by build-out. The septic tanks outside the Prohibition Zone would continue to operate in a STEP/STEG system. Therefore, the total number of septic tanks at build-out would be 5,518 (4,769 + 749).

3.3.1 Gravity/Low Pressure System

In a gravity system, there would be much less septic tank pumping because only 605 septic connections would remain initially after the treatment plant comes on-line and 749 at build-out. Even with increasing the pumping frequency to once every five years, the annual pumping drops by nearly 75 percent in the first year the plant comes on-line when compared to existing conditions, as shown in Table 3.

Table 3 Gravity System Septic Pumping in Los Osos
Los Osos Wastewater Project Development
San Luis Obispo County

Item	Value
Septic Tanks Outside Prohibition Zone	605 (Current)/ 749 (Build-out)
Pumping Frequency	Once every 5 years
Number of Septic Tanks Pumped Annually	121 (Current)/ 150 (Build-out)
Annual Septage Pumped(1) (gallons per year)	145,000 (Current)/ 180,000 (Build-out)
Average Daily Pumping(2) (gpd)	580 (Current)/ 720 (Build-out)

Notes:
(1) (No. of septic tanks) * (1,200 gallons per septic tank) = Annual Septage Pumped.
(2) Assumes septic tanks are pumped out during a 250-day period each year.

3.3.2 STEP/STEG System

In a STEP/STEG system, there would be more septic tank pumping when compared to existing conditions and the gravity system. The number of septic connections remains the same and more are added through build-out. The frequency of pumping increases to once every five years after the treatment plant comes on-line, essentially doubling the pumping over existing conditions, as shown in Table 4. One item to note is that the new STEP/STEG septic tanks would not be pumped within the first five years following installation. In other

words, between 2011 and 2015, only the septic tanks outside the Prohibition Zone would be pumped.

Table 5 provides a comparison of the Base Case annual septic pumping rates for a gravity/low pressure and STEP/STEG system from 2011 through 2031, and also includes existing pumping rates.

Table 4 STEP/STEG System Septic Pumping in Los Osos
Los Osos Wastewater Project Development
San Luis Obispo County

Item	Value
Septic Tanks Within Prohibition Zone(1)	4,403 (year 2016)/ 4,769 (Build-out)
Septic Tanks Outside Prohibition Zone	641 (year 2016)/ 749 (Build-out)
Pumping Frequency	Once every 5 years
Number of Septic Tanks Within Prohibition Zone Pumped Annually	881 (year 2016)/ 954 (Build-out)
Number of Septic Tanks Outside Prohibition Zone Pumped Annually	128 (year 2016/ 150 (Build-out)
Annual Septage Pumped Within Prohibition Zone(2)(gallons per year)	1,322,000 (year 2016)/ 1,431,000 (Build-out)
Annual Septage Pumped Outside Prohibition Zone(3)	154,000 (year 2016)/ 180,000 (Build-out)
Total Annual Septage Pumped in Los Osos	1,476,000 (year 2016)/ 1,611,000 (Build-out)
Average Daily Pumping(4)(gpd)	5,900 (year 2016)/ 6,400 (Build-out)

Notes:
(1) Year 2016 is assumed the first year that STEP/STEG septic tanks would be pumped.
(2) (No. of septic tanks) * (1,500 gallons per septic tank) = Annual Septage Pumped.
(3) (No. of septic tanks) * (1,200 gallons per septic tank) = Annual Septage Pumped.
(4) Assumes septic tanks are pumped out during a 250-day period each year.

3.4 Regional Septage Receiving Station

The previous section discussed the possible annual and daily septage rates that could be disposed at the future Los Osos wastewater treatment plant, if the receiving station only served the community of Los Osos. This section forecasts a range of possible septage disposal scenarios. The different scenarios account for the variability in countywide septic pumping resulting from implementation of the Regional Board Basin Plan or AB 885, the construction of new on-site wastewater treatment systems, and the likelihood that septage haulers would use a new septage receiving station in Los Osos.

The first step in evaluating a regional septage receiving station is the analysis of County septage haulers. The County's memorandum on liquid waste haulers provided monthly septage hauling amounts and the geographical origin of the waste (e.g. north coast, north

Table 5 Base Case Septic Pumping Projections
Los Osos Wastewater Project Development
San Luis Obispo County

Year	Gravity System (gallons per year)	STEP/STEG System[3] (gallons per year)
2007[1]	714,800	714,800
2008	714,800	714,800
2009	714,000	714,800
2010	714,000	714,800
2011[2]	145,200	145,200
2012	146,900	146,900
2013	148,700	148,700
2014	150,400	150,400
2015	152,100	152,100
2016	153,800	1,474,700
2017	155,600	1,483,800
2018	157,300	1,492,800
2019	159,000	1,501,900
2020	160,800	1,511,000
2021	162,500	1,520,000
2022	164,200	1,529,000
2023	165,900	1,538,000
2024	167,700	1,547,200
2025	169,400	1,556,200
2026	171,100	1,565,200
2027	172,800	1,574,200
2028	174,600	1,583,300
2029	176,300	1,592,400
2030	178,000	1,601,400
2031	179,800	1,610,500

Notes:
(1) Years 2007 through 2010 assume that septic tanks are pumped approximately once every 10 years, or 489 septic tanks per year.
(2) 2011 is assumed first year of WWTP operation. Assumed that septic tank management program will require pumping once every 5 years beginning in 2011.
(3) Between 2011 and 2015, the new septic tanks installed for the STEP/STEG system will not be pumped. Only the septic tanks outside the Prohibition Zone will be pumped during this time. Pumping of STEP/STEG septic tanks will begin in 2016.

County or South County). The waste haulers also speculated on whether they would use an alternative septage receiving station located in Los Osos, instead of traveling to the City of Santa Maria Wastewater Treatment Plant or other facility. Most waste haulers would consider a septage receiving station in Los Osos, in particular those that pump in the north

County. Haulers that work primarily in the south County would not consider driving to Los Osos. Based on this information, a percent probability was assigned to each hauler and a range of possible septage disposal quantities were calculated.

Table 6 presents a summary of the 2007 monthly and annual septage pumping quantity by waste hauler. It also includes a low and high estimate of the annual septage that could be disposed at the future Los Osos treatment plant. In 2007, approximately 3.7 MG of septage was pumped in the County. Of this amount, between 1.4 and 1.8 MG of septage (between 39 and 48 percent) could possibly have been disposed at a septage receiving station in Los Osos. Note that these are countywide statistics and include septage from Los Osos. If we subtract septic pumping that originates in Los Osos from the countywide total, then approximately 3.0 MG of septage outside of Los Osos was pumped and disposed. Of this amount we could expect that somewhere between 1.2 and 1.4 MG would be disposed at the Los Osos septage receiving station, which equates to approximately 4,600 to 5,700 gpd.

3.4.1 Regional Board Basin Plan or AB 885 Impact on County Septic Pumping

As mentioned previously, the Regional Board Basin Plan or AB 885 will essentially double the amount of septic pumping in the County. If the regulations are implemented by 2011, then the countywide annual septic pumping rates (outside of Los Osos) could increase to approximately 5.8 MG. If we assume that somewhere between 39 and 48 percent of this septage would be disposed in Los Osos, then approximately 2.3 to 2.8 MG per year would be hauled to the treatment plant, which equates to approximately 9,000 to 11,000 gpd.

3.4.2 New On-Site Wastewater Treatment Systems

The County's December 12, 2007 liquid waste memorandum reported that 300 new septic connections occur in the County each year due to new construction. The volume of pumped septage from these new connections depends on the frequency of pumping (once every five or ten years). Septic pumping estimates were developed for each of these situations, as shown in Table 7. Consistent with previous assumptions and calculations, pumping every five years starts in year 2011. Table 7 also shows the possible annual flow that would be disposed at the Los Osos treatment plant's septage receiving station. The low estimate assumed that 39 percent of all new septic tank pumping would be disposed at the receiving station, and the high estimate assumed that 48 percent would be disposed.

3.4.3 Countywide Septic Pumping Projections

The previous discussions summarized the range of countywide septic pumping projections, and the possible range of annual septage disposal at the future treatment plant receiving station. The primary variables in the range of projections include:

- Los Osos Collection System (Gravity/Low Pressure or STEP/STEG)

Table 6 **Year 2007 Septic Pumping by Company**
Los Osos Wastewater Project Development
San Luis Obispo County

Company Name[1]	Monthly Septage[2] (gallons)	Chemical Toilet (gal)	Grease (gal)	Annual Septage (gallons)	Possible Percent to LOWWTP		Possible Annual Flow to LOWWTP	
					Low Range[3]	High Range[3]	Low Estimate (gallons)	High Estimate (gallons)
Advanced Wastewater Systems, Inc.	37,328			447,900	0%	50%	0	224,000
Al's Septic Pumping Service	74,319			891,800	50%	50%	445,900	445,900
American Marborg	0	42,456		0	50%	50%	0	0
Ameriguard Maintenance Service	0	2,910	11,153	0	0%	0%	0	0
Barks Plumbing and Appliance	7,375		4,058	88,500	0%	0%	0	0
Calderwood, Dawn	0			0	0%	0%	0	0
Central Coast Industries, Inc.	37,867		30,638	454,400	57%	57%	259,000	259,000
Clay's Septic Services	37,839		27,505	454,100	15%	15%	68,100	68,100
E T Services (Metro Rooter)	0		750	0	0%	0%	0	0
Fluid Resource Management	0			0	0%	0%	0	0
Harvey's Honeyhuts	0	23,100		0	0%	0%	0	0
Ingram & Greene Sanitation	35,511			426,100	100%	100%	426,100	426,100
J W Interprises	0			0	0%	0%	0	0
Lake Nacimiento Resort	No Data Available							
Lopez, James	No Data Available							
M P Vacuum Truck Service	No Data Available							
North County Septic	12,493			149,900	80%	80%	119,900	119,900
Oceano Dunes SVRA	4,838		575	58,100	0%	0%	0	0
Portable Johns, Inc	0	13,720		0	0%	5%	0	0
Soares Vacuum Service	10,875			130,500	0%	0%	0	0
Speed's	0			0	0%	0%	0	0
Story Construction	5,000			60,000	50%	50%	30,000	30,000
55								
Valley Septic Service	23,955		5,111	287,500	30%	30%	86,300	86,300
Yo Banana Boy, Inc.	20,256			243,100	0%	50%	0	121,600
Total	**307,656**	**82,186**	**79,790**	**3,691,900**			**1,435,300**	**1,780,900**
						Percent of Annual Total	**39%**	**48%**

Notes:
(1) Septage totals from the December 12, 2007 memorandum prepared by Mary Whittlesey, County Waste Coordinator.
(2) Average monthly septage from January through September, 2007.
(3) Low and high range based on Attachment A from the December 12, 2007 memorandum. Attachment A included estimate of percent flow that originates in north San Luis Obispo County, and probability that company would use the Los Osos WWTP.

Information on flow origination was not provided for three of the companies shown shaded.

Table 7 **New Septic Tanks in County**
Los Osos Wastewater Project Development
San Luis Obispo County

Year	New Septic Tanks[1] (gallons)	Septic Tanks Pumped Once every 10 Years Per Current Practice			Septic Tanks Pumped Once Every 5 Years		
			Possible Annual Flow to LOWWTP			Possible Annual Flow to LOWWTP	
		Pumped Septage[3] (gallons)	Low Estimate (gallons)[4]	High Estimate (gallons)[5]	Pumped Septage[2] (gallons)	Low Estimate (gallons)[4]	High Estimate (gallons)[5]
2007	0	0	0	0	0	0	0
2008	360,000	36,000	0	0	36,000	0	0
2009	720,000	72,000	0	0	72,000	0	0
2010	1,080,000	108,000	0	0	108,000	0	0
2011	1,440,000	144,000	56,200	69,100	288,000	112,300	138,200
2012	1,800,000	180,000	70,200	86,400	360,000	140,400	172,800
2013	2,160,000	216,000	84,200	103,700	432,000	168,500	207,400
2014	2,520,000	252,000	98,300	121,000	504,000	196,600	241,900
2015	2,880,000	288,000	112,300	138,200	576,000	224,600	276,500
2016	3,240,000	324,000	126,400	155,500	648,000	252,700	311,000
2017	3,600,000	360,000	140,400	172,800	720,000	280,800	345,600
2018	3,960,000	396,000	154,400	190,100	792,000	308,900	380,200
2019	4,320,000	432,000	168,500	207,400	864,000	337,000	414,700
2020	4,680,000	468,000	182,500	224,600	936,000	365,000	449,300
2021	5,040,000	504,000	196,600	241,900	1,008,000	393,100	483,800
2022	5,400,000	540,000	210,600	259,200	1,080,000	421,200	518,400
2023	5,760,000	576,000	224,600	276,500	1,152,000	449,300	553,000
2024	6,120,000	612,000	238,700	293,800	1,224,000	477,400	587,500
2025	6,480,000	648,000	252,700	311,000	1,296,000	505,400	622,100
2026	6,840,000	684,000	266,800	328,300	1,368,000	533,500	656,600
2027	7,200,000	720,000	280,800	345,600	1,440,000	561,600	691,200
2028	7,560,000	756,000	294,800	362,900	1,512,000	589,700	725,800
2029	7,920,000	792,000	308,900	380,200	1,584,000	617,800	760,300
2030	8,280,000	828,000	322,900	397,400	1,656,000	645,800	794,900
2031	8,640,000	864,000	337,000	414,700	1,728,000	673,900	829,400

Notes:
(1) 300 new septic tanks per year are installed throughout the County.
(2) Septic tanks will be pumped once every 5 years starting in year 2011, per the implementation of AB885 or the Basin Plan. Between 2008 and 2010, septic tanks are pumped once every 10 years.
(3) Septic tanks will be pumped once every 10 years, based on current pumping practice.
(4) Based on year 2007 data, LOWWTP could expect a low of 39% of total County septage.
(5) Based on year 2007 data, LOWWTP could expect a high of 48% of total County septage.

- Septage origination (north County versus south County)
- Implementation of the Regional Board Basin Plan or AB 885 or continuation of current pumping practice (septic pumping once every five or ten years)
- Addition of new On-Site Wastewater Treatment Systems (new septic tanks)

Tables 8 and 9 forecast the countywide annual septic pumping rates for the ten-year and five-year pumping frequencies, respectively. The last two columns in each table provide the summation of countywide pumping totals depending on whether a gravity/low pressure or STEP/STEG collection system is selected for Los Osos. The projections went out to year 2031. Note that these are septic pumping totals, not septage disposal projections at the Los Osos facility.

The next step was forecasting how much of the countywide septic pumping would be disposed at the proposed treatment plant's septage receiving station. The same 39 and 48 percent split for the low and high range was used in the calculation. It was assumed that 100 percent of septage from the community would be disposed at the receiving station.

If the septage receiving station served as a regional facility and accepted waste from outside of Los Osos, then Tables 10 and 11 forecast the range of possible annual septic pumping that could be disposed for the ten-year and five year pumping frequencies, respectively. The last two headings in each table provide the summation of countywide septage that could be disposed if the receiving station were used as a regional facility. The difference between the two headings depends on whether a gravity/low pressure or STEP/STEG collection system is selected for Los Osos.

As shown in Tables 10 and 11, the Base Case gravity/low pressure collection system would result in the lowest amount of septage being disposed at the receiving station. A STEP/STEG collection system produces about seven times more septage than the gravity system.

If the septage receiving station operated as a regional facility and a gravity collection system were installed in the community, then the amount of septage received from outside of Los Osos represents approximately 90 percent of the total. In the first year of operation, approximately 5,500 to 6,600 gpd of septage could be disposed at the receiving station. If a STEP/STEG collection system were installed, then about half the septage would originate in Los Osos, and the other half from throughout the County. In year 2016, when the first STEP/STEG septic tanks are scheduled for pumping, approximately 11,100 to 12,200 gpd of septage could be disposed at the receiving station. As shown in Table 11, if septic tank pumping occurred once every five years, then the projections would higher.

4.0 BOD AND SOLIDS LOADING

The Fine Screening Analysis (Carollo, August 2007) and the Final Draft Flows and Loads Technical Memorandum (Carollo, February 2008) presented the treatment plant's influent

Table 8 **Countywide Septic Pumping (Tanks Pumped Every 10 Years)**
Los Osos Wastewater Project Development
San Luis Obispo County

Year	Base Case: Los Osos Only[2]		SLO County Septic Pumping[1][3] (gallons per year)	New Septic Tanks[1][4] (gallons per year)	Regional Septic Pumping: Gravity System[5] (includes gravity, County and new septic tanks) (gallons per year)	Regional Septic Pumping: STEP/STEG System[6] (includes STEP/STEG, County and new septic tanks) (gallons per year)
	Gravity System (gallons per year)	STEP/STEG System (gallons per year)				
2007	714,800	714,800	2,977,100	0	3,691,900	3,691,900
2008	714,800	714,800	2,977,100	36,000	3,727,900	3,727,900
2009	714,800	714,800	2,977,100	72,000	3,763,900	3,763,900
2010	714,800	714,800	2,977,100	108,000	3,799,900	3,799,900
2011	145,200	145,200	2,977,100	144,000	3,266,300	3,266,300
2012	146,900	146,900	2,977,100	180,000	3,304,000	3,304,000
2013	148,700	148,700	2,977,100	216,000	3,341,800	3,341,800
2014	150,400	150,400	2,977,100	252,000	3,379,500	3,379,500
2015	152,100	152,100	2,977,100	288,000	3,417,200	3,417,200
2016	153,800	1,474,700	2,977,100	324,000	3,454,900	4,775,800
2017	155,600	1,483,800	2,977,100	360,000	3,492,700	4,820,900
2018	157,300	1,492,800	2,977,100	396,000	3,530,400	4,865,900
2019	159,000	1,501,900	2,977,100	432,000	3,568,100	4,911,000
2020	160,800	1,511,000	2,977,100	468,000	3,605,900	4,956,100
2021	162,500	1,520,000	2,977,100	504,000	3,643,600	5,001,100
2022	164,200	1,529,000	2,977,100	540,000	3,681,300	5,046,100
2023	165,900	1,538,000	2,977,100	576,000	3,719,000	5,091,100
2024	167,700	1,547,200	2,977,100	612,000	3,756,800	5,136,300
2025	169,400	1,556,200	2,977,100	648,000	3,794,500	5,181,300
2026	171,100	1,565,200	2,977,100	684,000	3,832,200	5,226,300
2027	172,800	1,574,200	2,977,100	720,000	3,869,900	5,271,300
2028	174,600	1,583,300	2,977,100	756,000	3,907,700	5,316,400
2029	176,300	1,592,400	2,977,100	792,000	3,945,400	5,361,500
2030	178,000	1,601,400	2,977,100	828,000	3,983,100	5,406,500
2031	179,800	1,610,500	2,977,100	864,000	4,020,900	5,451,600

Notes:
(1) Septic tanks outside of Los Osos are pumped once every 10 years, per current practice.
(2) Base case includes septic pumping for Los Osos only, for either a gravity or STEP/STEG system. Septic tanks pumped once every 10 years from 2007 through 2010, and once every 5 years starting in year 2011.
(3) 2007 septic pumping based on data in the December 12, 2007 memorandum prepared by Mary Whittlesey, County Waste Coordinator. Includes Countywide pumping except for pumping in Los Osos.
(4) 300 new septic tanks per year are installed throughout the County.
(5) Regional septic pumping is the summation of the Base Case for a gravity system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.
(6) Regional septic pumping is the summation of the Base Case for a STEP/STEG system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.

Table 9 **Countywide Septic Pumping (Tanks Pumped Every 5 Years)**
Los Osos Wastewater Project Development
San Luis Obispo County

Year	Base Case: Los Osos Only[2]		SLO County Septic Pumping[1][3] (gallons per year)	New Septic Tanks [1][4] (gallons per year)	Regional Septic Pumping: Gravity System[5] (gallons per year)	Regional Septic Pumping: STEP/STEG System[6] (gallons per year)
	Gravity System (gallons per year)	STEP/STEG System (gallons per year)				
2007	714,800	714,800	2,977,1 00	0	3,691,900	3,691,900
2008	714,800	714,800	2,977,100	36,000	3,727,900	3,727,900
2009	714,800	714,800	2,977,100	72,000	3,763,900	3,763,900
2010	714,800	714,800	2,977,100	108,000	3,799,900	3,799,900
2011	145,200	145,200	5,770,500	288,000	6,203,700	6,203,700
2012	146,900	146,900	5,770,500	360,000	6,277,400	6,277,400
2013	148,700	148,700	5,770,500	432,000	6,351,200	6,351,200
2014	150,400	150,400	5,770,500	504,000	6,424,900	6,424,900
2015	152,100	152,100	5,770,500	576,000	6,498,600	6,498,600
2016	153,800	1,474,700	5,770,500	648,000	6,572,300	7,893,200
2017	155,600	1,483,800	5,770,500	720,000	6,646,100	7,974,300
2018	157,300	1,492,800	5,770,500	792,000	6,719,800	8,055,300
2019	159,000	1,501,900	5,770,500	864,000	6,793,500	8,136,400
2020	160,800	1,511,000	5,770,500	936,000	6,867,300	8,217,500
2021	162,500	1,520,000	5,770,500	1,008,000	6,941,000	8,298,500
2022	164,200	1,529,000	5,770,500	1,080,000	7,014,700	8,379,500
2023	165,900	1,538,000	5,770,500	1,152,000	7,088,400	8,460,500
2024	167,700	1,547,200	5,770,500	1,224,000	7,162,200	8,541,700
2025	169,400	1,556,200	5,770,500	1,296,000	7,235,900	8,622,700
2026	171,100	1,565,200	5,770,500	1,368,000	7,309,600	8,703,700
2027	172,800	1,574,200	5,770,500	1,440,000	7,383,300	8,784,700
2028	174,600	1,583,300	5,770,500	1,512,000	7,457,100	8,865,800
2029	176,300	1,592,400	5,770,500	1,584,000	7,530,800	8,946,900
2030	178,000	1,601,400	5,770,500	1,656,000	7,604,500	9,027,900
2031	179,800	1,610,500	5,770,500	1,728,000	7,678,300	9,109,000

Notes:
(1) Septic tanks outside of Los Osos are pumped once every 10 years, from 2007 through 2010. Starting in year 2011, septic tanks pumped once every 5 years per AB885 or by Regional Board Basin Plan.
(2) Base case includes septic pumping for Los Osos only, for either a gravity or STEP/STEG system. Septic tanks pumped once every 10 years from 2007 through 2010, and once every 5 years starting in year 2011.
(3) 2007 septic pumping based on data in the December 12, 2007 memorandum prepared by Mary Whittlesey, County Waste Coordinator. Includes Countywide pumping except for pumping in Los Osos.
(4) 300 new septic tanks per year are installed throughout the County.
(5) Regional septic pumping is the summation of the Base Case for a gravity system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.
(6) Regional septic pumping is the summation of the Base Case for a STEP/STEG system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.

Table 10 **Countywide Possible Annual Septage to Treatment Plant (Tanks Pumped Every 10 Years)**
Los Osos Wastewater Project Development
San Luis Obispo County

Year	Base Case: Los Osos Only[2]		SLO County Septic Pumping[1][3] Possible Annual Septage to LOWWTP		New Septic Tanks[1][4] Possible Annual Septage to LOWWTP		Regional Septic Pumping: Gravity System[5] Possible Annual Septage to LOWWTP				Regional Septic Pumping: STEP/STEG System[6] Possible Annual Septage to LOWWTP			
	Gravity System (gallons per year)	STEP/STEG System (gallons per year)	Low Estimate (gallons per year)[7]	High Estimate (gallons per year)[8]	Low Estimate (gallons per year)[7]	High Estimate (gallons per year)[8]	Low Estimate (gallons per year)[7]	Low Estimate (gpd)[9]	High Estimate (gallons per year)[8]	High Estimate (gpd)[9]	Low Estimate (gallons per year)[7]	Low Estimate (gpd)[9]	High Estimate (gallons per year)[8]	High Estimate (gpd)[9]
2007	714,800	714,800	0	0	0	0	0	0	0		0	0	0	0
2008	714,800	714,800	0	0	0	0	0	0	0	0	0	0	0	0
2009	714,800	714,800	0	0	0	0	0	0	0	0	0	0	0	0
2010	714,800	714,800	0	0	0	0	0	0	0	0	0	0	0	0
2011	145,200	145,200	1,161,100	1,429,000	56,200	69,100	1,362,500	5,450	1,643,300	6,570	1,362,500	5,540	1,643,300	6,570
2012	146,900	146,900	1,161,100	1,429,000	70,200	86,400	1,378,200	5,510	1,662,300	6,650	1,378,200	5,510	1,662,300	6,650
2013	148,700	148,700	1,161,100	1,429,000	84,200	103,700	1,394,000	5,580	1,681,400	6,730	1,394,000	5,580	1,681,400	6,730
2014	150,400	150,400	1,161,100	1,429,000	98,300	121,000	1,409,800	5,640	1,700,400	6,800	1,409,800	5,640	1,700,400	6,800
2015	152,100	152,100	1,161,100	1,429,000	112,300	138,200	1,425,500	5,700	1,719,300	6,880	1,425,500	5,700	1,719,300	6,880
2016	153,800	1,474,700	1,161,100	1,429,000	126,400	155,500	1,441,300	5,770	1,738,300	6,950	2,762,200	11,050	3,059,200	12,240
2017	155,600	1,483,800	1,161,100	1,429,000	140,400	172,800	1,457,100	5,830	1,757,400	7,030	2,785,300	11,140	3,085,600	12,340
2018	157,300	1,492,800	1,161,100	1,429,000	154,400	190,100	1,472,800	5,890	1,776,400	7,110	2,808,300	11,230	3,111,900	12,450
2019	159,000	1,501,900	1,161,100	1,429,000	168,500	207,400	1,488,600	5,950	1,795,400	7,180	2,831,500	11,330	3,138,300	12,550
2020	160,800	1,511,000	1,161,100	1,429,000	182,500	224,600	1,504,400	6,020	1,814,400	7,260	2,854,600	11,420	3,164,600	12,660
2021	162,500	1,520,000	1,161,100	1,429,000	196,600	241,900	1,520,200	6,080	1,833,400	7,330	2,877,700	11,510	3,190,900	12,760
2022	164,200	1,529,000	1,161,100	1,429,000	210,600	259,200	1,535,900	6,140	1,852,400	7,410	2,900,700	11,600	3,217,200	12,870
2023	165,900	1,538,000	1,161,100	1,429,000	224,600	276,500	1,551,600	6,210	1,871,400	7,490	2,923,700	11,690	3,243,500	12,970
2024	167,700	1,547,200	1,161,100	1,429,000	238,700	293,800	1,567,500	6,270	1,890,500	7,560	2,947,000	11,790	3,270,000	13,080
2025	169,400	1,556,200	1,161,100	1,429,000	252,700	311,000	1,583,200	6,330	1,909,400	7,640	2,970,000	11,880	3,296,200	13,180
2026	171,100	1,565,200	1,161,100	1,429,000	266,800	328,300	1,599,000	6,400	1,928,400	7,710	2,993,100	11,970	3,322,500	13,290
2027	172,800	1,574,200	1,161,100	1,429,000	280,800	345,600	1,614,700	6,460	1,947,400	7,790	3,016,100	12,060	3,348,800	13,400
2028	174,600	1,583,300	1,161,100	1,429,000	294,800	362,900	1,630,500	6,520	1,966,500	7,870	3,039,200	12,160	3,375,200	13,500
2029	176,300	1,592,400	1,161,100	1,429,000	308,900	380,200	1,646,300	6,590	1,985,500	7,940	3,062,400	12,250	3,401,600	13,610
2030	178,000	1,601,400	1,161,100	1,429,000	322,900	397,400	1,662,000	6,650	2,004,400	8,020	3,085,400	12,340	3,427,800	13,710
2031	179,800	1,610,500	1,161,100	1,429,000	337,000	414,700	1,677,900	6,710	2,023,500	8,090	3,108,600	12,430	3,454,200	13,820

Notes:
(1) Septic tanks outside of Los Osos are pumped once every 10 years, per current practice.
(2) Base case includes septic pumping for Los Osos only, for either a gravity or STEP/STEG system. Septic tanks pumped once every 10 years from 2007 through 2010, and once every 5 years starting in year 2011.
(3) 2007 septic pumping based on data in the December 12, 2007 memorandum prepared by Mary Whittlesey, County Waste Coordinator. Includes Countywide pumping except for pumping in Los Osos.
(4) 300 new septic tanks per year are installed throughout the County.
(5) Regional septic pumping is the summation of the Base Case for a gravity system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.
(6) Regional septic pumping is the summation of the Base Case for a STEP/STEG system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.
(7) Based on year 2007 data, LOWWTP could expect a low of 39% of total County septage.
(8) Based on year 2007 data, LOWWTP could expect a high of 48% of total County septage.
(9) Assume 250 working days per year to transport septage to receiving station.

Table 11 **Countywide Possible Annual Septage to Treatment Plant (Tanks Pumped Every 5 Years)**
Los Osos Wastewater Project Development
San Luis Obispo County

Year	Base Case: Los Osos Only[2]		SLO County Septic Pumping[1][3] Possible Annual Septage to LOWWTP		New Septic Tanks[1][4] Possible Annual Septage to LOWWTP		Regional Septic Pumping: Gravity System[5] Possible Annual Septage to LOWWTP				Regional Septic Pumping: STEP/STEG System[6] Possible Annual Septage to LOWWTP			
	Gravity System (gallons per year)	STEP/STEG System (gallons per year)	Low Estimate (gallons per year)[7]	High Estimate (gallons per year)[8]	Low Estimate (gallons per year)[7]	High Estimate (gallons per year)[8]	Low Estimate (gallons per year)[7]	Low Estimate (gpd)[9]	High Estimate (gallons per year)[8]	High Estimate (gpd)[9]	Low Estimate (gallons per year)[7]	Low Estimate (gpd)[9]	High Estimate (gallons per year)[8]	High Estimate (gpd)[9]
2007	714,800	714,800	0	0	0	0	0	0	0	0	0	0	0	
2008	714,800	714,800	0	0	0	0	0	0	0	0	0	0	0	
2009	714,800	714,800	0	0	0	0	0	0	0	0	0	0	0	0
2010	714,800	714,800	0	0	0	0	0	0	0	0	0	0	0	0
2011	145,200	145,200	2,250,500	2,769,800	112,300	138,200	2,508,000	10,030	3,053,200	12,210	2,508,000	10,030	3,053,200	12,210
2012	146,900	146,900	2,250,500	2,769,800	140,400	172,800	2,537,800	10,150	3,089,500	12,360	2,537,800	10,150	3,289,500	12,360
2013	148,700	148,700	2,250,500	2,769,800	168,500	207,400	2,567,700	10,270	3,125,900	12,500	2,567,700	10,270	3,125,900	12,500
2014	150,400	150,400	2,250,500	2,769,800	196,600	241,900	2,597,500	10,390	3,162,100	12,650	2,597,500	10,390	3,162,100	12,650
2015	152,100	152,100	2,250,500	2,769,800	224,600	276,500	2,627,200	10,510	3,198,400	12,790	2,627,200	10,510	3,198,400	12,790
2016	153,800	1,474,700	2,250,500	2,769,800	252,700	311,000	2,657,000	10,630	3,234,600	12,940	3,977,900	15,910	4,555,500	18,220
2017	155,600	1,483,800	2,250,500	2,769,800	280,800	345,600	2,686,900	10,750	3,271,000	13,080	4,015,100	16,060	4,599,200	18,400
2018	157,300	1,492,800	2,250,500	2,769,800	308,900	380,200	2,716,700	10,870,	3,307,300	13,230	4,052,200	16,210	4,642,800	18,570
2019	159,000	1,501,900	2,250,500	2,769,800	337,000	414,700	2,746,500	10,990	3,343,500	13,370	4,089,400	16,360	4,686,400	18,750
2020	160,800	1,511,000	2,250,500	2,769,800	365,000	449,300	2,776,300	11,110	3,379,900	13,520	4,126,500	16,510	4,730,100	18,920
2021	162,500	1,520,000	2,250,500	2,769,800	393,100	483,800	2,806,100	11,220	3,416,100	13,660	4,163,600	16,650	4,773,600	19,090
2022	164,200	1,529,000	2,250,500	2,769,800	421,200	518,400	2,835,900	11,340	3,452,400	13,810	4,200,700	16,800	4,817,200	19,270
2023	165,900	1,538,000	2,250,500	2,769,800	449,300	553,000	2,865,700	11,460	3,488,700	13,950	4,237,800	16,950	4,860,800	19,440
2024	167,700	1,547,200	2,250,500	2,769,800	477,400	587,500	2,895,600	11,580	3,525,000	14,100	4,275,100	17,100	4,904,500	19,620
2025	169,400	1,556,200	2,250,500	2,769,800	505,400	622,100	2,925,300	11,700	3,561,300	14,250	4,312,100	17,250	4,948,100	19,790
2026	171,100	1,565,200	2,250,500	2,769,800	533,500	656,600	2,955,100	11,820	3,597,500	14,390	4,349,200	17,400	4,991,600	19,970
2027	172,800	1,574,200	2,250,500	2,769,800	561,600	691,200	2,984,900	11,940	3,633,800	14,540	4,386,300	17,550	5,035,200	20,140
2028	174,600	1,583,300	2,250,500	2,769,800	589,700	725,800	3,014,800	12,060	3,670,200	14,680	4,423,500	17,690	5,078,900	20,320
2029	176,300	1,592,400	2,250,500	2,769,800	617,800	760,300	3,044,600	12,180	3,706,400	14,830	4,460,700	17,840	5,122,500	20,490
2030	178,000	1,601,400	2,250,500	2,769,800	645,800	794,900	3,074,300	12,300	3,742,700	14,970	4,497,700	17,990	5,166,100	20,660
2031	179,800	1,610,500	2,250,500	2,769,800	673,900	829,400	3,104,200	12,420	3,779,000	15,120	4,534,900	18,140	5,209,700	20,840

Notes:
(1) Septic tanks outside of Los Osos are pumped once every 10 years, from 2007 through 2010. Starting in year 2011, septic tanks pumped once every 5 years per AB 885, or by Regional Board Basin Plan.
(2) Base case includes septic pumping for Los Osos only, for either a gravity or STEP/STEG system. Septic tanks pumped once every 10 years from 2007 through 2010, and once every 5 years starting in year 2011.
(3) 2007 septic pumping based on data in the December 12, 2007 memorandum prepared by Mary Whittlesey, County Waste Coordinator. Includes Countywide pumping except for pumping in Los Osos.
(4) 300 new septic tanks per year are installed throughout the County.
(5) Regional septic pumping is the summation of the Base Case for a gravity system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.
(6) Regional septic pumping is the summation of the Base Case for a STEP/STEG system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.
(7) Based on year 2007 data, LOWWTP could expect a low of 39% of total County septage.
(8) Based on year 2007 data, LOWWTP could expect a high of 48% of total County septage.
(9) Assume 250 working days per year to transport septage to receiving station.

flow concentrations for gravity and STEP/STEG collection systems. The treatment plant's projected average day wastewater characteristics for biochemical oxygen demand (BOD) and suspended solids (SS) are presented in Table 12. The flows and loads TM also reported that the average daily dry weather flow is projected to be 1.2 million gallons per day (mgd) at build out (without conservation). These values were used to calculate the BOD and SS loadings in pounds per day (lb/d) to the treatment plant assuming no septage.

Adding a septage receiving station to a small treatment plant impacts the BOD and SS loading of that plant. Our analysis estimated the added plant BOD and SS loadings resulting from the septage delivered to the treatment plant, and calculated the plant's daily load percent increase in these constituents. Typical septage BOD concentrations range from 2,000 to 30,000 milligrams per liter (mg/L) and for SS range from 2,000 to 100,000 mg/L (Metcalf & Eddy, Wastewater Engineering, 3rd Edition). The July 2006 Los Osos Wastewater Management Plan Update[4] assumed that the septage BOD and SS concentrations were 5,000 mg/L and 15,000 mg/L, respectively, which are typical values for these constituents. These concentrations were used for calculating BOD and SS loads from the septage receiving station and for computing the percent increase in load to the treatment process. In calculating the daily load, it was assumed that septic tanks are pumped out during a 250-day period each year. There are approximately 250 working days (Monday through Friday excluding holidays) in a year when septage disposal would occur.

Table 12 Projected Characteristics of Treatment Facility Influent Wastewater Los Osos Wastewater Project Development San Luis Obispo County

	Gravity System		STEP/STEG System	
Parameter	**(mg/L)**	**lb/d**	**(mg/L)**	**lb/d**
BOD	340	3,403	120	1,201
Suspended Solids	390	3,903	40	400

Source: Table 4.4 from the Viable Project Alternatives Fine Screening Analysis (Carollo, August 2007)

As with previous scenarios, we evaluated the different variables and the impacts that these options have on the amount of septage disposed at the receiving station and the pounds per day of BOD and SS that must be treated at the plant. Tables 13 and 14 present the BOD and SS load calculations for the various scenarios. The only difference between these two tables is Table 13 presents the load calculations for a septic tank pumping rate of once every ten years, except for Los Osos where the pumping rate is once every five years. Table 14 assumes that the pumping rate is once every five years countywide, beginning in year 2011.

[4] Los Osos Wastewater Management Plan Update, July 28, 2006, Ripley Pacific Team.

Table 13 **Countywide Possible Septage Load to Treatment Plant (Tanks Pumped Every 10 Years)**
Los Osos Wastewater Project Development
San Luis Obispo County

	Base Case: Los Osos Only[1]								Regional Septic Pumping: Gravity System[2] Daily Septage Load to LOWWTP: Possible Low and High Estimate[6]								Regional Septic Pumping: STEP/STEG System[3] Daily Septage Load to LOWWTP: Possible Low and High Estimate[6]							
	Gravity System Daily Septage Load				STEP/STEG System Daily Septage Load[6]				Low Estimate[4]				High Estimate[5]				Low Estimate[4]				High Estimate[5]			
Year	BOD (lb/d)	Percent Increase	SS (lb/d)	Percent Increase	BOD (lb/d)	Percent Increase	SS (lb/d)	Percent Increase	BOD (lb/d)	Percent Increase	SS (lb/d)	Percent Increase	BOD (lb/d	Percent Increase	SS (lb/d)	Percent Increase	BOD (lb/d)	Percent Increase	SS (lb/d)	Percent Increase	BOD (lb/d	Percent Increase	SS (lb/d)	Percent Increase
2007	119	4%	358	12%	119	13%	358	113%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	119	4%	358	12%	119	13%	358	113%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	119	4%	358	12%	119	13%	358	113%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	119	4%	358	12%	119	13%	358	113%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	24	1%	73	2%	24	3%	73	23%	227	8%	682	22%	274	10%	822	27%	227	24%	682	215%	274	29%	822	259%
2012	25	1%	74	2%	25	3%	74	23%	230	8%	690	22%	277	10%	832	27%	230	24%	690	215%	277	29%	832	259%
2013	25	1%	74	2%	25	3%	74	23%	233	8%	698	22%	280	10%	841	26%	233	24%	698	214%	280	29%	841	258%
2014	25	1%	75	2%	25	3%	75	23%	235	8%	705	22%	284	10%	851	26%	235	24%	705	214%	284	29%	851	258%
2015	25	1%	76	2%	25	3%	76	23%	238	8%	713	22%	287	10%	860	26%	238	24%	713	213%	287	29%	860	257%
2016	26	1%	77	2%	246	24%	738	218%	240	8%	721	22%	290	10%	870	26%	461	45%	1,382	407%	510	50%	1,531	451%
2017	26	1%	78	2%	247	24%	742	216%	243	8%	729	22%	293	10%	879	26%	465	45%	1,394	406%	515	50%	1,544	449%
2018	26	1%	79	2%	249	24%	747	215%	246	8%	737	22%	296	10%	889	26%	468	45%	1,405	404%	519	50%	1,557	447%
2019	27	1%	80	2%	251	24%	752	213%	248	8%	745	22%	299	10%	898	26%	472	45%	1,417	402%	523	49%	1,570	445%
2020	27	1%	80	2%	252	24%	756	212%	251	8%	753	22%	303	10%	908	26%	476	44%	1,428	400%	528	49%	1,584	444%
2021	27	1%	81	2%	254	23%	761	210%	254	8%	761	22%	306	10%	917	26%	480	44%	1,440	398%	532	49%	1,597	442%
2022	27	1%	82	2%	255	23%	765	209%	256	8%	769	22%	309	10%	927	26%	484	44%	1,452	397%	537	49%	1,610	440%
2023	28	1%	83	2%	257	23%	770	208%	259	8%	776	22%	312	10%	936	26%	488	44%	1,463	395%	541	49%	1,623	438%
2024	28	1%	84	2%	258	23%	774	207%	261	8%	784	21%	315	10%	946	26%	492	44%	1,475	394%	545	49%	1,636	437%
2025	28	1%	85	2%	260	23%	779	205%	264	8%	792	21%	318	10%	955	26%	495	44%	1,486	392%	550	48%	1,649	435%
2026	29	1%	86	2%	261	23%	783	204%	267	8%	800	21%	322	10%	965	26%	499	43%	1,498	390%	554	48%	1,663	433%
2027	29	1%	86	2%	263	23%	788	203%	269	8%	808	21%	325	10%	974	26%	503	43%	1,509	389%	559	48%	1,676	432%
2028	29	1%	87	2%	264	22%	792	202%	272	8%	816	21%	328	10%	984	26%	507	43%	1,521	388%	563	48%	1,689	430%
2029	29	1%	88	2%	266	22%	797	201%	275	8%	824	21%	331	10%	994	26%	511	43%	1,532	386%	567	48%	1,702	429%
2030	30	1%	89	2%	267	22%	801	200%	277	8%	832	21%	334	10%	1,033	26%	515	43%	1,544	385%	572	47%	1,715	427%
2031	30	1%	90	2%	269	22%	806	199%	280	8%	840	21%	338	10%	1,013	26%	519	43%	1,556	383%	576	47%	1,728	426%

Notes:
(1) Base case includes septic pumping for Los Osos only, for either a gravity or STEP/STEG system. Septic tanks pumped once every 10 years from 2007 through 2010, and once every 5 years starting in year 2011.
(2) Regional septic pumping is the summation of the Base Case for a gravity system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.
(3) Regional septic pumping is the summation of the Base Case for a STEP/STEG system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.
(4) Based on year 2007 data, LOWWTP could expect a low of 39% of total County septage.
(5) Based on year 2007 data, LOWWTP could expect a high of 48% of total County septage.
(6) Assume 250 working days per year to transport septage to receiving station.

Table 14 **Countywide Possible Septage Load to Treatment Plant (Tanks Pumped Every 5 Years)**
Los Osos Wastewater Project Development
San Luis Obispo County

Year	Base Case: Los Osos Only[1]								Regional Septic Pumping: Gravity System[2] Daily Septage Load to LOWWTP: Possible Low and High Estimate[6]								Regional Septic Pumping: STEP/STEG System[3] Daily Septage Load to LOWWTP: Possible Low and High Estimate[6]							
	Gravity System Daily Septage Load				STEP/STEG System Daily Septage Load[6]				Low Estimate[4]				High Estimate[5]				Low Estimate[4]				High Estimate[5]			
	BOD (lb/d)	Percent Increase	SS (lb/d)	Percent Increase	BOD (lb/d	Percent Increase	SS (lb/d)	Percent Increase	BOD (lb/d)	Percent Increase	SS (lb/d)	Percent Increase	BOD (lb/d	Percent Increase	SS (lb/d)	Percent Increase	BOD (lb/d)	Percent Increase	SS (lb/d)	Percent Increase	BOD (lb/d	Percent Increase	SS (lb/d)	Percent Increase
2007	119	4%	358	12%	119	13%	358	113%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	119	4%	358	12%	119	13%	358	113%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	119	4%	358	12%	119	13%	358	113%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	119	4%	358	12%	119	13%	358	113%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	24	1%	73	2%	24	3%	73	23%	418	16%	1,255	41%	509	19%	1,528	49%	418	44%	1,255	396%	509	54%	1,528	482%
2012	25	1%	74	2%	25	3%	74	23%	423	15%	1,270	41%	515	19%	1,546	49%	423	44%	1,270	395%	515	53%	1,546	481%
2013	25	1%	74	2%	25	3%	74	23%	428	15%	1,285	40%	521	19%	1,564	49%	428	44%	1,285	394%	521	53%	1,564	480%
2014	25	1%	75	2%	25	3%	75	23%	433	15%	1,300	40%	527	19%	1,582	49%	433	44%	1,300	393%	527	53%	1,582	479%
2015	25	1%	76	2%	25	3%	76	23%	438	15%	1,315	40%	533	19%	1,600	49%	438	44%	1,315	393%	533	53%	1,600	478%
2016	26	1%	77	2%	246	24%	738	218%	443	15%	1,330	40%	540	19%	1,619	49%	664	65%	1,991	587%	760	75%	2,280	672%
2017	26	1%	78	2%	247	24%	742	216%	448	15%	1,345	40%	546	19%	1,637	49%	670	65%	2,009	585%	767	74%	2,301	670%
2018	26	1%	79	2%	249	24%	747	215%	453	15%	1,359	40%	552	19%	1,655	49%	676	65%	2,028	583%	774	74%	2,323	667%
2019	27	1%	80	2%	251	24%	752	213%	458	15%	1,374	40%	558	19%	1,673	49%	682	64%	2,046	580%	782	74%	2,345	665%
2020	27	1%	80	2%	252	24%	756	212%	463	15%	1,389	40%	564	19%	1,691	49%	688	64%	2,065	578%	789	74%	2,367	663%
2021	27	1%	81	2%	254	23%	761	210%	468	15%	1,404	40%	570	19%	1,709	49%	694	64%	2,083	577%	796	73%	2,389	661%
2022	27	1%	82	2%	255	23%	765	209%	473	15%	1,419	40%	576	19%	1,728	48%	701	64%	2,102	575%	804	73%	2,411	659%
2023	28	1%	83	2%	257	23%	770	208%	478	15%	1,434	40%	582	18%	1,746	48%	707	64%	2,121	573%	811	73%	2,432	657%
2024	28	1%	84	2%	258	23%	774	207%	483	15%	1,449	40%	588	18%	1,764	48%	713	63%	2,139	571%	818	73%	2,454	655%
2025	28	1%	85	2%	260	23%	779	205%	488	15%	1,464	40%	594	18%	1,782	48%	719	63%	2,158	569%	825	73%	2,476	653%
2026	29	1%	86	2%	261	23%	783	204%	493	15%	1,479	40%	600	18%	1,800	48%	725	63%	2,176	567%	833	72%	2,498	651%
2027	29	1%	86	2%	263	23%	788	203%	498	15%	1,494	39%	606	18%	1,818	48%	732	63%	2,195	566%	840	72%	2,520	649%
2028	29	1%	87	2%	264	22%	792	202%	503	15%	1,509	39%	612	18%	1,837	48%	738	63%	2,214	564%	847	72%	2,541	648%
2029	29	1%	88	2%	266	22%	797	201%	508	15%	1,524	39%	618	18%	1,855	48%	744	62%	2,232	562%	854	72%	2,563	646%
2030	30	1%	89	2%	267	22%	801	200%	513	15%	1,538	39%	624	18%	1,873	48%	750	62%	2,251	561%	862	72%	2,585	644%
2031	30	1%	90	2%	269	22%	806	199%	518	15%	1,553	39%	630	18%	1,891	48%	756	62%	2,269	559%	869	71%	2,607	643%

Notes:
(1) Base case includes septic pumping for Los Osos only, for either a gravity or STEP/STEG system. Septic tanks pumped once every 10 years from 2010 through 2011, and once every 5 years starting in year 2011.
(2) Regional septic pumping is the summation of the Base Case for a gravity system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.
(3) Regional septic pumping is the summation of the Base Case for a STEP/STEG system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.
(4) Based on year 2007 data, LOWWTP could expect a low of 39% of total County septage.
(5) Based on year 2007 data, LOWWTP could expect a high of 48% of total County septage.
(6) Assume 250 working days per year to transport septage to receiving station.

4.1 Gravity/Low Pressure System

Disposing septage from the 749 septic connections outside the Prohibition Zone to the treatment plant increases the BOD and SS load by 24 and 73 lb/d, respectively in the first year. This additional load increases the plant's BOD by one percent, and the SS load by two percent. This is the anticipated increase in load if a gravity/low pressure collection system is selected with a septage receiving station that served the community only. The results for Tables 13 and 14 are the same for this scenario because it is assumed that following the completion of the treatment plant, Los Osos residents remaining on septic tanks will be required to pump once every five years.

If the receiving station served the entire County, then there would be an increase in the BOD and SS load to the treatment plant. Tables 13 and 14 show a low and high range of load, and the anticipated increase in load over the next 20 years. If a gravity system is selected, and septic tanks were pumped once every five years (Table 14), the additional load from septage disposal could increase the plant's annual BOD by at least 16 percent in the first year of operation, and could increase by approximately 20 percent after 20 years of operation. The treatment plant's annual SS load could increase by 41 percent in the first year of operation, and could increase by approximately 20 percent after 20 years of operation. If the septic tanks are pumped once every ten years, then the anticipated increases in BOD and SS loads are less, as shown in Table 13.

4.1.1 Impacts on Treatment Plant

Disposing septage at the treatment plant could impact the treatment process by increasing the aeration requirements necessary to carry out the biological treatment, or it could increase the number or size of facilities necessary for treatment. To evaluate the treatment impact, we analyzed both the BIOLAC® and oxidation ditch treatment options. For the gravity collection system, if the treatment plant accepts septage from the community of Los Osos only, then there is no change in the number or size of the basins. There is a slight increase (about one to two percent) in the aeration requirements and the solids production, but essentially there is no impact on the treatment process.

If the receiving station accepts septage from outside the community, then the number of basins or the volume of each basin for both the BIOLAC® and oxidation ditch treatment process will increase by 50 percent. The aeration horsepower requirement increases about 15 percent and the dewatered solids production increases 35 to 40 percent, resulting in greater power and solids handling costs. Adding 50 percent more basin capacity to the BIOLAC® or oxidation ditch to provide the necessary septage treatment capacity signifies a large additional capital cost to the current treatment plant cost estimates. Capital and operations cost increases are discussed later in this TM.

For partially mixed facultative ponds, disposing septage at the treatment plant will have little impact on the pond size. However septage disposal does impact the rate of solids

accumulation in the ponds, and the frequency of solids removal. Greater solids accumulation translates to higher operation cost. The impacts are the same for a STEP/STEG collection system.

4.2 STEP/STEG System

Disposing septage from the 749 septic connections outside the Prohibition Zone, and the 4,769 new STEP/STEG septic tanks within the Prohibition Zone results in a greater total load increase, and a significantly greater percent increase to the treatment plant when compared to the gravity system. The reason is that, as shown in Table 12, the average daily BOD and SS load to the treatment plant is much lower for the STEP/STEG system (65 percent less for BOD load and 90 percent less for SS load). Even though the daily septage flow is low compared to the treatment plant flow, less than one percent, the high strength of BOD and SS in septage results in a substantial increase in load. When the five-year cycle of pumping begins for the STEP/STEG septic tanks (year 2016), the treatment plant's annual BOD and SS load increases by about 25 percent, and the SS load by 220 percent. This is the anticipated increase if a STEP/STEG collection system is selected with a septage receiving station that served the community only.

Tables 13 and 14 show a low and high range of load, and the anticipated increase in load over the next 20 years for a septage receiving station that served the entire County. If a STEP/STEG system is selected, and septic tanks were pumped once every five years (Table 14), the additional annual load from septage disposal could increase the plant's BOD by at least 44 percent in the first years of operation, by 65 percent in year 2016 when the first STEP/STEG septic tanks begin pumping and disposing, and could increase by as much as 71 percent after 20 years of operation. The treatment plant's SS load could increase by 400 percent in the first years of operation, by 590 percent in year 2016, and could increase by as much as 640 percent after 20 years of operation. Again, the reason for the jump in year 2016 is that this would be the first year that STEP/STEG septic tanks are pumped, resulting in a sudden increase. If the septic tanks are pumped once every ten years, then the anticipated increases in BOD and SS loads are less, as shown in Table 13. Even though septage represents a little less than one percent of the flow, the high strength of the waste and the low strength of the plant's influent wastewater results in the SS load being three to four times greater than if the plant did not accept septage.

4.2.1 Impacts on Treatment Plant

For the STEP/STEG collection system, the impacts on the treatment plant were more severe when compared to the gravity system. If the treatment plant accepts septage from the community of Los Osos only, then the SS load increases about 200 percent than if no septage were accepted, and the BOD load increases about 20 percent. This increase in load requires a 50 percent increase in the number of basins or the volume of each basin for both the BIOLAC® and oxidation ditch treatment process. There is about a ten percent

increase in the aeration power requirements, but the dewatered solids production nearly doubles, compared to if no septage were disposed at the plant.

If the receiving station accepts septage from outside the community, then there are serious impacts to the treatment plant that will significantly increase the capital costs to build additional facilities and operation costs to treat the wastewater. The obvious dilemma with this option is that the number of basins or the volume of each basin will increase by 200 percent for both the BIOLAC® and oxidation ditch treatment process to treat septage from outside the community. In addition to this large capital investment, the aeration horsepower requirement increases about 20 percent and the dewatered solids production is about double than if septage were only accepted from the community. Note that the dewatered solids production is about four times greater than if no septage were accepted at the plant. The additional cost for the basin expansion necessary to treat septage from outside the community, the increase in dewatered solids that will need to be hauled and disposed, and increase in aeration requirements will be key considerations in offering this service if a STEP/STEG system is selected as the collection system alternative.

4.3 Other Constituents of Concern

In addition to the BOD and SS load on the treatment process, the presence of metals could impact the solids management options being considered by the County. The Solids Handling TM provides more information on this subject, but the conclusion is that the County will need to address metals limits in formulating its solids management options. Metals typically partition with solids and concentrate in septic tanks. If the septage received by the future treatment plant contains high concentrations of metals, then this could lead to concentrations in biosolids that exceed those allowable for Class A or Class B Pollutant Concentration limits.

5.0 SEPTAGE RECEIVING STATION PROCESS TECHNOLOGY

Septage receiving stations are self contained, fully automated systems that pre-treat septage by removing solids prior to introduction to plant processes. They are designed and specified for the screening of floating, particulate and fibrous material and for conveying, washing, dewatering and compacting the screenings and for discharging the compacted screenings into bags.

5.1 Process Equipment and Footprint

Septage receiving stations are about 20 feet long. The total length includes the mechanical piping, meters, screen enclosure, and discharge chute. The width varies, but the widest part is the screenings enclosure, which is about 3 feet across. Figures 2 through 6 present different views of the septage receiving station in Madera, California. The Los Osos facility would be similar in size and capacity to the Madera facility.

Figure 2
DISCHARGE CHUTE FRONT/SIDE VIEW
LOS OSOS WASTEWATER PROJECT DEVELOPMENT
SAN LUIS OBISPO COUNTY

slo408f12-7630.ai

Figure 3
SCREENINGS TANK AND
DISCHARGE CHUTE SIDE VIEW
LOS OSOS WASTEWATER PROJECT DEVELOPMENT
SAN LUIS OBISPO COUNTY

slo408f13-7630.ai

Figure 4
FLOW AND PH METERS, AND
MECHANICAL PIPING SIDE VIEW
LOS OSOS WASTEWATER PROJECT DEVELOPMENT
SAN LUIS OBISPO COUNTY

slo408f14-7630.ai

Figure 5
SEPTAGE DISPOSAL CONNECTION POINT
AND CONTROL PANEL (BACKGROUND)
LOS OSOS WASTEWATER PROJECT DEVELOPMENT
SAN LUIS OBISPO COUNTY

slo408f15-7630.ai

Figure 6
SEPTAGE DISPOSAL CONNECTION POINT
LOS OSOS WASTEWATER PROJECT DEVELOPMENT
SAN LUIS OBISPO COUNTY

slo408f16-7630.ai

Manufacturers that supply these systems include but are not limited to Huber Technology (ROTAMAT Ro 3), Parkson Corporation (Hycor Helisieve Plus), and Lakeside (Raptor). Some of the features include:

- Fine screen with 1/4 inch spacing/openings
- Level control to regulate septage feed
- pH and flow meter with automatic valves
- Completely enclosed operation to reduce odors
- Screenings washing, compaction and bagger for landfill
- Control panel with user identification and invoice printer
- Automatic washdown for the tank interior

To ensure quality of the equipment, specifications establish minimum requirements on the fabrication material, design criteria, performance and maintenance. Some of the requirements include but are not limited to the following:

- Fabrication material (all stainless steel)
- Static and hydraulic forces
- Minimum flow capacity at a certain solids concentration
- Minimum screening processing load
- Minimum spherical object processing diameter
- Equipment cleaning

5.2 Septage Receiving Station Operation

Septage haulers connect their load to the disposal connection point, typically with a 6-inch diameter hose. Depending on whether a receiving station contains a control panel with customer identification or not, a hauler could be required to enter an identification number prior to disposal for security and billing purposes. A series of automatic controls can be programmed into the unit to open valves prior to discharge and to close following completion. These controls regulate discharge and prevent spills. Manual valves are also available, depending on the client's preference. Level controls in the screenings tank automatically regulate the septage feed from the tanker to prevent overflow. At the completion of disposal, the hauler disconnects the hose and obtains a summary (volume) of waste disposed.

Septage receiving stations can be designed to be fully automatic operations requiring minimal operator attendance. Most manufacturers offer a control panel with automatic card reader or personal identification number (PIN) key pad for customer identification and security, a flow meter to record the volume of supplied sludge, and a computer and printer for printing invoices. A pH probe and an automatic valve to prevent discharge of acidic or caustic sludge can also be included with a unit, or an automatic sampler to monitor the waste disposed.

Some receiving stations have the capacity to accept up to 440 gallons per minute (gpm) of three percent solids septage waste. For example, a typical 3,000-gallon septage disposal truck with up to three percent solids can be processed in less than ten minutes. Discussions with plant operators in Madera, California indicated that a 3,000 to 5,000 gallon truck can typically connect, discharge, and disconnect from the septage receiving station within 20 minutes. The fine screen tank contains automatic sprayers that washdown the interior after shutdown.

Several design features prevent spills from the septage receiving stations. Automatic valves that close and open prevent spills from the discharge line feeding the screenings tank. The units also contain a level control that automatically regulates septage feed and prevents overflow from the screenings tank. Containment provisions include concrete berms around the connection points with drain lines that return to the treatment plant headworks. The disposal connection point in Madera was set above a metal grate and sunken concrete channel with drain line (see Figures 5 and 6). Several provisions can be designed into a project to prevent septage spills and also to contain them in the event they occur. Plant water hose bib connections can also be located adjacent to the receiving station to wash down any spills into the drain line.

The potential for damage to the septage receiving station from truck collisions is minimal because traffic guards (bollards) can be installed around the equipment. The only equipment from septage haulers that comes into contact with the mechanical piping is the hauler’s discharge hose.

5.3 Visual and Odor Impacts

These units have a small footprint compared to other processes in a treatment plant. The screenings disposal chute is the tallest point and could extend seven to nine feet off the ground. The largest pieces of equipment include the screenings tank and disposal chute. The mechanical piping, flow meter, and valves are small diameter. Electrical conduit running from the control panel to the unit is buried.

As mentioned, the screenings tank is completely enclosed to prevent odor nuisance. The screenings are washed of organics and pressed prior to disposal. The screenings can be disposed directly into a bagger that is tied to the end of the chute, further preventing odors

from the receiving station. Otherwise, the screenings are disposed directly into a small trash bin.

6.0 TRUCK TRAFFIC PROJECTIONS

Installing a septage receiving station at the future wastewater treatment plant will result in increased truck traffic if the facility serves as a regional disposal point. If the treatment plant serves only the community, then the truck traffic within the community should be the same as if septic pumping trucks had to travel to Santa Maria. One could argue that a septage receiving station that only served the community would result in an overall reduction of truck miles traveled because the travel distance between Los Osos and Santa Maria would be eliminated from the trip.

The calculations for truck traffic assumed that there are 250 working days per year to pump, transport, and dispose septage to a receiving station, and that each tanker truck has a volume of 3,000 gallons.

6.1 Truck Traffic Gravity/Low Pressure Collection System

As shown in Tables 15 and 16, if the community installs a gravity/low pressure collection system, then the number of truck trips would be a little more than one per week on average. 749 septic connections remain in the community at build-out in a gravity based system, and only 150 septic tanks per year would be pumped, resulting in very little septic pumping and truck traffic.

As shown in Table 16, if the septage receiving station serves homes outside the community, then the community could expect about 17 to 21 trucks per week disposing septage at the receiving station (assumes septic tanks pumped every five years) in the first year of operation. This number would increase to approximately 25 as more septic tanks come on-line throughout the County. Septage haulers serving customers outside the community would make up about 95 percent of the traffic to the septage receiving station. If septic tanks are pumped once every ten years, then the number of truck trips to the receiving station drops by about half, as shown in Table 15.

6.2 Truck Traffic STEP/STEG Collection System

For the STEP/STEG collection system, between 2011 and 2015, the number of truck trips per week is the same as the gravity system because the new septic tanks would not start their pump and inspect requirements until the fifth year of operation. In year 2016, the number of weekly truck trips to the wastewater treatment plant increases to about ten, or about two per day. The STEP/STEG system results in a greater number of community septic tanks that require pumping, therefore the number of truck trips is about eight times greater than a gravity system for the Base Case.

Table 15 **Countywide Possible Weekly Truck Trips to Treatment Plant (Tanks Pumped Every 10 Years)**
Los Osos Wastewater Project Development
San Luis Obispo County

	Base Case: Los Osos Only[2]		Regional Septic Pumping: Gravity System[5] Possible Weekly Truck Trips to LOWWTP		Regional Septic Pumping: STEP/STEG System[6] Possible Weekly Truck Trips to LOWWTP	
Year	Gravity System (Trips per Week)[9]	STEP/STEG System (Trips per Week)[9]	Low Estimate (Trips per Week)[7],[9]	High Estimate (Trips per Week)[8],[9]	Low Estimate (Trips per Week)[7],[9]	High Estimate (Trips per Week)[8],[9]
2007	4.8	4.8	0	0	0	0
2008	4.8	4.8	0	0	0	0
2009	4.8	4.8	0	0	0	0
2010	4.8	4.8	0	0	0	0
2011	1.0	1.0	9.1	11.0	9.1	11.0
2012	1.0	1.0	9.2	11.1	9.2	11.1
2013	1.0	1.0	9.3	11.2	9.3	11.2
2014	1.0	1.0	9.4	11.3	9.4	11.3
2015	1.0	1.0	9.5	11.5	9.5	11.5
2016	1.0	9.8	9.6	11.6	18.4	20.4
2017	1.0	9.9	9.7	11.7	18.6	20.6
2018	1.0	10.0	9.8	11.8	18.7	20.7
2019	1.1	10.0	9.9	12.0	18.9	20.9
2020	1.1	10.1	10.0	12.1	19.0	21.1
2021	1.1	10.1	10.1	12.2	19.2	21.3
2022	1.1	10.2	10.2	12.3	19.3	21.4
2023	1.1	10.3	10.3	12.5	19.5	21.6
2024	1.1	10.3	10.5	12.6	19.6	21.8
2025	1.1	10.4	10.6	12.7	19.8	22.0
2026	1.1	10.4	10.7	12.9	20.0	22.2
2027	1.2	10.5	10.8	13.0	20.1	22.3
2028	1.2	10.6	10.9	13.1	20.3	22.5
2029	1.2	10.6	11.0	13.2	20.4	22.7
2030	1.2	10.7	11.1	13.4	20.6	22.9
2031	1.2	10.7	11.2	13.5	20.7	23.0

Notes:
1. Septic tanks outside of Los Osos are pumped once every 10 years, from 2007 through 2012. Starting in year 2013, septic tanks pumped once every 5 years per AB885.
(2) Base case includes septic pumping for Los Osos only, for either a gravity or STEP/STEG system. Septic tanks pumped once every 10 years from 2007 through 2012, and once every 5 years starting in year 2013.
(3) 2007 septic pumping based on data in the December 12, 2007 memorandum prepared by Mary Whittlesey, County Waste Coordinator. Includes Countywide pumping except for pumping in Los Osos.
(4) 300 new septic tanks per year are installed throughout the County.
(5) Regional septic pumping is the summation of the Base Case for a gravity system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.
(6) Regional septic pumping is the summation of the Base Case for a STEP/STEG system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.
(7) Based on year 2007 data, LOWWTP could expect a low of 39% of total County septage.
(8) Based on year 2007 data, LOWWTP could expect a high of 48% of total County septage.
(9) Assume 250 working days per year to transport septage to receiving station.

Table 16 Countywide Possible Weekly Truck Trips to Treatment Plant (Tanks Pumped Every 5 Years)
Los Osos Wastewater Project Development
San Luis Obispo County

Year	Base Case: Los Osos Only[2] Gravity System (Trips per Week)[9]	Base Case: Los Osos Only[2] STEP/STEG System (Trips per Week)[9]	Possible Weekly Truck Trips to LOWWTP Low Estimate (Trips per Week)[7, 9]	Possible Weekly Truck Trips to LOWWTP High Estimate (Trips per Week)[8, 9]	Possible Weekly Truck Trips to LOWWTP Low Estimate (Trips per Week)[7, 9]	Possible Weekly Truck Trips to LOWWTP High Estimate (Trips per Week)[8, 9]
2007	4.9	4.9	0	0	0	0
2008	4.9	4.9	0	0	0	0
2009	4.9	4.9	0	0	0	0
2010	4.9	4.9	0	0	0	0
2011	1.2	1.2	16.9	20.5	16.9	20.5
2012	1.2	1.2	17.1	20.7	17.1	20.7
2013	1.2	1.2	17.3	21.0	17.3	21.0
2014	1.3	1.3	17.5	21.2	17.5	21.2
2015	1.3	1.3	17.7	21.5	17.7	21.5
2016	1.3	10.1	17.9	21.7	26.7	30.5
2017	1.3	10.2	18.1	22.0	26.9	30.8
2018	1.3	10.2	18.3	22.2	27.2	31.1
2019	1.3	10.3	18.5	22.4	27.4	31.4
2020	1.3	10.3	18.7	22.7	27.7	31.7
2021	1.4	10.4	18.9	22.9	27.9	32.0
2022	1.4	10.5	19.1	23.2	28.2	32.3
2023	1.4	10.5	19.3	23.4	28.4	32.6
2024	1.4	10.6	19.5	23.7	28.7	32.9
2025	1.4	10.7	19.7	23.9	28.9	33.2
2026	1.4	10.7	19.9	24.2	29.2	33.4
2027	1.4	10.8	20.1	24.4	29.4	33.7
2028	1.5	10.8	20.3	24.6	29.7	34.0
2029	1.5	10.9	20.5	24.9	29.9	34.3
2030	1.5	11.0	20.7	25.1	30.2	34.6
2031	1.5	11.0	20.9	25.4	30.4	34.9

Notes:
(1) Septic tanks outside of Los Osos are pumped once every 10 years, from 2007 through 2012. Starting in year 2013, septic tanks pumped once every 5 years per AB885.
(2) Base case includes septic pumping for Los Osos only, for either a gravity or STEP/STEG system. Septic tanks pumped once every 10 years from 2007 through 2012, and once every 5 years starting in year 2013.
(3) 2007 septic pumping based on data in the December 12, 2007 memorandum prepared by Mary Whittlesey, County Waste Coordinator. Includes Countywide pumping except for pumping in Los Osos.
(4) 300 new septic tanks per year are installed throughout the County.
(5) Regional septic pumping is the summation of the Base Case for a gravity system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.
(6) Regional septic pumping is the summation of the Base Case for a STEP/STEG system, County and new septic tanks. The range is based on the probability that septage haulers would use a future LOWWTP.
(7) Based on year 2007 data, LOWWTP could expect a low of 39% of total County septage.
(8) Based on year 2007 data, LOWWTP could expect a high of 48% of total County septage.
(9) Assume 250 working days per year to transport septage to receiving station.

If the septage receiving station serves homes outside the community, then the community could expect about 17 to 21 trucks per week disposing septage at the receiving station in the first five years of operation. As shown in Table 16, the number of truck trips increases to between 27 and 31 per week starting in year 2016 and increases from there to approximately 35. After year 2016, the septage haulers serving customers outside the community would make up about 70 percent of the traffic to the septage receiving station.

Depending on the collection system alternative and the decision to serve the community only or the entire north County, the number of truck trips to the septage receiving station could be as low as one per week or as high as 20 per week in the first few years of operation. The weekly numbers remain fixed for the Base Case, but steadily increase for the regional option because new septic tanks are installed every year throughout the County.

The traffic, environmental, and green house gas contributing impacts on a project specific and cumulative basis will be analyzed and discussed in the environmental impact report. The purpose of this analysis was to approximate the number of truck trips to the septage receiving station associated with each option.

7.0 PROJECT, OPERATION AND MAINTENANCE COST

The cost to add a septage receiving station to the treatment process includes the initial construction, engineering and environmental costs associated with designing, permitting and installing this facility. It also includes the operation and maintenance costs to keep up this facility and to treat the disposed septage. The added treatment costs include additional treatment plan capacity, operations (staff, power and chemicals), and solids management, which could be significant.

7.1 Project Cost

To establish the project cost, we consulted with equipment manufacturers and followed the guidelines established in the Basis of Cost Technical Memorandum included as Appendix C of the final Viable Project Alternatives Fine Screening Analysis, August 2007.

Most manufacturers provide a septage receiving station that can accept 300 to 440 gpm of waste with up to three percent solids. A unit with this capacity should have sufficient size to manage the range of flows and loads considered in this TM. The Huber ROTAMAT Septage Receiving Station Ro 3 was the equipment basis for this cost estimate. Along with the standard features included in most equipment, we also assumed that this unit would incorporate the integrated screenings washing and bagger, programmable control with key pad access for security and customer identification, flow meter, pH probe and an automatic valve to prevent discharge of undesired waste. The cost estimate also includes allowances for foundation, mechanical piping, civil site work, electrical and instrumentation.

Table 17 summarizes the estimated project cost for adding a septage receiving station. The septage receiving stations produced by manufacturers are similar in size and capacity. The units investigated for this analysis had sufficient capacity to serve both a community only and regional septage disposal option. In other words, one unit has the capacity to serve both functions. These costs do not include the additional capacity of the oxidation ditch or BIOLAC® basins that could be necessary if septage is treated at the plant. The treatment plant capital costs depend on the type of collection system and whether septage from outside the community is allowed to dispose at the plant. For example, if the gravity collection system is selected and only septage from the community is disposed at the plant, then there are minimal impacts and no additional major facilities. However, if the STEP/STEG system is selected, and septage from throughout the County is allowed to dispose, then the capacity of the basins (BIOLAC® or oxidation ditch) increases by 200 percent, aeration power cost go up 30 percent, and the pounds per day of dewatered solids quadruples.

7.2 Treatment Plant Project Cost Increase

As previously discussed, adding a septage receiving station could result in an increase in the number of basins, or in the size of each basin necessary to treat the BOD and SS load. The capacity increase depends on the type of collection system and whether the septage receiving station serves only Los Osos or accepts septage from throughout the County.

To quantify the associated increase in treatment project cost resulting from larger oxidation ditch or BIOLAC® basins, this analysis used the cost models developed for the August 2007, Fine Screening Analysis.

7.2.1 Treatment Construction Cost with a Gravity Collection System

As stated previously, for a gravity collection system, there is minimal impact to the treatment process if a septage receiving station is added and waste is received only from the community. However, if septage is received from throughout the County, then the basin volume requirements increase by 50 percent. The increase in Total Project Cost for expanding the oxidation ditch volume could be approximately $1.6 million. The Total Project Cost for expanding the BIOLAC® basin size could increase by approximately $0.9 million. The Total Project Cost includes the construction cost, contingencies for unknown conditions, escalation to the mid-point of construction (year 2011), engineering, construction management, administration, and legal costs.

7.2.2 Treatment Construction Cost with a STEP/STEG Collection System

For the STEP/STEG collection system, adding a septage receiving station will require an expansion to the treatment process. A 50 percent increase in basin volume is required if only community septage is disposed at the treatment plant. The increase in Total Project Cost for expanding the oxidation ditch volume could be approximately $0.8 million. The

Total Project Cost for expanding the BIOLAC® basin size could increase by approximately $0.50 million.

Table 17 Septage Receiving Station Estimated Project Cost
Los Osos Wastewater Project Development
San Luis Obispo County

Item	Estimated Cost ($)[1]
Huber ROTAMAT Ro 3 and Mechanical Piping	185,000
Mobilization/Demobilization	14,000
Electrical/Instrumentation and Control	46,000
Site Work/Yard Piping/Foundation	56,000
Contingency (30% of Direct Cost)	90,000
Subtotal Estimated Direct Cost ("B")	**391,000**
Sales Tax (8% of equipment and material cost)	16,000
Contractor Overhead and Profit (15% of "B")	59,000
Subtotal Estimated Construction Cost ("C")	**466,000**
Escalation to Mid-Point of Construction (Year 2011)	87,000
Subtotal Escalated Estimated Construction Cost ("D")	**553,000**
Project Cost[2] ("E") (25% of "D")	138,000
Total Estimated Project Cost ("F")	**691,000**

Notes:
(1) Based on June 2011 costs for San Luis Obispo, California (Estimated ENRCCI projection for the 20-Cities Average is 8109 for March 2008 and location factor adjustment is 1.054.). All values rounded to the nearest thousand.
(2) Includes design engineering contingencies, construction management, administrative, and legal costs.

If a regional septage receiving station is implemented, then the increase in BOD and SS loading results in a 200 percent increase in basin volume for both the oxidation ditch and BIOLAC® process. The increase in Total Project Cost for expanding the oxidation ditch volume is approximately $2.9 million. The Total Project Cost for expanding the BIOLAC® basin size could increase by approximately $1.7 million.

7.2.3 Septage and Treatment Construction Cost Summary

The range of probable increases in Total Project Costs associated with a septage receiving station could be $0.7 million for a gravity collection system where septage is received only

from Los Osos, up to $3.6 million for a STEP/STEG collection system where septage is received from throughout the County. The increase in cost depends on the collection system (gravity or STEP/STEG) and on the treatment process (oxidation ditch or BIOLAC®). In general, the cost to expand a BIOLAC® basin was less than increasing an oxidation ditch capacity. These costs include the septage receiving station and the increase in treatment capacity.

7.3 Operation and Maintenance Cost

7.3.1 Septage Receiving Station O&M

The operation and maintenance (O&M) costs associated with septage receiving stations include power to run the screenings and compaction mechanisms, but the drives on these units are small (2 or 3 hp). The actual power costs depends on the number of trucks that dispose at the station, but even the high estimate of waste deliveries would result in equipment operation for about half of a workday. The power costs to run these units for four hours a day is less than $1,000 per year. Septage station maintenance and replacement costs were estimated at three percent of the equipment cost per year. This equates to approximately $6,000 per year to maintain the equipment. Therefore, the total maintenance and operations cost is $7,000 per year.

Previous discussions summarized the increase in aeration power requirements and dewatered solids production. Each of these results in higher costs, in particular the solids handling costs.

7.3.2 Administration, Permitting and Disposal Sampling Costs

A substantial amount of administration would be necessary to implement a septage receiving station. Administrative tasks include reviewing and approving disposal permits. Similar to the requirements for Santa Maria, to become permitted for disposal and to access the treatment plant, the septage haulers would be required to submit an application along with copies of County Health Department permits and tank capacity documentation.

WWTP personnel would also be required to verify the origin of waste and type of waste prior to disposal. Drivers of the septage haulers would be required to document each waste generator, the origin of waste, type of waste, and complete a manifest for staff review and authorization prior to septage disposal. Sampling of each truck's load is recommended if it becomes necessary to track the source of unpermitted waste. WWTP personnel would be required to obtain a representative sample of the load. Samples would be checked initially for color and odor for abnormalities. If an unusual odor or color were noted, the discharge would be halted while the contents of the tank were inspected. If the contents appear to be unpermitted waste, then the load would be rejected. The septage receiving station would be equipped with a pH meter, and if disposed waste exceeded allowable pH limits it would be rejected.

A composite jar containing representative samples from every load received that day would be retained for later analysis. At the end of the week, the entire volume of the daily composites would be combined in order to create a weekly composite.

Allowable discharge limits would be placed on conductivity, BOD, pH, oil and grease, and percent solids. These would be monitored and enforced by the WWTP attendant. The attendant would reject any load determined to have unpermitted waste streams and loads exceeding allowable limits. In addition, the attendant would reject any load of suspicious origin.

The additional permitting, sampling and inspection requirements will add substantial labor and overhead to administer a septage receiving station. If the receiving station serves haulers outside of Los Osos, then the treatment plant could expect several trucks disposing their load daily. This may require one additional treatment plant operator to manage the daily truck traffic, but other staff may be necessary to manage the regulatory compliance, permit authorization, and enforcement if unpermitted waste is discharged.

The labor cost to add an additional operator to manage the septage receiving station, sampling and inspection procedures full time is approximately $125,000 per year. This assumes an average plant operator cost of $60 per hour and includes salary and other labor-related costs.

7.3.3 Increase in Treatment Operation Cost

Similar to the increase in construction cost, adding a septage receiving station results in an escalation in the operations cost due to greater energy use and solids disposal. The increase in operations cost varies depending on the amount of septage that is disposed at the treatment plant and whether the treatment plant serves a gravity or STEP/STEG collection system.

7.3.3.1 Treatment Operation Cost with a Gravity Collection System

For a gravity collection system, if only community septage is disposed at the treatment plant, then there is minimal increase in the operations cost. If septage from throughout the County is disposed at the treatment plant, then the operation and maintenance cost could increase by approximately $48,000 per year for the oxidation ditch system and $53,000 per year for the BIOLAC® system.

7.3.3.2 Treatment Operation Cost with a STEP/STEG Collection System

For a STEP/STEG collection system, if only community septage is disposed at the treatment plant, then the operation and maintenance costs increase by approximately $26,000 per year for the oxidation ditch system and $40,000 per year for the BIOLAC® system.

If septage from throughout the County is disposed at the treatment plant, then the operation and maintenance costs increase by approximately $67,000 per year for the oxidation ditch system and $85,000 per year for the BIOLAC® system.

7.3.4 Total Increase in Operation and Maintenance Cost

The annual increase in operations and maintenance cost associated with the addition of a septage receiving station could range from $132,000 to $217,000, minimum. This annual increase would cover a treatment plant operator, equipment maintenance and operation, power, and solids dewatering costs. In general, the increase in operations costs was greater for the STEP/STEG system, than the gravity system.

8.0 REVENUE PROJECTIONS

All wastewater treatment plants contacted for this TM that accept septage charge a disposal fee. The disposal fee is based on the treatment plant's cost to manage the liquid and solid waste resulting from septage disposal. The City of Madera based its disposal rate on the cost to treat a pound of BOD. Most rates ranged from $0.05 to $0.10 per gallon. The City of Santa Maria charges a septage disposal rate of $0.0624 per gallon, and is scheduled to increase it to about $0.066 per gallon in July 2008.

Discussions with the City of Fresno (Fresno) and our knowledge of treatment plants in the San Francisco Bay Area indicated that rates tend to be market driven, and treatment plants do not typically increase fees annually. It appears that in areas with a number of septage disposal options, the rates tend to be managed by market conditions and a treatment plant's goal is to recover their cost only. Septage receiving stations are generally not viewed as profit generating services.

A septage receiving station in Los Osos might experience similar market forces. However, it would be the only septage receiving station in San Luis Obispo County. A Los Osos station could gain 39 to 48 percent of the San Luis Obispo County septage disposal market. It would offer an alternative to waste haulers who currently travel south to Santa Maria and beyond to dispose waste. Therefore, the disposal rates charged by this receiving station could be higher than the next closest facility. For the purposes of calculating revenue, this TM assumed the rates would be equivalent to those charged by Santa Maria. Santa Maria's July 2008 rate was used as a basis, and an annual inflation adjustment of 2.3 percent was applied for subsequent years. The revenue calculations assumed that all waste haulers would be charged the same rate.

Table 18 summarizes the forecast annual revenue that could be generated for the regional septage receiving options. Revenue forecasts are provided for both septic tank pumping frequencies of once every ten and five years.

8.1 Community Disposal Fees

We recognize that there are several options for billing residents in the community and that different rate structures are possible to not only pay for septage treatment, but also to pay for the increase in plant capacity needed to accept septage. This TM did not explore the different rate alternatives for community septage disposal. Instead, we followed the recommendations made in the July 2006 Los Osos Wastewater Management Plan Update prepared by the Ripley Pacific Team. The report recommended that costs for Los Osos septage collection and processing be incorporated into the annual operation and maintenance budget and billed to all residential and commercial accounts on a monthly basis. This is a reasonable option and should be considered. However, a monthly fee for properties outside the Prohibition Zone may not be achievable. Therefore, it is assumed that the septage disposal costs for community septic tanks within the Prohibition Zone are included in monthly sewer bills. As a result, the revenue projections summarized in Table 18 only account for septage origination from outside the Prohibition Zone and from outside of Los Osos.

8.2 Regional Septage Disposal

Table 18 shows the possible range of revenue that could be generated by accepting septage from outside the Prohibition Zone and from outside the community. The range of revenue includes the possibility that septage haulers would use a facility in Los Osos, and illustrates the impact that pumping frequency (once every five or ten years) has on revenue. The revenue generated is independent of whether a gravity or STEP/STEG collection system is selected. As shown in Table 18, if septic tank pumping continues at its current rate of once every ten years, then $95,000 to $115,100 in annual revenue could be generated in the first year, increasing to approximately $185,000 and $224,000 by 2031.

If septic tanks countywide are required to pump every five years, then approximately $176,000 to $214,000 in revenue could be generated in the first year, increasing to between $343,000 and $418,000 by 2031.

The revenue projections from septage disposal fees are insufficient to cover the anticipated increase in operations cost if septic tanks are pumped once every ten years. If the pumping policies do not change, then a Regional septage facility should not be considered. If they are pumped once every five years, then the revenue may be sufficient to cover increases in labor, operations, and maintenance costs. Since AB 885 or the Regional Board Basin Plan will require septic pumping once every five years, the projected revenue should be sufficient to cover operations cost. However, if the inflation rate on labor, power, chemical and solids disposal costs increase greater than the disposal fee annual increase, then these projections must be revised.

Table 18 Projected Revenues
Los Osos Wastewater Project Development
San Luis Obispo County

Year	Rate/ gallon[2,3] ($)	Septic Tanks Outside Prohibition Zone ($ per Year)	REGIONAL PROJECTED REVENUE[1]			
			10-Year Pumping Cycle		5-Year Pumping Cycle	
			Low Estimate[4] ($ per Year)	High Estimate[5] ($ per Year)	Low Estimate[4] ($ per Year)	High Estimate[5] ($ per Year)
2007	0.0624	-	-	-	-	-
2008	0.0655	-	-	-	-	-
2009	0.0670	-	-	-	-	-
2010	0.0685	-	-	-	-	-
2011	0.0701	10,200	95,600	115,300	175,900	214,100
2012	0.0717	10,500	98,800	119,200	182,000	221,600
2013	0.0734	10,900	102,300	123,400	188,400	229,400
2014	0.0751	11,300	105,800	127,700	195,000	237,400
2015	0.0768	11,700	109,500	132,100	201,800	245,700
2016	0.0786	12,100	113,300	136,600	208,800	254,200
2017	0.0804	12,500	117,100	141,200	216,000	262,900
2018	0.0822	12,900	121,100	146,000	223,300	271,900
2019	0.0841	13,400	125,200	151,000	231,000	281,300
2020	0.0860	13,800	129,400	156,100	238,900	290,800
2021	0.0880	14,300	133,800	161,400	247,000	300,700
2022	0.0901	14,800	138,300	166,800	255,400	310,900
2023	0.0921	15,300	143,000	172,400	264,000	321,400
2024	0.0942	15,800	147,700	178,200	272,900	332,200
2025	0.0964	16,300	152,600	184,100	282,000	343,300
2026	0.0986	16,900	157,700	190,200	291,500	354,800
2027	0.1009	17,400	162,900	196,500	301,100	366,600
2028	0.1032	18,000	168,300	203,000	311,200	378,800
2029	0.1056	18,600	173,800	209,600	321,500	391,300
2030	0.1080	19,200	179,500	216,500	332,100	404,300
2031	0.1105	19,900	185,400	223,600	343,100	417,600

Notes:
(1) Includes septage origination from outside the Prohibition Zone and from outside of Los Osos.
(2) 2008 rate based on City of Santa Maria WWTP Disposal Rates (includes 5% increase scheduled for July 2008).
(3) Disposal rates after year 2008 include an annual inflation rate of 2.3% to cover anticipated power and O&M increases.
(4) Based on year 2007 data, LOWWTP could expect a low of 39% of total county septage.
(5) Based on year 2007 data, LOWWTP could expect a high of 48% of total county septage.

9.0 CONCLUSIONS

9.1 Community Only Septage Receiving Station

A septage receiving station would provide the community with a facility to dispose their waste. If this facility was intended to only serve Los Osos, and a gravity collection system was the selected alternative, then there would be minimal impact to the treatment process, and the solids production increase is minimal. For this option, the receiving station could be considered underutilized since at build-out the 749 remaining septic connections outside the Prohibition Zone would use about one truckload a week to dispose their septage at the receiving station. It might be more cost effective to dispose the septage at another facility, like Santa Maria, instead of building a receiving station at this plant.

A STEP/STEG collection system would utilize the receiving station more because 5,518 septic tanks would need to be pumped every five years at build-out. On average, about two trucks per day would dispose their septage at the treatment plant. A 50 percent increase in the number of basins or the volume of each basin would be needed to manage the additional BOD and SS load from the septage disposal. Also, the dewatered solids production doubles if the plant includes a septage receiving station for the community.

9.2 Regional Septage Receiving Station

The decision to accept septage from outside the community depends on several factors including the cost of additional facilities necessary to treat septage, and the ability to generate sufficient revenue to pay for the increased treatment costs (capital and O&M). There are other considerations such as truck traffic and impact to the community.

For a gravity collection system, a 50 percent increase in the BIOLAC® or oxidation ditch basin capacity would be necessary to treat septage disposed from outside the community. There are also corresponding increases in aeration power requirements, and dewatered solids production, which increases O&M costs.

A regional septage receiving station in conjunction with a STEP/STEG collection system would significantly increase the cost of the project because the total basin volume is three times greater than if the treatment plant did not receive septage.

The amount of truck traffic through the community will increase if haulers use the septage receiving station for disposal. At build-out of the community, there could be 20 to 35 weekly truck trips from outside the community disposing septage at the treatment plant. These are disposal trucks that most likely pumped septage from the north County and would have traveled to Santa Maria for disposal. Although truck traffic through the

community might increase, by having this option available, the overall truck miles traveled could go down if haulers no longer have to travel to Santa Maria.

Revenue from septage disposal could range from $95,000 to $115,000 in the first year, and could double this amount if septic tanks had to be pumped once every five years. There are different options available for setting the disposal fees, and the County could establish a fee that not only covered the treatment cost of septage, but also recovered the capital costs for the septage facility and for the increase in treatment capacity and solids management.

9.3 Revenue Versus Costs

To evaluate whether adding a septage receiving station is cost effective or not required a broad assessment of the annual expenses associated with a receiving station, compared to the annual revenue. This assessment only considered revenue generation from a five-year septic tank pumping cycle, since this is a likely regulatory mandate. Table 19 summarizes the Total Project Cost, the annual loan payment to pay for the capital investment, anticipated annual O&M costs, and projected annual revenue. Also presented is the calculated difference between total annual cost (which includes the loan payment and O&M costs) and the projected revenue. The table is broken down between gravity versus STEP/STEG collection system. Within these two general categories, values are provided for a septage receiving station that only serves Los Osos, versus one that serves countywide. Costs are also provided to illustrate the difference between BIOLAC® or oxidation ditch treatment.

As shown in the table, the revenue generated from septage disposal is insufficient to pay for the septage receiving station, the additional treatment plant capacity and the O&M costs. The option with the least financial impact is a septage receiving station that only serves the 749 remaining septic tanks in the community of Los Osos following the installation of a gravity collection system. This option does not require an increase in treatment capacity and the corresponding O&M costs are low compared to a regional facility. The annual deficit is about $50,000 per year.

Implementing a Regional septage receiving station project as part of a gravity collection system results in similar financial impact when compared to a Los Osos only septage receiving station in a STEP/STEG collection system. Depending on whether a BIOLAC® or oxidation ditch option is installed, the annual deficit ranges between $100,000 to $130,000 per year.

The Regional septage receiving station implemented in conjunction with a STEP/STEG collection system presents the worst financial impact of all the options. The annual deficit could range from $180,000 to $230,000 depending on whether a BIOLAC® or oxidation ditch is implemented.

Table 19 Annual Cost and Revenue Comparison
Los Osos Wastewater Project Development
San Luis Obispo County

	Gravity Collection System				STEP/STEG Collection System			
	Los Osos Only		Regional Receiving Station		Los Osos Only		Regional Receiving Station	
Item	BIOLAC®	Oxidation Ditch	BIOLAC®	Oxidation Ditch	BIOLAC®	Oxidation Ditch	BIOLAC®	Oxidation Ditch
Total Project Cost(1) ($, millions)	0.7	0.7	1.6	2.3	1.2	1.5	2.4	3.6
Capital Recovery(2) ($, millions)	0.05	0.05	0.11	0.15	0.08	0.10	0.16	0.24
Annual Operations and Maintenance Cost(3) ($, millions)	0.007	0.007	0.19	0.18	0.047	0.033	0.22	0.19
Total Increase (Capital Recovery + O&M) ($, millions)	0.057	0.057	0.30	0.33	0.13	0.13	0.38	0.43
Annual Revenue ($, millions)	0.010	0.010	0.20	0.20	0.010	0.010	0.20	0.20
Annual Deficit ($, millions)	(0.05)	(0.05)	(0.10)	(0.13)	(0.12)	(0.12)	(0.18)	(0.23)

Notes:
(1) Total Project Cost includes the septage receiving station and the treatment plant expansion in this TM only.
(2) Capital recovery includes the annual payment on the Total Project Cost on a State Revolving Fund (SRF) loan at an assumed interest rate of 3.0 percent, paid over 20 years.
(3) Includes operations and maintenance cost for the septage receiving station, treatment plant, and one additional plant operator (operator for Regional receiving station only).
(4) Revenue assumes that septic tanks are pumped once every five years.

Adding a septage receiving station does not appear cost effective for any option. If the goal were to break even and pay for the O&M and capital costs, then the septage disposal fee would need to increase by a significant amount. For example, the fee would need to increase from $0.0655 per gallon, to approximately $0.33 per gallon to generate an additional $50,000 per year. This is the increase necessary to provide a septage receiving station for the remaining 749 Los Osos septic tanks outside the Prohibition Zone and break even. This represents a 400 percent increase above what Santa Maria will begin charging in the summer of 2008. At this rate, septage haulers may decide to continue using Santa Maria.

APPENDIX A – LIQUID WASTE AND THE LOS OSOS WASTEWATER TREATMENT FACILITY

SAN LUIS OBISPO COUNTY
DEPARTMENT OF PUBLIC WORKS

Noel King, Director

County Government Center, Room 207 • San Luis Obispo CA 93408 • (805) 781-5252

Fax (805) 781-1229 email address: pwd@co.slo.ca.us

TO: **John Waddell, Project Engineer**

FROM: **Mary Whittlesey, Solid Waste Coordinator**

DATE: **December 12, 2007**

SUBJECT: **Liquid Waste and the Los Osos Waste Water Treatment Facility**

As part of design considerations for the proposed Los Osos wastewater treatment facility (LOWWTP), the county is investigating the likelihood of accepting liquid waste from the various collection companies operating in San Luis Obispo County. Information required to plan for the facility includes the volume and type of waste material available and the likelihood of the material being delivered to a LOWWTP facility. Information about possible mechanisms to assure the flow of the waste to the facility was also requested. Thank you for the opportunity to compile information for this initial research.

Septage/Chemical Toilet Collection

Approximately 24 companies collect liquid waste from septic tanks and chemical toilets located in San Luis Obispo County. Most of these companies are headquartered in San Luis Obispo County.

Using the Liquid Waste Haulers report from Environmental Health Division of the County Health Department for January-September 2007, current septic tank pumping is estimated at 3,600,000 gallons per year. Regulations implementing AB885 (Chapter 781, statutes 2000) are expected to require pumping every 5 years, at a minimum. Barry Tolle (REHS, Planning & Building Department) estimates 30,000 current septic systems are in the county, which he further estimates would generate about 7 million gallons of septage per year if pumped every 5 years. This means that such a statutory requirement would double the amount of waste to be disposed (if Los Osos septic tanks remain in use). In addition, Mr. Tolle estimates 300 new septic connections occur in the county each year due to new construction.

Table 1 lists the average monthly amount of liquid waste pumped during the first nine months of 2007 by each company as reported to the Environmental Health Division of the County Health Agency.

Interviews were conducted with 18 of the septic and chemical toilet companies and the operator of the City of Santa Maria's Treatment Plant. Material insights gained from the interviews regarding the LOWWTP facility include:

1. The Santa Maria Waste Water Treatment Plant (SMWWTP) is the closest local facility for this waste. When the SMWWTP does not accept liquid waste the companies travel to Ventura, Santa Paula, or Bakersfield for disposal.
2. Current SMWWTP charges are provided in Table 2.

3. With the right pricing, 13 out of 18 companies surveyed would use the LOWWTP if available to them.[1]
4. Certain companies that do business mostly in South County areas of Nipomo and Arroyo Grande are unlikely to use the LOWWTP unless the SMWWTP will not accept their waste. However, two said they would bring small amounts to LOWWTP if it was necessary to "keep the doors open."
5. A response from the State Parks District Office will clarify if Hearst Castle and other state parks waste is collected under contract and reported by one of the listed companies.
6. The companies were unwilling to be specific regarding the amount of waste coming from each geographic areas; most, however were willing to give some percentage indication of waste origin. This is shown in Attachment A, Company Information.
7. Weekend and 24 hour access to a facility is ideal, according to the companies.
8. One company suggested the disposal price be set according to the actual quantity of waste disposed rather than by the truck size.
9. There is a report, not confirmed, that Army National Guard Camp Roberts may develop some capacity to accept a small quantity of liquid waste.

Table 1 Septage, Chemical Toilet and Grease Pumpings
January-September 2007

	COMPANY NAME	Year to date	Monthly Septage only	Chemical Toilet	Grease
1	ADVANCED WASTEWATER SYSTEMS INC	298,620	37,328		
2	AL'S SEPTIC PUMPING SERVICE	594,550	74,319		
3	AMERICAN MARBORG			42,456	
4	AMERIGUARD MAINTENANCE SERVICE			2,910	11,153
5	BARKS PLUMBING AND APPLIANCE	59,000	7,375		4,058
6	CENTRAL COAST INDUSTRIES, INC	302,939	37,867		30,638
7	CLAY'S SEPTIC SERVICES	302,710	37,839		27,505
8	E T SERVICES (METRO ROOTER)	-	-		750
9	FLUID RESOURCE MANAGEMENT	-			
10	HARVEY'S HONEYHUTS			23,100	
11	INGRAM & GREENE SANITATION	319,600	35,511		
12	J W ENTERPRISES	-			
13	LAKE NACIMIENTO RESORT	-			
14	LOPEZ, JAMES	-			
15	M P VACUUM TRUCK SERVICE	-			
16	NORTH COUNTY SEPTIC	87,450	12,493		
17	OCEANO DUNES SVRA	24,189	4,838		575
18	PORTABLE JOHNS, INC			13,720	
19	SOARES VACUUM SERVICE	87,000	10,875		
20	SPEED'S	-			
21	STORY CONSTRUCTION*		5,000		
22	VALLEY SEPTIC SERVICE	167,685	23,955		5111
23	YO BANANA BOY, INC	182,307	20,256		

Source: San Luis Obispo County Environmental Health

[1] Remaining companies have their own facilities for processing the waste, or collect mostly from So County area so SMWWTP is still more convenient, or, they are headquartered in Santa Maria.

Table 2. Santa Maria Waste Water Treatment Plant
Disposal Rates

Waste Material	Rate **
Septage	$0.0624 per gallon
Chemical Toilet	$0.0624 per gallon
Grease	$0.1039 per gallon
Small loads (<100gal)	$19.33 per load

*** A 5% increase is scheduled for July 2008*
Source: City of Santa Maria, Public Works Department, Dec 9, 2007

Assuring Facility Use

To assure the use of a LOWWTP facility several mechanisms are available: a)Permit Conditions; b) County Ordinance; c) State Statute/Regulations; d) Assessment/Sanitary District formation; and, e) Franchise. Through the use of these mechanisms the county could attempt to require disposal of liquid waste at a specific facility or in the county of origin.

Permit Conditions / County Ordinance / Franchise

Presently the septic tank pumping companies are required to obtain a permit from the Environmental Health Division of the County Health Agency. Staff did not respond to inquires regarding any current permit conditions, however, it may be possible to add a condition to the permit that requires the waste be disposed in the county of origin. If necessary, a similar requirement could be included in the County Code. Additional research is needed before concluding that the County has the authority to require or prohibit disposal at any facility and if it is possible to franchise collection operations, exclusively or non-exclusively.

State Statute/Regulations

The development of regulations to implement AB 885 have been ongoing at the State Water Resources Control Board since the legislation was passed and, in fact, the regulations were statutorily mandated to be completed “on or before January 1, 2004.” The Central Coast Regional Water Quality Control Board is presently updating the Basin Plan Onsite Waste Water Treatment System Criteria. Keeping in touch with this process may afford opportunities to direct the flow of waste, or at least have current information regarding maintenance frequency requirements to anticipate the capacity necessary for a liquid waste facility. The most recent draft is included here as Attachment C.

District Formation

More research is required to understand the potential for district formation.

Other considerations

According to the liquid waste companies, there is currently a need for a facility that accepts restaurant grease. This would include not only the water from the grease pumping, but the grease itself. It is currently dewatered locally, then trucked to Bakersfield or Los Angeles for disposal. Most companies rent space at SMWWTP for a holding tank.

Attachment A	Company Information
Attachment B	City of Santa Maria Rules and Procedures Manual for the Disposal of Hauled Wastewater
Attachment C	Central Coast Regional Water Quality Control Board Draft Onsite Wastewater System Criteria, November 30, 2007.

NCst=North Coast (Los Osos+North), NCo= North County, SoCo= South County(south of Grade) **TYPE**: sp=septic, ct=chemical toilet, g=grease, o=other, all=sp+ct+g **Attachment A**

	COMPANY INFORMATION	OWNER INFO./Mailing address	CONTACT	Phone	# TRUCKS	Origin NCst, NCo,SoCo	Type sp, ct, g, o, all	Quantity per mo	LOWWTP? Y or N	Notes
1	ADVANCED WASTEWATER SYSTEMS INC PO BOX 878 SANTA MARGARITA, CA 93453	ADVANCED SEPTIC & SEWER SERV. PO BOX 878 SANTA MARGARITA, CA 93453	GLENN S. ROSS	466-5161	3	-	SP	28,000	y	No origin information given
2	AL'S SEPTIC PUMPING SERVICE 1430 NIPOMO LOS OSOS, CA 93402	AL'S SEPTIC PUMPING SERVICE 1430 NIPOMO LOS OSOS, CA 93402	Vickie	528-0432	2	50% Nipomo/AG 50% NoCst/Atas	SP	74,000	y	Has 2 long haul & 2 regular trucks; need to confirm use of LO for ALL or just No Cst
3	AMERICAN MARBORG 2727 CONCRETE CT PASO ROBLES, CA 93447	AMERICAN MARBORG 2727 CONCRETE CT PASO ROBLES, CA 93447	Keith	239-2007	7	NoCo 50% Soco 50%	CT	31,700	Maybe some from No County	Takes to SMWWTP & own facility in Santa Barbara
4	AMERIGUARD MAINTENANCE SERVICE 840 S RANCHO DR # 4-139 LAS VEGAS, NV 89106	AMERIGUARD MAINTENANCE SERVICE PO BOX 12486 FRESNO, CA 93778		800-347-7876	1		G			no response
5	BARKS PLUMBING AND APPLIANCE 1700 N BROADWAY SANTA MARIA, CA 93454	DAVID BARKS Barks Plumbing & Appliance 1700 N BROADWAY SANTA MARIA, CA 93454	DAVID BARKS	928-5823	2	95% SoCo	SP/CT		not likely	Most waste is from So County, price and hours big factors for using LO
6	CALDERWOOD, DAWN 3400 MANOR ST BAKERSFIELD, CA 93308	DAWN CALDERWOOD P. O. Box 80358 BAKERSFIELD, CA 93308	DAWN CALDERWOOD	661-393-1151	2					no response
7	CENTRAL COAST INDUSTRIES, INC 2250 HUTTON RD NIPOMO, CA 93444	BRIAN TOUEY 974 SILVER DOLLAR LN NIPOMO, CA 93444	BRIAN TOUEY	349-9980	4	All over county	CT/SP 80/20	35,000 Slo County (self report)	Y	Would take ~20,000 to LOWWTP; yard is on Hutton Rd at county border
8	CLAY'S SEPTIC SERVICES 952 LIVE OAK RIDGE RD NIPOMO, CA 93444	CLAY'S SEPTIC SERVICES 952 LIVE OAK RIDGE RD NIPOMO, CA 93444	CLAY BARKS	929-5065	4	15% NorthCo 5% coast 80% South Co		57,700	Y	Pricing pricing pricing
9	E T SERVICES COUNTYWIDE SAN LUIS OBISPO, CA 93401	METRO ROOTER INC PO BOX 608 CLOVIS, CA 93613-0608		456-1270	1		G			Can't find them
10	FLUID RESOURCE MANAGEMENT 612 Clarion Ct SAN LUIS OBISPO, CA 93401-8177	WALLACE, JOHN L Wallace Group 612 Clarion Ct SAN LUIS OBISPO, CA 93401-8177	Chuck Ellison	597-7100 544-4011	1	Small WWTP systems	SP	15,000	Y	All small WWTP & winery sludge, no residential
11	HARVEY'S HONEYHUTS 465 NORFOLK CAMBRIA, CA 93428	HARVEY'S HONEYHUTS PO BOX 805 CAMBRIA, CA 93428	JENNIFER SMITH	927-8554	3	evenly all over county	CT	23,000	Y	
12	IN & OUT SEPTIC PUMPING SYSTEMS 311 W EL CAMPO RD ARROYO GRANDE, CA 93420	EVERETT MCGUIRE IN & OUT SEPTIC PUMPING 311 W EL CAMPO RD ARROYO GRANDE, CA 93420	EVERETT T MCGUIRE	805-610-5009	1	PR, Atas, SLO	SP	-	Y	Out of buisness last 3 months; hopes to get truck fixed and get back in.

NCst=North Coast (Los Osos+North), NCo= North County, SoCo= South County(south of Grade) **TYPE**: sp=septic, ct=chemical toilet, g=grease, o=other, all=sp+ct+g **Attachment A**

	COMPANY INFORMATION	OWNER INFO./Mailing address	CONTACT	Phone	# TRUCKS	Origin NCst, NCo,SoCo	Type sp, ct, g, o, all	Quantity per mo	LOWWTP? Y or N	Notes
13	INGRAM & GREENE SANITATION 6350 ALCANTARA ATASCADERO, CA 93422	INGRAM & GREENE SANITATION PO BOX 215 ATASCADERO, CA 93423	Roger Greene	466-0462 434-9616 fax	1	All over	SP	35,000	Y	100% to LOWWTP if $ right; grease needed; yard is in Templeton
14	J W ENTERPRISES 1689 MORSE AVE VENTURA, CA 93002	JAMES K WACHSMAN JW ENTERPRISES 1689 MORSE AVE VENTURA, CA 93002	JAMES K. WACHSMAN / Brent	658-2449	1		CT	-	y	2 trucks cover Santa Ynez to Paso; yard in Paso, will grow. Might dump 2x/week
15	LAKE NACIMIENTO RESORT 10625 NACIMIENTO LAKE DR PASO ROBLES, CA 93446	WATER WORLD RESORTS, INC Star Route Box 2770 BRADLEY, CA 93426	DUSTIN	(805) 238-4152						No response
16	LOPEZ, JAMES PO BOX 2566 PASO ROBLES, CA 93447	JAMES LOPEZ PO BOX 2566 PASO ROBLES, CA 93447	JAMES LOPEZ	238-6870 fax	1					No response cant' find
17	NORTH COUNTY SEPTIC 1850 CIRCLE B RD PASO ROBLES, CA 93446	NORTH COUNTY SEPTIC SVC, LLC PO BOX 2282 PASO ROBLES, CA 93447	DOUG ARNDT	239-3838	3	80% No County	SP	4,900 (15,000 self report)	Y	Some commmerical, mostly residential; LOWWTP should take grease
18	OCEANO DUNES SVRA 576 CAMINO MERCADO ARROYO GRANDE, CA 93420	CALIF DEPT OF PARKS & REC 576 CAMINO MERCADO ARROYO GRANDE, CA 93420	Kathy Holt	489-3412	2		CT/Vault	3,000	N	Pumps daily; takes to Oceano WWTP
19	PORTABLE JOHNS, INC 335 W BETTERAVIA RD SANTA MARIA, CA 93456	PORTABLE JOHNS, INC PO BOX 126 SANTA MARIA, CA 93456	Bob	928-6488	1	Coast: Morro Bay, Cayucos, Los Osos	CT	11,800	N	Minimal use of LOWWTP; takes to own larger holding tank at HQ in SM
20	SOARES VACUUM SERVICE 1119 CAMINO CABALLO NIPOMO, CA 93444	SOARES VACUUM SERVICE 1025 PATRICIO LN NIPOMO, CA 93444	Terry	929-4127	1	AG, Nipomo & Santa Maria	SP	10,000 Terry	N	Empties 2-3x/wk; LO too far to go, would not use
21	SPEED'S 1573 E BETTERAVIA RD SANTA MARIA, CA 93454	SPEED'S PO BOX 276 SANTA MARIA, CA 93456	Cheryl	925-1369	1	Diablo sludge	No septic		Only if takes Diablo sludge	Only pumps Diablo (takes to Santa Paula) and car washes
22	VALLEY SEPTIC SERVICE ~~5460 LORRAINE AVE~~ ~~SANTA MARIA~~, CA ~~93455~~ See PO box for new address	TIMOTHY BLAYLOCK VALLEY SEPTIC SERVICE P. O. Box 2385 2395? ORCUTT, CA 93457-2385	TIMOTHY BLAYLOCK	878-8340	3	70% So Co 30% No Co	SP	22,500	Y	Weekend and longer weekday hours needed; grease disposal needed
23	YO BANANA BOY, INC 791 PRICE ST #111 PISMO BEACH, CA 93449	YO BANANA BOY, INC 791 PRICE ST #111 PISMO BEACH, CA 93449	DAVE KRAUS	530-391-3030 805-709-6564	4					No response
24	STORY CONSTRUCTION	STORY CONSTRUCTION	Rod Story	528-5641		50% No Co 50% So Co	SP	(~20,000 self report)	Y	

ATTACHMENT B

CITY OF SANTA MARIA

RULES AND PROCEDURES MANUAL FOR THE DISPOSAL OF HAULED WASTEWATER

Utilities Department
Regulatory Compliance Division
805-925-0951, ext. 7270

Utilities Administrative Offices
2065 East Main Street
Santa Maria, CA 93454

FAX: 805-925-2708

Wastewater Treatment Plant
601 Black Road
Santa Maria, CA 93458

FAX: 805-928-2600

From Jim Citron, City SM 9/28/07

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CITY OF SANTA MARIA
WASTEWATER TREATMENT PLANT

RULES AND PROCEDURES MANUAL
FOR THE DISPOSAL OF HAULED WASTEWATER

ROUTINE PROCEDURES

HOURS OF OPERATION AND ON-SITE ATTENDANT

The receiving facility for hauled wastewater at the City of Santa Maria wastewater treatment plant, 601 Black Road, is open Monday through Friday from 7:00 a.m. until 4:00 p.m., excluding major holidays. The facility is closed from noon until 1:00 p.m. each day. An attendant is on site during all hours of operation to perform sampling and monitor disposal procedures. No trucks are permitted through the gate prior to 7:00 a.m. Trucks may access the receiving facility according to the following schedule which is based upon the size of the disposal load.

Truck or Trailer Tank Capacity	**Receiving Hours**
Less than 1,000 gallons	7:00 a.m. – 4:00 p.m.
1,000 - 3,000 gallons	7:00 – 9:00 a.m. *and* 1:00 – 3:00 p.m.
More than 3,000 gallons	9:00 a.m. – 12:00 noon *and* 1:00 – 3:00 p.m.

To seek any exception to normal hours of operation, please apply in advance directly to the attendant on site at 805-331-0955. If the attendant is unavailable, you may reach other wastewater treatment plant staff at 805-925-0951, ext. 7270.

ACCEPTABLE HAULED WASTE STREAMS AND DISPOSAL RATES

Septage and Chemical or Portable Toilets — Pumped septage tank waste and chemical or portable toilet waste are permissible for disposal under the conditions outlined in this manual. The current disposal rate is $0.0594 per gallon of pumper truck tank capacity.

Grease and Oil — Haulers may apply for permission to place a grease holding tank, to be owned and maintained by the hauler, on City-owned property. Only the decanted water is acceptable for disposal on-site. The hauler is responsible for the removal of the grease and oil for disposal or recycle at another location.

The current disposal rate is $0.0990 per gallon. The City shall also hold a deposit from the permittee for as long as the tank remains on City property, the amount to be determined by the size of the holding tank. The hauler may apply for a refund of the deposit when the holding tank and its contents are removed from City property, and the area has been thoroughly cleaned of all debris and spills.

Sludge — In the case of sludge (wastewater with a percentage of solids over three-percent) disposal, *both* the hauler and the sludge generator must be permitted by the City of Santa Maria. The generator must submit analytical results of representative sample material when applying for a permit, and annually thereafter. In some cases, a site inspection will be performed by City staff prior to permit approval, and additional samples may be required. The current disposal rate is $0.1945 per gallon of pumper truck tank capacity.

Unacceptable Loads — The wastewater treatment plant is unable to receive thick waste loads of such character that they can not be run through the plant but need instead to be dried for landfill disposal (i.e. solids, sand, sediment, or debris); dewatered septage; hazardous waste; or wine or brewery waste.

CITY OF SANTA MARIA WASTEWATER DISCHARGE PERMITS

To become permitted by the City of Santa Maria to access the wastewater treatment plant, submit a completed application along with copies of County Health Department Permit(s) and tank capacity documentation for **each** separate vehicle your company will be bringing on-site. You may pick up an application at the plant or the Utilities Department Administrative building. You may also request that one be mailed to you. Addresses and phone numbers are located on the cover page of this manual.

After a completed application with all necessary documentation has been received and reviewed, a determination will be made on whether a permit shall be granted. Only after the issuance of a permit will loads be accepted for discharge. There is no charge associated with a wastewater discharge permit.

STAGING TRUCKS

Upon arrival at the receiving station, trucks should line up along the curb of the driveway approach to the dump station and be serviced on a first-come-first-served basis. Each truck will be checked to ascertain that the hauling company and the truck are permitted by the City, the driver's identification is on file, and a current County Health Department inspection sticker is affixed to the vehicle.

MANIFEST/GENERATOR ACKNOWLEDGEMENT FORMS PROCEDURES

Generator Acknowledgment Forms for both domestic septage and commercial wastewater are available from the on-site attendant. Drivers must have the Generator Acknowledgement completed and signed by the generator prior to any loads arriving at the wastewater receiving facility. Upon arrival, each driver must complete a Manifest and attach the Generator Acknowledgements documenting the origin of the waste, type of waste, etc. The attendant will cross-reference the forms checking for overall completeness, signatures, confirming no combined waste streams, dates, and origin of wastewater. Dumping will be authorized to begin only after the load is cleared for disposal by the attendant.

For pre-approved after-hours use only, Manifest forms are available at the sign-in station near the front door of the wastewater treatment plant offices. Drivers should leave a copy of the completed Manifest at the sign-in station to be collected on the next business day.

SAMPLING PROCEDURES

The attendant will label a sample jar with the date, manifest number, type of waste, and take the best sample available providing optimum representation of the load. Samples will be checked initially for color and odor, and findings will be recorded. If an unusual odor or color is noted, the discharge will be halted while the contents of the tank are inspected. If the contents appear to be unpermitted waste, the load will be rejected. A one-liter sample will be retained for additional analysis. The sample will be meter-tested for pH, conductivity, and instrument tested for percent solids, and findings will be recorded. If the sample exceeds allowable limits, it will be rejected. A composite jar will also be retained containing representative samples from every load received that day.

Samples will be placed in a 4º C (or less) refrigerator located in the lab for later analysis. Sample data will be logged, and at the end of the week, the entire volume of the daily composites will be combined in order to create a weekly composite. The weekly composite will be analyzed for percent solids, percent volatile solids, and BOD. Under no circumstances will the attendant accept samples collected

prior to the truck arriving at the facility. Neither shall samples be collected from the tank drain fittings.

RESIDENTIAL SEPTAGE WASTE LIMITS **TABLE 1**

Type of Hauled Waste	*Allowable Limits*		*Test Method*
Residential Septic Tanks	Conductivity	3,000	Meter and/or instrument tests to be performed by WWTP attendant.
	BOD	10,000 mg/l	
	pH	5.5-9.5	
	O&G	300 mg/l	
	% Solids	3%	

CHEMICAL AND PORTABLE TOILET SAMPLING PROCEDURES

Chemical toilet products used are to be odor-masking agents only. No quaternary ammonia chemical products or biocides are acceptable in chemical toilet loads. Attendant may perform random testing to detect use of any unacceptable chemical additives.

CHEMICAL OR PORTABLE TOILET WASTE LIMITS **TABLE 2**

Type of Hauled Waste	*Allowable Limits*		*Test Method*
Chemical or Portable Toilets	Conductivity	3,000	Meter and/or instrument tests to be performed by attendant. Additional random tests to be performed by attendant or lab at attendant's discretion.
	BOD	10,000 mg/l	
	pH	5.5-9.5	
	O&G	300 mg/l	
	Pentachlorophe	0.10 mg/l	
	Total Phenols	4.00 mg/l	
	TPH	100 mg/l	
	% Solids	3%	
	Metals	See Table 4	
	Volatile Organic Chemical Limits	See Table 5	

COMMERCIAL WASTEWATER SAMPLING PROCEDURES

Prior to arrival at the plant, commercial generators shall use cited EPA methods to test for allowable limits. Results shall be submitted to Regulatory Compliance staff for review prior to acceptance of commercial loads. An additional sample of the waste from each truck will be collected by the attendant for later analysis. For specific parameters associated with specific loads, or for any variation to the required tests, apply in advance directly to the on-site attendant.

COMMERCIAL WASTEWATER LIMITS **TABLE 3**

Type of Hauled Waste	Allowable Limits		EPA Method
Commercial Septic Tanks	Conductivity	3,000	120.1
	BOD	10,000 mg/l	405.1
	pH	5.5-9.5	150.1
	TR-PH	100 mg/l	418.1
	% Solids	3%	
	Pesticides		608
	Volatile Organic	See Table 5	8260

Fuel Contaminated Wastewater	Conductivity	3,000	120.1
	BOD	10,000 mg/l	405.1
	pH	5.5-9.5	150.1
	TR-PH	100 mg/l	418.1
	Pesticides		608
	Metals	See Table 4	See Table 4
	Volatile Organic	See Table 5	8260
Carwash Waste	Conductivity	3,000	120.1
	BOD	10,000 mg/l	405.1
	pH	5.5-9.5	150.1
	TR-PH	100 mg/l	418.1
	% Solids	3%	
	Pesticides		608
	Volatile Organic	See Table 5	8260
Groundwater remediation site (not to be associated with fuel contamination)	To be determined based on the remediation investigation.		

METALS LIMITS **TABLE 4**

Type of Metal	Local Limits and/or Title 22 Limits (24-hour maximum mg/l)	EPA Method
Antimony (Sb)	15	200.7 204.1-2
Arsenic (As)	1.5	200.7 206.2-5
Barium (Ba)	100	200.7 208.1-2
Beryllium (Be)	0.75	200.7 210.1-2
Boron (B)	1.0	200.7 212.3
Cadmium (Cd)	1.5	200.7 213.1-2
Chromium, Total (Cr)	4.0	218.1-3
Chromium, hexavalent	0.5	218.1-3
Cobalt (Co)	80	200.7 219.1-2
Copper (Cu)	4.0	200.7 220.1-2
Cyanide, Total (CN)	2.0	335.2-3
Lead (Pb)	1.0	200.7 239.1-2
Mercury (Hg)	0.5	245.1-2
Molybdenum (Mo)	350	200.7 246.1-2
Nickel (Ni)	3.00	200.7 249.1-2
Selenium (Se)	1.00	200.7 270.2
Silver (Ag)	3.0	200.7 272.1-2
Thallium (Tl)	7.0	200.7 279.1-2
Vanadium (V)	24	200.7 286.1-2
Zinc (Zn)	3.0	200.7 289.1-2
Total Metals	7.50	

VOLATILE ORGANIC COMPOUNDS LIMITS **TABLE 5**

Compound	EPA Drinking Water Standard (maximum contaminant limit mg/l)	EPA Method
Benzene	0.005	8260
Carbon tetrachloride	0.005	8260
Chlorobenzene	0.01	8260
1,2-Dibromo-3-chloropropane	0.0002	8260
Dibromomethane	0.005	8260
1,2-Dichloroethane (edc)	0.005	8260
1,2-Dichloropropane	0.005	8260
Ethylbenzene	0.7	8260
Ethylene dibromide (edb)	0.00005	8260
Methylene chloride	0.005	8260
Styrene	0.1	8260
Toulene	1.0	8260
1,2,4-Trichlorobenzene	0.07	8260
1,1,1-Trichloroethane (tca)	0.005	8260
1,1,2-Trichloroethane	0.005	8260
Vinyl chloride	0.002	8260
Xylene	10.0	8260

HOUSEKEEPING AND ROUTING PAPERWORK

Haulers are not permitted to flush the contents of their tanks. Any spillage should be promptly hosed to the dump station drain. If solid material is spilled on the truck during the unloading operation, the driver must wash the material off the truck before the truck leaves the facility.

At the end of each regular business day, the attendant shall compile the day’s Manifests, Generator Acknowledgements, and any other notes on that day's activities for billing purposes and documentation.

NON-ROUTINE PROCEDURES

RECEIVING FACILITY SHUTDOWN

The primary purpose of the City of Santa Maria's wastewater treatment plant is to process sewer flows from the City. Under no circumstances is the City obligated to receive hauled wastewater loads. In the event of plant upset, equipment breakdown, or any other such occurrence which requires maintenance or repairs to City property, it may become necessary to temporarily shutdown the hauled wastewater receiving facility with or without notice.

REJECTING LOADS

The attendant shall reject any load determined to have combined waste streams, any load exceeding allowable limits, or any load determined to be primarily oil and grease. In addition, the attendant will reject any load of suspicious origin, or if any combination of circumstances lead the attendant to believe that the load should not be approved for discharge.

NO VALID PERMIT

Due to national security measures, under no circumstances will an unknown driver or unpermitted truck or hauling company be allowed access to the wastewater treatment plant. If a truck arrives and either the driver is unknown, or the hauling company or truck are not permitted, the load shall be rejected.

SPILLS

All significant spills are to be reported immediately to the on-site attendant or another wastewater plant operator. Prompt efforts should be made to keep spill contained. The hauler is responsible for pumping, cleaning, and chlorinating the area without delay. The spill area must be inspected by plant staff prior to the hauler's departure.

INJURIES

Any injuries sustained by a hauler or driver on City property are to be reported immediately to City staff. If the injury appears to be serious or life threatening, City staff should immediately call 911 and administer first aid. The attendant will complete a City of Santa Maria Accident Report and submit it to his immediate supervisor for processing and follow-up.

DAMAGE

Any City-owned property or vehicle that becomes damaged by a hauling company driver or truck must be reported immediately to the on-site attendant or wastewater plant operator. Haulers shall not depart from the scene of the accident until it has been properly reported and investigated, and a City of Santa Maria Accident Report has been completed. Should either the hauler or a City employee determine that the accident is significant and requires Police response, the highest-ranking City employee at the scene will be responsible for contacting the Santa Maria Police Department by either radio or telephone.

LEAKING TRUCKS AND MECHANICAL FAILURES

The attendant will make note of any trucks with small leaks or fittings and valves that are dripping.

These defects will be brought to the attention of the driver, and the hauler must see that the proper repairs are made prior to accessing the plant again. If a truck is found to have a significant leak, the attendant will deny access until repairs are made. Trucks with mechanical failures such as leaking motor oil, wheels with missing lug nuts, or any other dangerous condition, which could lead to a truck spill, will also be denied access.

OIL CONDENSATE DISCHARGE

Discharging of oil condensate from the oil catch muffler is strictly prohibited. Any hauler found discharging oil condensate on City property shall face enforcement action.

HAULER TRUCK BREAKDOWN

If a truck breaks down at the hauled wastewater receiving facility, the driver must promptly arrange for repairs or towing and make every effort to minimize disruption of operations. If necessary, a tow truck may be called to remove the disabled vehicle. Once repaired, the vehicle will be directed to the end of the line.

PRELIMINARY DRAFT

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF MAY 9, 2008
Prepared on November 30, 2007

ITEM NUMBER: **XX**

SUBJECT: **Resolution No. R3-2008-0005; Amendment to the Water Quality Control Plan, Central Coast Basin, revising criteria for onsite wastewater systems**

KEY INFORMATION

Location:	Throughout the Central Coast Region
Type of Waste:	Domestic wastewater discharged from individual and community onsite systems
This Action:	Adoption of Resolution No. R3-2008-0005

SUMMARY

Chapters IV and V of the Water Quality Control Plan, Central Coast Basin (Basin Plan) specify criteria for siting, design and ongoing management of individual and community onsite wastewater disposal systems (commonly called septic systems). The proposed Resolution No. R3-2008-0005 (included as Attachment 1) will update and revise existing Basin Plan criteria for onsite wastewater systems. Most of the proposed revisions provide clarifying language to existing requirements without substantially changing such requirements. However, some revisions replace discretionary language of recommendations (e.g. "should") with mandatory language of requirements (e.g. "shall"). By adopting the proposed resolution, language in the Basin Plan will be strengthened and clarified in a manner expected to result in improved long-term water quality protection in areas served by onsite wastewater systems. The proposed revisions are also expected to improve consistency and customer service by reducing the need for subjective interpretation of imprecise language. Updating the Basin Plan criteria for onsite wastewater systems will complete a Triennial Review list priority task, which has been backlogged for more than a decade.

DISCUSSION

Background - The Basin Plan criteria for individual and community onsite wastewater disposal systems were last updated in 1983 (Resolution 83-12). Basin Plan criteria require proper siting and design of onsite wastewater systems. The Basin Plan criteria also recommend a variety of management measures intended to ensure long-term success of properly functioning systems and prevent water quality impacts from such systems. During the past 25 years, implementation of those criteria has demonstrated revisions are needed to clarify vague language and, in some cases, strengthen language

from recommendations to requirements. The most noteworthy revisions proposed in Resolution No. R3-2008-0005 require local jurisdictions to develop onsite wastewater system management plans prior to approval of alternative (non-conventional) onsite wastewater systems. Proposed revisions are addressed in further detail below.

Due to the rural nature, demographics and topography of the Central Coast Region, many (thousands) individual and community onsite wastewater systems treat and dispose of residential and commercial wastewater. The Central Coast Water Board implements its Basin Plan requirements for onsite systems through direct regulation (issuance of waste discharge requirements), memoranda of agreement with local jurisdictions, and in some cases simply defers regulation to the local jurisdiction. Many local jurisdictions (primarily counties) retain permitting authority for onsite systems and implement their own requirements alongside the Basin Plan requirements. In most cases of individual systems that comply with Basin Plan criteria, the Water Board does not exercise its authority as long as the local jurisdiction is enforcing the Basin Plan requirements. Because of this overlap of regulatory authority, it is imperative that Water Board staff and county/city staff work cooperatively to implement consistent requirements. To this end, Central Coast Water Board staff members plan to meet with representatives from each county within our region during development of the proposed criteria, to further discuss revisions and gain input from these local jurisdictions.

Conventional onsite systems should be "fool proof". In other words, the conventional onsite system is simple: design is simple, installation is simple, and operation is simple. The Basin Plan criteria for onsite systems are intended to ensure ongoing water quality protection despite the simple nature of most onsite systems. With this simplicity in mind, the proposed revisions are intended to ensure proper siting and design of onsite systems as preventative measures, rather than accommodating unfavorable site limitations with alternative systems. Should alternative systems be necessary, such alternatives may be provided for within onsite system management plans developed and implemented by local jurisdictions.

Alternative onsite systems (including package treatment, mound, evapotranspiration, and other non-conventional systems) are specifically engineered to overcome site constraints such as shallow groundwater or slow infiltrative soils, which preclude use of conventional systems. Alternative systems are considered experimental and must be monitored for performance. Typically, monitoring of alternative systems only occurs where such systems are regulated by waste discharge requirements or through an onsite management plan. The proposed criteria require monitoring of alternative systems, consistent with an onsite management plan approved by the Water Board Executive Officer. The proposed criteria prohibit alternative systems that are not consistent with an approved onsite management plan.

Onsite Management Plans - As stated in the Basin Plan, onsite wastewater management plans should be implemented to eliminate the cumulative impacts resulting from continued use of individual, alternative and community onsite disposal systems. The Basin Plan currently recommends that permitting agencies prepare and implement wastewater management plans to identify areas where poor conditions for onsite systems or increasing urbanization using onsite systems could lead to degradation of water quality or nuisance conditions. The management plans should specify design, installation, and monitoring requirements, including the formation of septic system maintenance districts. The Basin Plan recommends wastewater management plans for

the following areas: San Martin, San Lorenzo Valley, Carmel Valley, Carmel Highlands, Prunedale, El Toro, Shandon, Templeton, Santa Margarita/Garden Farms, Los Osos/Baywood Park, Arroyo Grande, Nipomo, Upper Santa Ynez Valley, and Los Olivos/Ballard. However, only one county within the Central Coast Region has developed an approved onsite wastewater management plan (Santa Cruz County), since the recommendation was incorporated into the Basin Plan in 1983. Consequently, water quality and public health impacts resulting from most existing and future discharges from onsite systems remain uncharacterized. The proposed criteria require development and implementation of onsite management plans to investigate and mitigate existing and potential future water quality issues resulting from continued use of onsite systems. The required components of an onsite management plan are consistent with those specified by U.S. Environmental Protection Agency in it design manual *Onsite Wastewater Treatment and Disposal Systems*. Staff recommends (in the proposed amendment) that the Water Board require these plans as we revise memoranda of understanding with permitting agencies, as discussed below.

Statewide Regulation of Onsite Systems - In 2000, the California State Legislature passed into law Assembly Bill 885 (Section 13291 of the California Water Code). Assembly Bill 885 requires the State Water Board (in consultation with state and local health departments, California Coastal Commission, counties, cities and other interested parties) to adopt regulations or standards for onsite wastewater systems. For the past eight years, Central Coast Water Board staff members have been participating in the State Water Board's regulation development process. These regulations are not yet established and we do not anticipate that the statewide regulations will be adopted in the near future. Also, we do not anticipate that the statewide regulations (when adopted) will replace the need for Basin Plan criteria for onsite systems. Regardless of concurrent efforts to develop statewide regulations for onsite systems, updating the Basin Plan with the proposed Resolution No. R3-2008-0005 is needed to provide for clear and effective guidance and water quality protection. If and when statewide regulations are adopted, we will revisit the Basin Plan criteria to make it consistent with the statewide regulations.

MOUs with Local Jurisdictions - The Central Coast Water Board creates water quality protection policies, provides guidance, and implements region-wide programs in conjunction with local agencies. Local jurisdictions implement a variety of regulations (including Water Board requirements) through their permitting processes. In order to implement these coordinated roles, the Water Board and local jurisdictions enter into memoranda of understanding (MOUs), which describe each entity's role within formal institutional agreements. Central Coast Water Board staff members have been in the process of developing and updating such MOUs over the past few years (some of which are more than 25 years old). The proposed Basin Plan revisions will clarify expectations, onsite criteria, and agency roles that will be incorporated into MOUs with local jurisdictions.

Until 2004, the MOUs served as waivers of waste discharge requirements for individual and community onsite systems. However, all such waivers expired in 2004, leaving onsite systems subject to individual waste discharge requirements (a cumbersome and redundant oversight). Resolution No. R3-2008-0006 (today's agenda item No. __) is proposed as a replacement waiver of waste discharge requirements for onsite systems meeting Basin Plan criteria. Water Board staff believe that this approach (MOUs and waivers) will prove to be most effective in protecting water quality from impacts associated with onsite systems in a streamlined fashion (without duplicative agency

oversight). Detailed information regarding the proposed waiver for onsite systems is included in the staff report for Item No. __.

Detection of Failing Systems - Failed septic systems can degrade groundwater and cause unhealthy and nuisance conditions on the ground surface. Most failures are indicated by surfacing effluent, which can show up as a gray liquid or unusually lush plant growth. However, septic system discharges can affect groundwater and remain undetected for years. Few regulatory or permitting agencies have active programs to monitor or inspect standard septic systems. Most failures that come to the attention of agencies are found by permit applications for replacement or repair of septic systems or complaints from neighbors. Implementation of the proposed criteria will ensure that site conditions and treatment and disposal system designs meet water-quality protective criteria. In this manner implementation of the proposed criteria will prevent failing septic systems and reduce water quality impacts caused by such failures.

Proposed Revisions - The proposed revisions to Basin Plan criteria for onsite systems consist primarily of clarifying language and strengthening recommendations to requirements. The revised criteria are included as Attachment 1A to this report. Additions are underlined and deletions are shown in strike-out. Format revisions are not identified as additions or deletions, since they do not represent substantial change in the Basin Plan content. Most of the proposed changes reflect the following issues:

1. General discussion is deleted and moved to this staff report.

2. Criteria are reorganized to ease identification of requirements, recommendations and prohibitions in a streamlined fashion.

3. Additional terms are defined for clarity.

4. Many recommendations are revised to requirements to compel compliance with specified criteria.

The significant proposed revisions and justification are summarized here.

Proposed Revision	**Basin Plan Section**	**Justification**
Streamlined definition of the term "watercourse".	VIII.D.	Existing definition (from Webster's Dictionary) led to confusion regarding alternate, meanings of the term. Proposed definition is a simplified portion of existing definition.
Narrative discussion of the benefits resulting from corrective actions for existing systems is deleted and specific criteria incorporated into revised sections.	VIII.D.1.	Narrative format made identification of specific requirements and recommendations difficult to interpret. Revised format will provide for easily identifiable criteria for existing onsite systems.
Dual leachfields recommended in existing criteria are required in proposed revisions.	VIII.D.1.a. and VIII.D.2.b. 13 and 14.	Dual leachfields provide immediate remedy in event of system failure and are considered appropriate for all systems.
Onsite management plans (developed and implemented by local jurisdictions) are recommended in existing criteria, and required in proposed revisions.	VIII.D.1.b.	See expanded description above.

Contents of onsite management plans are expanded from general description currently listed in the Basin Plan.	VIII.D.1.b.	Outline of onsite management plan contents included to assist local jurisdiction in developing effective plans, specific contents based upon U.S. EPA guidance.
New requirement added for additional treatment for onsite discharges to very fast percolating soils (<1 minute per inch).	VIII.D.2.a.11 and 24.	Very fast percolating soils do not provide for adequate biological treatment of leachate prior to disposal into underlying groundwater. Therefore nutrient reduction needed to protect groundwater must occur in the treatment unit.
Requirement added calling for onsite disposal systems on slopes greater than 20% to be designed by registered engineer.	VIII.D.2.a.12 .	Increased development in steeper areas (more challenging for onsite disposal) increases concern regarding slope stability and hydraulics. Accordingly, such systems require professional engineering expertise.
Prohibition of onsite disposal within areas subject to 10-years flood zone is revised to 25-year flood zone.	VIII.D.2.a.14 .	Increased development in flood prone areas and projected long-term use of onsite disposal systems, a greater margin of safety is needed.
New prohibition limiting onsite disposal in fill unless specifically designed as a disposal area.	VIII.D.2.a.25 .	Prohibition added to prevent leachate from onsite disposal surfacing at interface of fill and native soil.
New prohibition limiting onsite disposal of self-regenerating water softener brine unless such disposal is consistent with a salts minimization plan.	VIII.D.2.f.5.	Salts discharged to onsite systems migrate (virtually untreated) into underlying groundwater and must be minimized to protect groundwater quality.

The shift from voluntary to compulsory actions reflects the rate of implementation of existing Basin Plan criteria. Typically (over the past 25 years), local jurisdictions have been unwilling to implement actions beyond those specifically required. As a result, thousands of onsite wastewater disposal systems have been permitted and installed without any means of evaluating resulting water quality impacts.

Sections of Basin Plan Chapter 5 pertaining to onsite wastewater systems are also proposed to be revised. The revisions strengthen recommendations to requirements and more clearly describe existing Resolution 69-01, regarding onsite systems in urbanizing areas. Proposed revisions to Chapter 5 are shown on Attachment 1B.

Economic Effects of the Amendment - The proposed amendment will change existing recommendations to requirements, which will further constrain where onsite systems may be used. For properties that are clearly suitable for conventional onsite systems, the proposed amendment will have little or no economic consequences. For properties that may not be suitable for conventional onsite systems (e.g., inadequate separation to a watercourse), the proposed amendment may require an advanced onsite system to mitigate for poor site conditions. At a small percentage of undeveloped properties where site conditions are very poor for an onsite system, the property may no longer be suitable for an onsite system and a community sewer connection may be required. Alternative onsite systems and community sewer connections are generally more expensive than conventional onsite systems. Additionally, the proposed amendment call for local jurisdictions to develop and implement onsite wastewater management plans. Onsite wastewater management plans have not (as yet) been developed by many local jurisdictions and will carry associated development and implementation costs. Water Board staff has considered the costs of implementing this amendment and finds these costs to be reasonable relative to the water quality and public health benefits derived from implementing the amendment.

ENVIRONMENTAL SUMMARY

On July 30, 2004, Central Coast Water Board held a scoping meeting pursuant to the California Environmental Quality Act (CEQA)(California Public Resources Code 21083.9(a)(2) to discuss the development of proposed amendments to the Basin Plan. The meeting focused on requirements to develop onsite management plans. During the past few months, Water Board staff members have met with county representatives and other stakeholders who will directly implement the revised Basin Plan criteria.

A Notice of Public Hearing has been circulated (Attachment 2). A Notice of Filing, this staff report, and Environmental Checklist were prepared and circulated by Water Board staff to interested agencies and persons prior to consideration of the Basin Plan Amendment by the Central Coast Water Board. This will satisfy the environmental documentation requirements of the Basin Planning process and the Federal Clean Water Act.

COMMENTS

Pending

RECOMMENDATION

Adopt Resolution No. R3-2008-0005, as proposed.

ATTACHMENTS

1. Proposed Resolution No. R3-2008-0005, with attachments:
- Attachment A - Revised Basin Plan Chapter 4 (onsite sections only)
- Attachment B - Revised Basin Plan Chapter 5 (onsite sections only)
- Attachment C - Certificate of Fee Exemption
- Attachment D - Report for Basin Plan Amendment (including the Environmental Checklist)

2. Notice of public hearing dated _____

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401

RESOLUTION NO. R3-2008-0005

AMENDING THE WATER QUALITY CONTROL PLAN REVISING ONSITE WASTEWATER SYSTEM CRITERIA

WHEREAS, the California Regional Water Quality Control Board, Central Coast Region (hereafter Central Coast Water Board) finds:

1. The Central Coast Water Board updated its policy regarding siting and design of onsite wastewater systems on September 16, 1983, by adopting Resolution No. 83-12.

2. The Central Coast Water Board adopted the current Water Quality Control Plan, Central Coastal Basin (Basin Plan) on September 8, 1994. The Basin Plan includes beneficial use designations, water quality objectives, implementation plans for point source and nonpoint source discharges, and statewide plans and policies. The text and requirements specified in Resolution No. 83-12 are included in the Basin Plan as provisions of Chapters 4 and 5.

3. The Central Coast Water Board periodically revises and amends the Basin Plan. Central Coast Water Board staff determined that the Basin Plan requires further revision and amendment to clarify and strengthen criteria for onsite wastewater systems throughout the region. The Central Coast Water Board will regulate discharges from onsite wastewater systems using waste discharge requirements (WDRs) or waiver of WDRs, in conjunction with memoranda of understanding with local jurisdictions.

4. In December 2007, Water Board staff contacted State Water Resources Control Board (State Water Board) staff to inquire if the proposed amendment to the Basin Plan required external scientific review to comply with Health and Safety Code Section 57004. (*State Water Board response to be incorporated here).*

5. Public Notice - Interested persons and the public have been informed of the Central Coast Water Board's intent to revise the Basin Plan criteria for onsite wastewater systems. Efforts to inform the public and solicit public comment include a public meeting/workshop, several individual meetings with vested stakeholders, and a number of telephone conversations with interested parties. Notice of public hearing was given by advertising in newspapers of general circulation within the Region and by mailing a copy of the notice to all persons requesting such notice and applicable government agencies. Central Coast Water Board staff responded to oral and written comments received from the public.

6. Economic Considerations - The Water Board considered costs associated with implementing the revised criteria specified in this Basin Plan amendment, Resolution No. R3-2008-0005. The Water Board has considered the costs of implementing the amendment to dischargers and local jurisdictions, and finds these costs to be reasonable relative to the water quality benefits derived from implementing the Basin Plan amendment.

7. Anti-Degradation – This Resolution is consistent with the provisions of the State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California" and 40 Code of Federal Regulations (CFR) 131.12. Regulation of discharges from onsite wastewater systems has been a component of the Water Board's regulatory oversight for several decades, and the clarifying and strengthening language provided in this resolution provides more regulatory oversight compared to that described in Resolution No. 83-12. Therefore, the Basin Plan amendment will result in improved water quality protection throughout the region and maintains the level of water quality necessary to protect existing and anticipated beneficial uses.

8. CEQA - The Central Coast Water Board concurs with the analysis contained in the Environmental Checklist, the staff report, and the responses to comments and finds that the analysis complies with the requirements of the State Board's regulations, as set forth in the California Code of Regulations (CCR), Title 23, section 3775 et seq. The project (adopting this Resolution) consists of amending an exiting regulatory program implemented by a regulatory agency for the purpose of protecting natural resources. As such, the project is exempt from the California Environmental Quality Act (CEQA) in accordance with section 15307 and 15308 of the California Code of Regulations (CCR).

9. The proposed amendment is a revision of onsite wastewater system criteria specified in the Basin Plan (Chapters 4 and 5) and applicable throughout the Region. The revisions to Chapters 4 and 5 of the Basin Plan are shown on Attachments A and B (respectively) to this Resolution. Attachments A and B identify significant additions/deletions shown with underline/strikeout. Text that is simply moved is not identified as a proposed change.

10. Area of Applicability - The effect of this amendment will be throughout the Region, where onsite systems are used for treatment and disposal of wastewater.

11. The Basin Plan amendment must be submitted for review and approval by the State Water Resources Control Board (State Board) and the State Office of Administrative Law (OAL). The Basin Plan amendment will become effective upon approval by OAL. The subject Resolution will become effective immediately.

12. The amendment to the Basin Plan will result in no potential for adverse effect, either individually or cumulatively, on wildlife and is therefore exempt from fee payments to the Department of Fish and Game under the California Fish and Game Code.

13. On May 9, 2008, in San Luis Obispo, California, the Water Board held a public hearing and heard and considered all public comments and evidence in the record.

THEREFORE, BE IT RESOLVED that:

1. Pursuant to CWC sections 13240, the Water Board, after considering the entire record, including oral testimony at the hearing, hereby adopts the Basin Plan amendments shown in Attachments A and B to this Resolution.

2. The Central Coast Water Board's Executive Officer is directed to forward copies of the Basin Plan amendments to the State Water Board in accordance with the requirements of CWC Section 13245.

3. The Central Coast Water Board requests that the State Water Board approve the Basin Plan amendments in accordance with the requirements of CWC sections 13245 and 13246, and forward it to OAL for approval. The Central Coast Water Board shall file a Notice of Decision with the Secretary of Resources and the Governor's Office of Planning and Research (State Clearinghouse) after approval by OAL.

4. The Central Coast Water Board Executive Officer is authorized to sign a Certificate of Fee Exemption (included as Attachment C to this Resolution).

5. If, during its approval process, the State Water Board or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Central Coast Water Board Executive Officer may make such changes, and shall inform the Central Coast Water Board of any such changes.

I, Roger W. Briggs, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of the Resolution adopted by the Central Coast Water Board, on May 9, 2008.

_____

Roger W. Briggs, Executive Officer

Attachments:
A - Revised Basin Plan Chapter 4 (onsite sections only)
B - Revised Basin Plan Chapter 5 (onsite sections only)
C - Certificate of Fee Exemption
D - Report for Basin Plan Amendment (including the Environmental Checklist)

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CHAPTER 4. IMPLEMENTATION PLAN

VIII.D. INDIVIDUAL, ALTERNATIVE AND COMMUNITY ONSITE WASTEWATER SYSTEMS

~~On-site sewage disposal wastewater systems and other similar methods for liquid waste disposal are sometimes viewed as interim solutions in urbanizing areas, yet may be required to function for many years. On-site systems can be a viable long-term waste disposal method with proper siting, design, construction, and management. In establishing on-site system regulations, agencies must consider such systems as permanent, not interim systems to be replaced by public sewers. The reliability of these systems is highly dependent on land and soil constraints, proper design, proper construction, and proper operation and maintenance.~~

~~If on-site sewage treatment facilities are not carefully managed, problems can occur, including:~~

- ~~odors or nuisance;~~
- ~~surfcing effluent;~~
- ~~disease transmission; and,~~
- ~~pollution of surface and ground waters.~~

~~Odors and nuisance can be objectionable and annoying and may obstruct free use of property. Surfacing effluent (effluent which fails to percolate and rises to the ground surface) can be an annoyance, or health hazard to the resident and neighbors. In some cases, nearby surface waters may be polluted.~~

~~On-site sewage disposal systems are a potential mechanism for disease transmission. Sewage is capable of transmitting diseases from organisms which are discharged by an infected individual. These include dysentery, hepatitis, typhoid, cholera, and gastro intestinal disorders.~~

~~Pollution of surface or ground waters can result from the discharge of on-site system wastes. Typical problem waste constituents are total dissolved solids, phosphates, nitrates, heavy metals, bacteria, and viruses.~~

~~Subsurface disposal~~ Onsite wastewater systems may be used to treat and dispose of wastewater from: (1) individual residences; (2) multi-unit residences; (3) institutions or places of commerce; (4) industrial sanitary sources; and, (5) small communities. All individual and multi-unit residential developments are subject to criteria in this section of the Basin Plan. Commercial, institutional and industrial developments with a discharge flow rate less than 2,500 gallons per day generally are not regulated by waste discharge requirements; therefore, they must comply with these criteria. ~~Community systems must also comply with criteria relating to this subject within the Basin Plan.~~ Community systems are defined for the purposes of this Basin Plan as: (1) residential wastewater treatment systems ~~for~~ serving more than 5 units or more than 5 parcels; or, (2) commercial, institutional or industrial systems ~~to treat~~ treating sanitary wastewater equal to or greater than 2,500 gallons per day (average daily flow). Community systems ~~of this type and size~~ may be subject to waste discharge requirements.

Conventional onsite wastewater systems consist of septic tanks and leachfield or seepage pits and are typically designed to treat and dispose of domestic wastewater. Alternatives to conventional onsite system designs ~~have been~~ are used when site constraints prevent the use of conventional systems. Examples of alternative systems include (but are not limited to) enhanced treatment systems, mound ~~and~~ or evapotranspiration disposal systems, or at-grade disposal systems. ~~Remote subdivisions, commercial centers, or industries may utilize conventional collection systems with community treatment systems and subsurface disposal fields for sanitary wastes.~~

Conventional, alternative and community systems can pose serious water quality problems if improperly designed, installed, and/or managed. Failures have occurred in the past and are usually attributed to the following:

- Systems are inadequately or improperly sited, designed, or constructed.
- Long term use is not considered.
- Inadequate operation and maintenance.

The following definitions are used throughout this section of the Water Quality Control Plan.

Alternative onsite system consists of additional (beyond conventional) treatment and/or disposal features engineered to overcome site constraints. A conventional onsite system that requires a pump to reach the leach area is not considered "alternative".

Application area refers to the trench bottom and side walls below the bottom of the leach pipe, minus the first foot on each side.

Control Actions are those things that must be done, required actions.

Conventional onsite system consists of a septic tank and leachfield or seepage pit.

Drainfield is used interchangeably with leachfield, leach area or disposal area.

Effective trench depth means depth below the bottom of the leach trench distribution piping.

Engineered systems are treatment and disposal systems that require special design features to overcome site limitations (topography, soil conditions, shallow groundwater or setback variances).

Existing onsite system is any onsite system approved and/or installed prior to adoption of these criteria on May 9, 2008.

Failed or failing onsite system is any system that displays symptoms of inadequate dispersion, treatment or assimilation of wastewater. Symptoms of failure may include, but are not limited to, surfacing effluent, lush growth above the leach area, sluggish house drains, impacts to surface or groundwater from the onsite discharge, and odors.

Fill is material deposited to raise the existing or excavated ground level.

Impervious material is defined as having a percolation rate slower than 120 minutes per inch or having a clay content (% passing 200 sieve) of 60 percent or greater.

Monitoring shall refer to any sort of quality or performance assessment, including visual inspections.

New onsite system is an onsite wastewater system placed on property that has not previously been developed, and includes expansion of an existing onsite system to accommodate an increase in wastewater generation, after adoption of these criteria (insert date). Repair or replacement of an existing onsite system does not constitute a new onsite system.

Onsite disposal area shall include the direct application area (trench, pit, bed) and surrounding 100' radius.

Reservoir - A pond, lake, tank, basin, or other space either natural or created in whole or in part by the building of engineering structures, which is used for storage, regulation, and control of water, recreation, power, flood control, or drinking.

Septage is material removed from a septic tank; usually the accumulated scum, sludge and liquid within the tank.

Sidewall is the side portion of the leach area below the bottom of the distribution piping, or total gravel depth in a seepage pit.

Watercourse - A natural or artificial channel for passage of water. ~~A running stream of water. A natural stream fed from permanent or natural sources, including rivers, creeks, runs, and rivulets.~~ There must be a stream, usually flowing in a particular direction (though it need not flow continuously) usually discharging into some stream or body of water.

~~VIII.D.1. CORRECTIVE ACTIONS FOR EXISTING SYSTEMS~~

~~Individual disposal systems can be regulated with relative ease when they are proposed for a particular site. For new systems, regulations generally provide for good design and construction practices. A more troublesome problem is presented by older septic tank systems where design and construction may have been less strictly controlled or where land development has intensified to an extent that percolation systems are too close together and there is no room left for replacement leaching areas. Where this situation develops to an extent that public health hazards and nuisance conditions develop, the most effective remedy is usually a sewer system. Where soil percolation rates are particularly fast, ground water degradation is possible, particularly increases in nitrate concentrations.~~

~~Sewer system planning should be emphasized in urbanizing areas served by septic tanks. A first step would be a monitoring system involving surface and ground waters to determine whether problems are developing. Where septic tank systems in urbanized areas are not scheduled for replacement by sewers and where public health hazards are not documented, septic tank maintenance procedures are encouraged to lessen the probability that a few major failures might force sewering of an area which otherwise could be retained on individual systems without compromising water quality. Often a few systems will fail in an area where more frequent septic tank pumping, corrections to plumbing or leach fields, or in-home water conservation measures could help prevent failure. Improvements of this kind should be enforced by a local septic tank maintenance district or local governing jurisdiction.~~

~~A septic tank subjected to greater hydraulic load can fail due to washout of solids into percolation areas and plugging of the infiltrative surface. In some cases, excess wash water could be diverted to separate percolation areas by in-home plumbing changes. Dishwashers, garbage grinders, and washing machines could be eliminated. Water saving toilets, faucets, and shower heads are available to encourage low water use. Water use costs may also be structured to encourage more frugal use of water.~~

VIII.D.1. LOCAL GOVERNING JURISDICTION ACTIONS

VIII.D.1.a. DISCLOSURE AND COMPLIANCE OF EXISTING ONSITE WASTEWATER SYSTEMS

It is incumbent upon local governing jurisdictions to ~~should~~ provide programs to ensure conformance with this Basin Plan and local regulations. Such programs shall include (but not be limited to) inspection ~~programs~~ procedures to:

- ~~should~~ Ensure site suitability tests are performed as necessary, and that tests are in accordance with standard procedures;
- ~~Inspections should also~~ Ensure proper system design, construction and installation; and
- Adequately inform homeowners regarding proper installation, operation and ongoing maintenance of their onsite wastewater systems.

~~Proper design and construction should be certified by the inspector. Concerned homeowners can be a tremendous asset in assuring proper construction. When a septic system permit is issued by the local agency, a handout specifying proper construction techniques should be made available to the general public. Systems must be inspected by the local agency before covering (backfilling).~~

Local agencies can use staff inspectors or individuals under contract with the local government. ~~Either way~~ A standard detailed checklist shall be completed by the inspector to certify compliance.

Assurance of site suitability ~~determinations should~~ shall specify: (1) whether ~~approval is for~~ the entire lot or ~~for~~ specific locations of the lot are suitable for wastewater disposal; (2) if further tests are necessary; and (3) if alternatives are necessary and/or available.

~~Where agency approval is necessary from various departments, final sign-offs should be on the same set of plans.~~

Homeowners should be aware of the nature and requirements of their onsite wastewater ~~disposal~~ system. Plans should be available in city or county offices showing placement of soil absorption systems. ~~Since this is only feasible for new construction,~~ Local agencies should require onsite wastewater system as-built plans as a condition of new construction final inspection. ~~Plans would be kept on file for future use of property owners.~~

Prospective property buyers should be informed of any enforcement action affecting parcels or houses they wish to buy. ~~For example, a parcel in a discharge prohibition area may be unbuildable for an indefinite period, or a developed parcel may be subject to significant user charges from a future sewer system.~~ Local agencies should have prohibition area terms entered into the county record for each affected parcel. When a prospective buyer conducts a title search, terms of the prohibition would appear in the preliminary title report.

All onsite wastewater system owners need to be aware of proper operation and maintenance procedures. Local governing jurisdictions shall mount a continuing public education program to provide homeowners with onsite wastewater system operation and maintenance guidelines. Basin Plan information should be available at local agency health and building departments.

Dual leaching capabilities provide an immediate remedy in the event of system failure. For that reason, dual leachfields are considered appropriate for all systems. Furthermore, should wastewater flows increase, this area can be used until the system is expanded. ~~But system expansion may not be possible if land is not set aside for this purpose. For these reasons, dedicated system expansion areas are also appropriate.~~ To protect this set-aside area from encroachment, the local agency ~~should~~ shall require restrictions on future use of the area as a condition of land division or building permit approval. For new subdivisions, Covenants, Conditions and Restrictions (CC&R's) might provide an appropriate mechanism for protecting a set aside area. Future buyers of affected property would be notified of property use restrictions by reading the CC&R's.

~~Local agencies should conduct an on-site system inspection program, particularly in areas where system failures are common or where systems with poor soils are approved. An agency inspector should periodically check each septic tank for pumping need and each system for proper operation. Homeowners should be alerted where evidence of system failure exists. Where nuisance or a potential public health hazard exists, a followup procedure should insure the situation is corrected. On-site systems should be constructed in a location that facilitates system inspection.~~

~~Another approach is periodically to mail homeowners a brochure reminding them how to maintain and inspect their on-site system. Homeowners should be notified that they should periodically check their septic tank for pumping need. Homeowners should also be notified of other problems indicative of system failure. Some examples include wet spots in drainfield area, lush grass growths, slowly draining wastewater, and sewage odors.~~

Many existing systems do not comply with current or proposed standards. Repairs to failing systems ~~should~~ shall be done under permit from the local agency. ~~To the extent practicable~~ The local agency ~~should~~ shall require failing systems to be brought into compliance with Basin Plan recommendations, control actions and prohibitions; or repair criteria consistent with locally implemented onsite management plan (approved by the Central Coast Water Board Executive Officer). ~~This could be a condition of granting a permit for repairs.~~

Land use changes on properties used for commerce, small institutions or industries should not be approved by the local agency until the existing onsite system meets criteria of this Basin Plan and local ordinances. ~~A land use permit or business license could be used to alert the local agency of land use changes.~~

Within the following sections, criteria are specified for RECOMMENDATIONS, CONTROL ACTIONS and PROHIBITIONS.

RECOMMENDATIONS

1. Inform property buyers of the existence, location, operation, and maintenance of onsite disposal systems. Prospective home or property buyers should also be informed of any enforcement action (e.g. Basin Plan prohibitions) through the County Record.

2. Conduct public education programs to provide property owners with operation and maintenance guidelines.

3. ~~It may be appropriate for~~ Onsite systems ~~to~~ should be maintained by local onsite maintenance districts.

4. Standard percolation test procedures should be adopted. ~~Approve permit applications after checking plans for erosion control measures. Inspect systems prior to covering to assure proper construction.~~

CONTROL ACTIONS

5. Wastewater Management Plans ~~should~~ shall be prepared and implemented for urbanizing and high density areas served by onsite wastewater systems. Areas that should be addressed immediately include (but are not limited to): portions of San Martin, San Lorenzo Valley, Carmel Valley, Carmel Highland, Prunedale, El Toro, Shandon, Templeton, Santa Margarita, Garden Farms, Los Osos/Baywood Park, Arroyo Grande, Nipomo, upper Santa Ynez Valley, and Los Olivos/Ballard.

6. Local jurisdictions ~~should~~ shall require replacements or repairs to failing systems to be in substantial conformance (to the greatest extent practicable) with Basin Plan recommendations, control actions and prohibitions.

7. Alternative onsite system owners shall be provided an informational maintenance or replacement document by the appropriate governing jurisdiction. This document shall cite homeowner procedures to ensure maintenance, repair, or replacement of critical items within 48 hours following failure.

8. Local ordinances shall be updated to reflect Basin Plan criteria.

PROHIBITIONS

9. Alternative systems are prohibited unless consistent with a locally implemented onsite wastewater management plan approved by the Central Coast Water Board Executive Officer.

VIII.D.2 1.b. ONSITE WASTEWATER MANAGEMENT PLANS

Onsite wastewater management ~~should~~ shall be implemented in urbanizing areas to investigate and mitigate long-term cumulative impacts resulting from continued use of individual, alternative, and community onsite wastewater systems. ~~A wastewater disposal study should be conducted to determine the best Wastewater Management Plan that would provide site or basin specific wastewater re-use. This study should identify basin specific criteria to prevent water quality degradation and public health hazards and provide an evaluation of the effects of existing and proposed developments and changes in land use.~~ These plans should be a comprehensive planning tool to specify on-site disposal system limitations to prevent ground or surface water degradation. Onsite wastewater management plans ~~should~~ shall include (but not be limited to):

- Survey and evaluation of existing onsite systems.
- ~~Contain a~~ Water quality (ground and surface water) monitoring program.
- ~~Identify sites suitable for conventional septic systems.~~
- Projections of onsite disposal system demand and determination of ~~sites and~~ methods to best meet demand.
- ~~Project maximum population densities for each subdrainage basin to control degradation or contamination of ground or surface water.~~
- ~~Recommend establishment of septic tank maintenance districts, as needed.~~
- Recommendations and requirements for existing onsite wastewater system inspection,

monitoring, maintenance and repairs.

- Recommendations and requirements for new onsite wastewater systems.
- ~~Identify~~ Alternative means of disposing of sewage in the event of disposal system failure and/or irreversible degradation from onsite disposal ~~systems~~.
- Education and outreach program.
- Enforcement options.
- Septage management.
- Onsite wastewater management program administration, staffing and financing.

~~For areas where watershed-wide plans are not developed, conditions could be placed on new divisions of land or community systems to provide monitoring data or geologic information to contribute to the development of a Wastewater Management Plan.~~

~~Wastewater disposal alternatives should identify costs to each homeowner. A cost-effectiveness analysis, which considers socio-economic impacts of alternative plans, should be used to select the recommended plan.~~

Onsite wastewater disposal zones, as discussed in Section 6950-6981 of the Health and Safety Code, may be an appropriate means of implementing onsite wastewater management plans.

Onsite wastewater management plans shall be approved by the Central Coast Water Board Executive Officer.

VIII.D.2 1.c. ~~SEPTIC TANK~~ ONSITE WASTEWATER SYSTEM MAINTENANCE DISTRICTS

It may be appropriate for community onsite systems to be maintained by local ~~sewage disposal~~ onsite wastewater system maintenance districts. These special districts could be administered through existing local governments such as County Water Districts, Community Services Districts, or County Service Areas

~~Septic tank~~ Onsite wastewater system maintenance districts are responsible for onsite system operation and maintenance in conformance with this Water Quality Control Plan. Administrators should ensure proper construction, installation, operation, and maintenance of onsite wastewater systems. Maintenance districts should establish ~~septic tank~~ onsite system surveillance, maintenance and pumping programs, ~~where appropriate;~~ provide repairs to plumbing or leachfields, and encourage water conservation measures.

VIII.D.2. CRITERIA FOR NEW SYSTEMS

Onsite wastewater system problems can be minimized with proper site location, design, installation, operation and maintenance. The following section ~~recommends~~ includes criteria for all new ~~individual subsurface~~ onsite wastewater disposal systems ~~and community sewage disposal systems~~. Local governing jurisdictions should incorporate these criteria and guidelines into their local ordinances. These ~~recommendations~~ criteria will be used by the Central Coast Water Board for Water Board regulated systems and exemptions. In the context of these criteria, new systems shall refer to land subdivisions served by onsite wastewater systems or onsite wastewater systems approved after May 9, 2008.

Local agencies may authorize alternative onsite systems consistent with locally implemented onsite wastewater management plans approved by the Central Coast Water Board Executive Offer.

For any onsite system, limited disposal options are available for septage (solids periodically removed from septic tanks). As a component of a wastewater management plan, long-term septage disposal plans shall be considered and developed by local onsite system management districts.

Onsite wastewater system criteria are arranged in sequence under the following categories: site suitability, system design, construction, ~~individual system~~ maintenance, community system design,

and local agencies. ~~Mandatory criteria are listed in the "Individual, Alternative, and Community Systems Prohibitions" section.~~ Within each category, criteria are specified for RECOMMENDATIONS, CONTROL ACTIONS and PROHIBITIONS.

VIII.D.2.a. SITE SUITABILITY

~~Prior to permit approval, site investigation should determine on-site suitability:~~

RECOMMENDATIONS

1. For new land divisions, onsite disposal systems and expansion areas should be protected from encroachment by provisions in covenants, conditions, and restrictions or similar mechanisms.

2. Percolation test holes (at least ~~one~~ three per system) should be drilled with a hand auger. A hole could be hand augered or dug with hand tools at the bottom of a larger excavation made by a backhoe.

3. Natural ground slope of the disposal area should not exceed 20 percent.

CONTROL ACTIONS

4. At least one soil boring or excavation per onsite system shall be performed to determine soil suitability, depth to ground water, and depth to bedrock or impervious layer. Soil borings are particularly important for seepage pits. The soil boring or excavation should extend at least 10 feet below the drain field bottom at each proposed location.

5. An excavation ~~should~~ shall be made to detect mottling or presence of underground channels, fissures, or cracks. Soils should be excavated to a depth of 4-5 feet below drain field bottom.

6. For leachfields, at least three percolation test locations ~~should~~ shall be used to determine system acceptability.

7. Percolation tests shall be continued until a stabilized rate is obtained.

8. Percolation tests ~~should~~ shall be performed at a ~~proposed subsurface disposal system sites and~~ depth corresponding to the bottom of the subsurface disposal area.

9. If no restrictive layers intersect, and geologic conditions permit surfacing, the setback distance from a cut, embankment or steep slope (greater than 30 percent) should be determined by projecting a line 20 percent down gradient from the sidewall at the highest perforation of the discharge pipe. The leachfields ~~should~~ shall be set back far enough to prevent this projected line from intersecting the cut within 100 feet, measured horizontally, from the sidewall. If restrictive layers intersect cuts, embankments or steep slopes, and geologic conditions permit surfacing, the setback shall be at least 100 feet measured from the top of the cut.

10. Prior to permit approval, site investigation shall determine onsite system suitability (consistency with recommendations, control actions and prohibitions specified in this section). ~~Seepage pits should be utilized only after careful consideration of site suitability. Soil borings or excavations should be inspected either by permitting agency or individual under contract to the permitting agency~~

11. Distances between trench bottom and usable ground water, including perched ground water, shall not be less than the separation specified by appropriate percolation rate:

Percolation Rate (minutes/inch)	Distance (feet)
~~<1~~	~~50[1]~~
1-4	20[1]
5-29	8
>30	5

[1]~~Unless a set-back distance of at least 250 feet to any domestic well or subsurface water is assured~~.

Onsite disposal in soils with percolation rates faster than one minute per inch are prohibited without additional treatment.

12. ~~Natural ground slope of the disposal area should not exceed 20 percent~~. Onsite disposal systems on slopes greater than 20% shall be designed by a registered engineer.

PROHIBITIONS

13. For new land divisions (including lot splits and lot line adjustments) served by onsite systems, lot sizes less than one acre ~~should not be permitted~~ are prohibited unless authorized under an onsite management plan approved by the Central Coast Water Board Executive Officer.

14. Onsite wastewater disposal shall not be located in areas subject to inundation from a ~~10~~ 25-year flood.

15. Onsite disposal systems shall not be installed where natural ground slope of the disposal area exceeds 30 percent.

16. Leachfields are prohibited in soils where percolation rates are slower than 120 min/in unless parcel size shall is at least two acres. Disposal systems designed to accommodate slow percolation rates (leachbeds, evapotranspiration systems, etc.) shall be evaluated as alternative systems.

17. Onsite discharge is prohibited on any site unable to maintain subsurface disposal.

18. Onsite discharge is prohibited where lot sizes, dwelling densities or site conditions cause detrimental impacts to water quality.

19. Onsite discharge is prohibited within a water supply reservoir watershed where parcel size is less than 2.5 acres, unless consistent with an onsite wastewater management plan approved by the Central Coast Water Board Executive Officer.

20. Onsite discharge is prohibited in any area where continued use of onsite systems constitutes a public health hazard, an existing or threatened condition of water pollution, or nuisance.

21. Onsite discharge is prohibited were soils or formations with channels, cracks or fractures allow inadequately treated waste to surface or degrade water quality.

22. Seepage pits are prohibited in soils or formations containing 60 percent or greater clay (a soil particle less than two microns in size) unless parcel size is at least two acres.

23. For seepage pits, distances between pit bottom and usable groundwater, including perched groundwater, shall not be less than separation specified by appropriate soil type:

Soil Type	Distance (feet)
Gravels[2]	50[1]
Gravels with few fines[3]	20[1]
Other	10

[1] Unless a setback distance of at least 250 feet to any domestic water supply well or surface water is ensured.
[2] Gravels - Soils with over 95 percent by weight coarser than a No. 200 sieve and over half of the coarse fraction larger than a No. 4 sieve.
[3] Gravels with few fines - Soils with 90 percent to 94 percent coarse fraction larger than a No. 4 sieve.

24. Onsite discharge in soils with percolation rates faster than one minute per inch is prohibited without additional treatment consistent with an onsite management plan implemented by the local jurisdiction and approved by the Central Coast Water Board Executive Officer.

25. Onsite discharge is prohibited in fill unless specifically designed as a disposal area.

VIII.D.2.b. ONSITE SYSTEM DESIGN

RECOMMENDATIONS

1. Dual disposal fields (200 percent of original calculated disposal area) ~~are recommended~~ should be installed.

2. For commercial and institutional systems, pretreatment may be necessary if wastewater is significantly different from domestic wastewater.

3. Distance between drainfield trenches should be at least two times the effective trench depth. Distance between seepage pits (nearest sidewall to sidewall) should be at least 20 feet.

4. Application area should be calculated using trench bottom and sidewalls minus the first foot below the distribution pipe. ~~In clayey soils, systems should be constructed to place infiltrative surfaces in more permeable horizons.~~

CONTROL ACTIONS

5. Septic tanks shall be water-tight, and designed to remove ~~nearly 100 percent of~~ settleable solids and should provide a high degree of anaerobic decomposition of colloidal and soluble organic solids.

6. The minimum design flow rate ~~should~~ shall be 375 gallons per day for a 3-bedroom house, and 75 gpd should be added for each additional bedroom.

7. Drainfield design ~~should~~ shall be based only upon usable permeable soil layers.

8. Leachfield loading application rate ~~should~~ shall not exceed the following:

Percolation Rate (minutes/inch)	Loading Rate (gpd/sq.ft.)
1 - 20	0.8
21 - 30	0.6
31 - 60	0.25
61 - 120	0.10

9. If curtain drains divert groundwater to subsurface soils, the upslope separation from a leachfield or pit ~~should~~ shall be at least 20 feet and the down slope separation should be at least 50 feet.

10. Onsite system ~~tank~~ design ~~must~~ shall allow access for inspection and cleaning. Septic tanks must be accessible for pumping.

11. Seepage pit application rate ~~should~~ shall not exceed 0.3 gpd/sq. ft.

12. For commercial, institutional, industrial and community systems, design ~~should~~ shall be based on daily peak flow.

13. Dual disposal systems shall be installed (200 percent of total of original calculated disposal area) for community systems.

14. ~~Dueal disposal fields (200 percent of original caluculated disposal area) are recommended. Commercial systems, institutional systems, or domestic industrial systems should~~ All onsite disposal systems shall reserve an expansion area to be set aside and protected from all uses except future drainfield repair and replacement (community systems shall install dual drainfields and reserve replacement area).

15. Community systems shall provide duplicate individual equipment components for components subject to failure.

16. Distances between trench/pit bottom and bedrock or other impervious layer shall be at least ten feet.

17. Setback distances from disposal area shall be at least:

	Minimum Setback Distance (feet)
Domestic water supply wells in unconfined aquifer	100
Watercourse (where geologic conditions permit water migration)	100
Reservoir spillway elevation	200
Springs, natural or any part of a man-made spring	100

18. Community systems shall be designed with adequate capacity to accommodate the build-out population.

19. Community wastewater treatment and disposal facilities shall be operated by a public agency. If a demonstration is made to the Central Coast Water Board that an existing public agency is unavailable and formation of a new public agency is unreasonable, a private entity with adequate financial, legal, and institutional resources to assume responsibility for waste discharges may be acceptable.

PROHIBITIONS

20. Onsite discharge to leachfields is prohibited where soil percolation rates are slower than 60 minutes per inch unless the system is designed for an effluent application rate is 0.1 gallon per day per square foot of application area, or less.

21. Discharge ~~should~~ shall not exceed 40 grams per day of total nitrogen, on the average, per acre of onsite system service area overlying groundwater recharge areas, except where a local governing jurisdiction has adopted a

Wastewater Management Plan ~~subsequently~~ approved by the Central Coast Water Board Executive Officer.

22. Community system seepage pits are prohibited unless additional treatment is provided consistent with an onsite management plan implemented by the local jurisdiction and approved by the Central Coast Water Board Executive Officer. Such seepage pits shall have at least 15 vertical feet between pit bottom and highest usable groundwater, including perched groundwater.

23. Inflow and infiltration shall be precluded from the system unless design specifically accommodates such excess flows.

24. Onsite wastewater systems are prohibited in any subdivision unless the subdivider clearly demonstrates the installation, operation and maintenance of the onsite system will be in compliance with all Basin Plan criteria.

25. Curtain drains that discharge to groundsurface or surface water are prohibited within 50 feet downgradient of onsite system disposal areas.

VIII.D.2.c. DESIGN FOR ALTERNATIVE AND ENGINEERED SYSTEMS

RECOMMENDATIONS

1. Mound systems, evapotranspiration systems, and other alternative onsite systems should be designed and installed in accordance with guidelines available from the State Water Resources Control Board. ~~For evapotranspiration systems, each month of the highest precipitation year and lowest evaporation year within the previous ten years of record should be used for design.~~

CONTROL ACTIONS

2. Alternative onsite wastewater systems shall be designed by a registered ~~civil~~ engineer competent in sanitary engineering.

3. Alternative and engineered onsite wastewater systems shall be located, designed, installed, operated, maintained, and monitored in accordance with a locally implemented onsite management plan approved by the Central Coast Water Board Executive Officer.

PROHIBITIONS

4. Alternative and engineered onsite wastewater systems are prohibited, except where consistent with a locally implemented onsite management plan approved by the Central Coast Water Board Executive Officer.

VIII.D.2.d. CONSTRUCTION

RECOMMENDATIONS

1. Construction activities should follow recommendations and precautions described in the Environmental Protection Agency's Design Manual: Onsite Wastewater Treatment and Disposal Systems.

2. Subsurface disposal systems should have a slightly sloped finished grade to promote surface runoff.

3. Work should be scheduled only when infiltrative surfaces can be covered in one day to minimize windblown silt or rain clogging the soil.

4. In clayey soils, work should be done only when soil moisture content is low to avoid smeared infiltrative surfaces.

5. Bottom and sidewall areas should be left with a rough surface. Any smeared or compacted surfaces should be removed.

6. Bottom of trench or bed leach piping should be level throughout to prevent localized overloading.

7. Two inches of coarse sand should be placed on the bottom of trenches to prevent compacting soil when leachrock is dumped into drainfields. Fine sand should not be used as it may lead to system failure.

8. Surface runoff should be diverted around open trenches/pits to limit siltation of trench bottom area.

9. Prior to backfilling, the distribution system should be tested to check the hydraulic loading pattern.

10. Properly constructed distribution boxes or junction fittings should be installed to maintain equal flow to each trench. Distribution boxes should be placed with extreme care outside the leaching area to ensure settling does not occur.

11. Risers to the ground surface and manholes should be installed over the septic tank inspection ports, access ports and distribution boxes.

12. Drainfields should include inspection pipes to check water level.

13. Nutrient and heavy metal removal should be facilitated by planting ground cover vegetation over shallow subsurface drainfields. The plants must have the following characteristics: (1) evergreen, (2) shallow root systems, (3) numerous leaves, (4) salt resistant, (5) ability to grow in soggy soils, and (6) low or no maintenance. Plants downstream of leaching area may also be effective in nutrient removal.

CONTROL ACTIONS

14. Disposal systems ~~should~~ shall be inspected by the permitting agency prior to covering to ensure proper construction.

VIII.D.2.e. ONSITE SYSTEM MAINTENANCE

RECOMMENDATIONS

1. Septic tanks should be inspected every two to five years to determine the need for pumping.

2. Drainfields should be alternated when drainfield inspection pipes reveal a high water level or every six months, whichever is sooner.

CONTROL ACTIONS

3. Onsite wastewater systems shall be maintained in accordance with approved onsite management plans. Where onsite management plans have not been approved by the Central Coast Water Board Executive Officer, onsite systems shall be maintained as described in the following specifications.

4. Septic tanks shall be pumped whenever: (1) the scum layer is within three inches of the outlet device, (2) the sludge level is within eight inches of the bottom of the outlet device, or (3) every 5 years; whichever is sooner.

5. Disposal of septage (solid residue pumped from septic tanks) shall be accomplished in a manner acceptable to the Central Coast Water Board Executive Officer.

6. Records of maintenance, pumping, septage disposal, etc. shall be maintained by the facility owner and available upon request.

VIII.D.2.f. USE CONSIDERATIONS

RECOMMENDATIONS

1. Water conservation and solids reduction practices should be implemented by all onsite system users. Garbage grinders should not be used in homes with septic tanks. Where grinders are used, septic tank capacity and inspection/pumping frequency shall be increased.

2. Metering and water use costs should be used to encourage water conservation in areas served by onsite systems.

3. Grease and oil should not be discharged into the system. Bleach, solvents, fungicides, and any other toxic material should not be discharged into the system.

4. Self-regenerating water softeners should not be used where discharge is to onsite systems. If water softening is necessary, use of canister-type softeners will protect the treatment and disposal systems and underlying groundwater from unnecessary accumulation of salts.

PROHIBITIONS

5. Self-regenerating water softener brine is prohibited unless consistent with a salts minimization plan approved by the Water Board Executive Officer and implemented by the local jurisdiction.

VIII.D.2.g. ONSITE WASTEWATER SYSTEM PROHIBITION AREAS

In order to achieve water quality objectives, protect present and future beneficial water uses, protect

public health, and prevent nuisance, discharges are prohibited in the following areas:

1. Discharges from individual sewage disposal systems are prohibited in portions of the community of Nipomo, San Luis Obispo County, which are particularly described in Appendix A-27.

2. Discharges from individual sewage disposal systems within the San Lorenzo River Watershed shall be managed as follows: Discharges shall be allowed providing the County of Santa Cruz, as lead agency, implements the "Wastewater Management Plan for the San Lorenzo River Watershed, County of Santa Cruz, Health Services Agency, Environmental Health Service:, February 1995 and "San Lorenzo Nitrate Management Plan, Phase II Final Report", February 1995, County of Santa Cruz, Health Services Agency, Environmental Health Service (Wastewater Management Plan) and assures the Central Coast Water Board that areas of the San Lorenzo River Watershed are serviced by wastewater disposal systems to protect and enhance water quality, to protect and restore beneficial uses of water, and to abate and prevent nuisance, pollution, and contamination.

3. Discharges from individual and community sewage disposal systems are prohibited, effective November 1, 1988, in the Los Osos/Baywood Park area depicted in the Prohibition Boundary Map included as Attachment A of Resolution No. 83-13, which can be found in Appendix A-30.

VIII.D.2.h. SUBSURFACE DISPOSAL EXEMPTIONS

The Central Coast Water Board or Executive Officer may grant exemption to prohibitions for: (1) engineered new onsite ~~disposal~~ wastewater systems for sites unsuitable for standard systems; and (2) new or existing onsite systems within the specific prohibition areas cited above. Such exemptions may be granted only after presentation by the discharger of sufficient justification, including geologic and hydrologic evidence that the continued operation of such system(s) in a particular area will not individually or collectively, directly or indirectly, result in pollution or nuisance, or affect water quality adversely.

Individual, alternative, and community systems shall not be approved for any area where it appears that the total discharge of leachate to the geological system, under fully developed conditions, will cause: (1) damage to public or private property; (2) ground or surface water degradation; (3) nuisance condition; or, (4) a public health hazard. Interim use of septic tank systems may be permitted where alternate parcels are held in reserve until sewer systems are available.

Requests for exemptions will not be considered until the local entity has reviewed the system and submitted the proposal for Central Coast Water Board review. Dischargers requesting exemptions must submit a Report of Waste Discharge. Exemptions will be subject to filing fees as established by the State Water Code.

Discharges from onsite wastewater systems regulated by waste discharge requirements or waiver of such requirements may be exempt from the requirements of this chapter. The waste discharge requirements order or waiver will act in lieu of exemption, and separate exemption is not required.

Further information concerning individual, alternative, or community onsite sewage disposal systems can be found in Chapter 5 in the Management Principals and Control Actions sections. State Water Resources Control Board Plans and Policies, Discharge Prohibitions, and Central Coast Water Board Policies may also apply depending on individual circumstances.

CHAPTER 5. PLANS AND POLICIES

III. REGIONAL WATER QUALITY CONTROL BOARD MANAGEMENT PRINCIPLES

III.F. INDIVIDUAL, ALTERNATIVE AND COMMUNITY ONSITE DISPOSAL SYSTEMS

The Regional Board intends to discourage high-density development on septic tank disposal systems and generally will require increased size of parcels with increasing slopes and slower percolation rates. Consideration of development will be based upon the percolation rates and engineering reports supplied. In any questionable situation, engineer-designed systems will be required.

Further information concerning onsite disposal systems can be found in Chapter Four.

V.D. INDIVIDUAL, ALTERNATIVE AND COMMUNITY ~~SEWAGE~~ ONSITE DISPOSAL SYSTEMS

Unsewered areas having high density (one acre lots or smaller) should be organized into septic tank management districts and sewerage feasibility studies should be ~~encouraged~~ completed in potential problem areas. Local implementation should be encouraged by Regional Board action.

V.H.3. SEPTIC TANK MANAGEMENT AGENCIES

1. County governments should revise septic tank ordinances to ~~conform~~ be consistent with Basin Plan recommendations and requirements, and State Board guidelines.

2. Formation of septic tank management districts within existing local agencies should be accomplished in areas where directed by Regional Board action.

VI. REGIONAL BOARD POLICIES

Formal specific policies adopted by the Regional Board are presented below according to various categories.

VI.A. SEWERAGE FACILITIES AND SEPTIC TANKS IN URBANIZING AREAS IN THE CENTRAL COAST REGION

Resolution 69-01: Adopting Policy Statement Regarding Sewerage Facilities and Septic Tanks in Urbanizing Areas in the Central Coast Region. ~~This policy prohibits septic tank or community systems unless particular criteria are satisfied.~~ Resolution 69-01 states Regional Board policy to support local jurisdictions in their efforts to prohibit subdivisions using onsite wastewater disposal, unless water quality protection is demonstrated by the implementation of specified onsite system criteria. The Resolution also states Regional Board intention to take enforcement actions, if local jurisdictions fail

CALIFORNIA DEPARTMENT OF FISH AND GAME

CERTIFICATE OF FEE EXEMPTION

De Minimis Impact Finding

Project Title/Location Name and Address of Project Proponent:

AMENDMENT OF "WATER QUALITY CONTROL PLAN - CENTRAL COASTAL BASIN" REGARDING REVISED ONSITE WASTEWATER SYSTEM CRITERIA

Central Coast Regional Water Quality Control Board
895 Aerovista Place, Suite 101
San Luis Obispo, California 93401
San Luis Obispo County
Contact: Sorrel Marks (805/549-3695 or smarks@waterboards.ca.gov)

Project Description: The California Regional Water Quality Control Board, Central Coast Region (Central Coast Water Board), will hold a public hearing to receive comments and consider adoption of a resolution amending the Water Quality Control Plan, Central Coast Basin (Basin Plan). The proposed amendment to the Basin Plan includes revisions to onsite wastewater system criteria specified in Chapters 4 and 5 of the Basin Plan.

Findings of Exemption: Please see the attached Environmental Checklist for description and findings.

Certification: I hereby certify that the California Regional Water Quality Control Board, Central Coast Region, has made the above findings of fact and that based upon the Environmental Checklist, written report, and record of hearing finds that the project will not individually or cumulatively have an adverse effect on wildlife resources, as defined in Section 711.2 of the Fish and Game Code.

_____
Roger Briggs, Executive Officer
Regional Water Quality Control Board

_____
Date

CALIFORNIA ENVIRONMENTAL QUALITY ACT "FUNCTIONAL EQUIVALENT" REPORT FOR BASIN PLAN AMENDMENT

(RESOLUTION NO. R3-2008-0005)

The Central Coast Regional Water Quality Control Board (Central Coast Water Board) is proposing an amendment to the *Water Quality Control Plan, Central Coast Basin* (Basin Plan). The Basin Plan serves as the cornerstone for water quality protection through identification of beneficial uses of surface and ground waters, establishment of water quality objectives to protect beneficial uses, and establishment of an implementation plan to achieve those objectives.

The Basin Planning process has been certified as "functionally equivalent" to the preparation of the Environmental Impact report (EIR) for the purposes of complying with the California Environmental Quality Act (CEQA) [Section 15251, Title 4, California Code of Regulation (CCR)]. Based on the certification, this Basin Plan Amendment Report is used in lieu of an EIR or a Negative Declaration. Any Regional Board regulatory program certified as functionally equivalent, however, must satisfy the documentation requirements of Section 377 (a), Title 23, CCR. This report satisfies part (a) of that section. It contains the following:

1. A description of proposed activity and proposed alternatives,
2. An environmental checklist and a description of the proposed activity,
3. An environmental evaluation, and
4. A determination with respect to significant environmental impacts.

The environmental analysis contained in this Report for Basin Plan Amendment and accompanying documents, including the Environmental Checklist, the staff report and the responses to comments complies with the requirements of the State Water Board's certified regulatory process, as set forth in CCR, Title 23, section 3775 et seq. All public comments were considered.

I. DESCRIPTION OF PROPOSED ACTIVITY

The purpose of this amendment is to update and revise the Basin Plan sections pertaining to onsite wastewater system requirements. This section describes the changes proposed and alternatives to this proposal.

Chapters IV and V of the Water Quality Control Plan, Central Coast Basin (Basin Plan) specify criteria for siting, design and ongoing management of individual and community onsite wastewater disposal systems (commonly called septic systems). The Basin Plan criteria also recommend a variety of management measures intended to ensure long-term success of properly functioning systems and prevent water quality impacts from such systems. The existing Basin Plan criteria for onsite wastewater systems were last updated in 1983. During the past 25 years, implementation of those criteria has demonstrated revisions are needed to clarify vague language and, in some cases, strengthen language from recommendations to requirements. The proposed project

(adoption of Resolution No. R3-2008-0005) will update and revise existing Basin Plan criteria for onsite wastewater systems. Most of the proposed revisions provide clarifying language to existing requirements without substantially changing such requirements. However, some revisions replace discretionary language of recommendations (should) with mandatory language of requirements (shall). By adopting the proposed resolution, language in the Basin Plan will be strengthened and clarified in a manner expected to result in improved long-term water quality protection in areas served by onsite wastewater systems. The proposed revisions are also expected to improve consistency and customer service by reducing the need for subjective interpretation of imprecise language. Updating the Basin Plan criteria for onsite wastewater systems will complete a Triennial Review list priority task, which has been backlogged for more than a decade.

Alternatives to this Project

1. Incomplete adoption of the proposed amendment

The Central Coast Water Board could amend only a portion of the existing Basin Plan criteria for onsite wastewater systems. The Basin Plan criteria could be amended with some of the proposed revisions or amended with different revisions. This alternative is not recommended as it would result in addressing only some of the needed clarifications or strengthening of the existing Basin Plan language and would not achieve the goals of effective long-term water quality protection in a clear and efficient manner. Adoption of different criteria can only be addressed relative to specified alternate criteria, such discussion is included in the response to comments included in the staff report. This alternative is not recommended.

2. Take no action

The proposed revisions to the Basin Plan criteria for onsite wastewater systems are needed to clarify vague and imprecise requirements and to strengthen requirements needed to protect water quality. Updating the onsite criteria has been prioritized on the Central Coast Water Board's Triennial Review List for many years. Failing to take action would result in ongoing confusion regarding requirements, utilization of staff time to individually clarify and interpret requirements, and inadequate long-term water quality protection in areas served by onsite wastewater systems. This alternative is not recommended.

II. APPLICABLE INFORMATON

1. Lead Agency Name and Address

Central Coast Water Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401-7906

2. Contact Person and Phone Number: Sorrel Marks (805) 549-3595

3. Project Location: Central Coast Region

4. Project Sponsor's Name and Address

Central Coast Water Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401-7906

5. Other Public Agencies whose Approval is Required

State Water Resources Control Board and U.S. Environmental Protection Agency approval is required for Basin Plan amendments. Although formal approval by local jurisdictions is not required for Basin Plan amendments, cooperative implementation by local permitting authorities (cities, counties, community services districts) is necessary to effectively protect water quality. Local jurisdictions likely to be affected by the proposed project include: Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Clara, Santa Cruz, and Ventura Counties, and the cities and special districts therein.

ENVIRONMENTAL CHECKLIST

III. EVALUATION OF ENVIRONMENTAL IMPACTS

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
1. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, But not limited to, trees, rock outcroppings, and historic buildings with a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area	☐	☐	☐	☒
2. AGRICULTURE RESOURCES -- Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

3.	**AIR QUALITY -- Would the project:**				
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b)	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is not attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e)	Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
4.	**BIOLOGICAL RESOURCES -- Would the project:**				
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
5.	**CULTURAL RESOURCES -- Would the project:**				
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
6. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
7. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
8. HYDROLOGY AND WATER QUALITY --Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒

j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
9. LAND USE AND PLANNING -- Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
10. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally -important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
11. NOISE -- Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
12. POPULATION AND HOUSING -- Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
13. PUBLIC SERVICES --Would the project result in:				
a) Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
b) Fire protection?	☐	☐	☐	☒
c) Police protection?	☐	☐	☐	☒
d) Schools?	☐	☐	☐	☒
e) Parks?	☐	☐	☐	☒
f) Other public facilities?	☐	☐	☐	☒
14. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
15. TRANSPORTATION/TRAFFIC -- Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☐	☒
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

16. UTILITIES AND SERVICE SYSTEMS --Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
17. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

IV. ENVIRONMENTAL EVALUATION (of checklist questions answered Potentially Significant Impact, Less than Significant with Mitigation Incorporation, or Less than Significant Impact): Not applicable.

V. DETERMINATION (To be completed by the Lead Agency) On the basis of this initial evaluation:

__X__ I find the proposed project COULD NOT have a significant effect on the environment.

____I find that the proposed project may have a significant adverse impact on the environment. However, there are feasible alternatives and/or feasible mitigation measures available which would substantially lessen any significant adverse impact. These alternatives and mitigation measures are discussed in the attached written report.

____ I find that the proposed project MAY have a significant effect on the environment. There are no feasible alternatives and/or feasible mitigation measures available which would substantially lessen any significant adverse impacts. See the attached written report for a discussion of this determination.

Signature	Date
Printed name	Title