Coastal San Luis Resource Conservation District

545 Main Street, Suite B-1, Morro Bay, CA 93442 805-772-4391

January 29, 2009

Mr. Mark Hutchinson
Environmental Programs Manager
Department of Public Works, San Luis Obispo County
1050 Monterey Street, Room 207
San Luis Obispo, CA 93408

RE: Los Osos Wastewater Project (LOWWP) Draft Environment Impact Report

Dear Mr. Hutchinson:

The proposed Los Osos Wastewater Project is located within the boundaries of the Coastal San Luis Resource Conservation District (RCD), whose mission includes the conservation of water and soil resources, and the preservation of prime agricultural lands. The LOWWP draft EIR identifies environmental impacts to surface water and drainage; groundwater quality and water supply; and significant unavoidable impacts to agricultural resources.

The County and Staff are to be commended for the professional and open manner in which they have conducted the process of identifying and developing project alternatives. We appreciate the opportunity to comment on the draft EIR.

The RCD would have preferred that the wastewater treatment project be sited within or at least nearer to the Urban Reserve Line of Los Osos. However, we recognize that the County has made a good faith effort to provide the community with a project that is acceptable to them. The draft EIR has identified the proposed Project 4 as the environmentally superior alternative, and is the basis for our comments.

Water

The Los Osos groundwater basin is currently in overdraft and impacted by sea water intrusion. The draft EIR states that 35% of the effluent will be used to address sea water intrusion by disposal at the Broderson leachfield. The remaining effluent will be disposed of on the Tonini ranch sprayfields. Future use of the sprayfield effluent through return to the community and/or agricultural reuse was addressed.

To that end, the RCD strongly recommends that the effluent receive tertiary treatment, and not the secondary level as proposed. Tertiary treated effluent would improve the quality and perception of the product as well as its opportunity to be utilized for irrigation of agricultural fields, parks, playgrounds, street landscaping and common areas under the control of home owner associations and open space, and fire suppressant supply lines. As currently proposed (treatment to the secondary level), sprayfield effluent disposal alternatives are limited to options that do not reduce demand for potable water, nor address salt water intrusion concerns.

Loss of Agricultural Land and Mitigation

The proposed mitigation measure for the conversion of prime farmland to non-agricultural use would be the placement of farmland conservation easement on a minimum of 175 acres "within reasonable proximity to the project site." This easement acreage should be located within the Morro Bay drainage side of Los Osos Valley, preferably between the treatment plant facility and the Los Osos urban reserve line.

At the request of the RCD, the Natural Resources Conservation Service completed an analysis of the sprayfield soils and their effluent capacity, based on the information provided in the EIR Table 3-5. (See Attachment). The purpose of this analysis was to satisfy the RCD that the sprayfield application rates would not result in runoff. The analysis indicates the application rates stated in Table 3-5 are acceptable. The soils will be in a state of saturation, and runoff can become an issue during heavy rain storm events.

It is not apparent why the grass produced on the spray fields should be transported to a landfill for nutrient management. The effluent has the same nutrient content as that going to the Broderson leachfield to recharge groundwater. Agricultural use (page 7-64) suggests "…certain crops such as fodder and fiber crops, sod, and ornamentals, can be irrigated…" Alternatives such as composting on site or providing as green fodder for sale during March-November, a time period it would be in demand, should be pursued.

The farmland conversion impact analysis for Project 1 (page 5.11-7), states that, "For the Tonini parcel…the County would publicly acquire this entire parcel and maintain agricultural use under a long-term easement." It is important that the entire 650 acre Tonini Ranch be placed in a farmland easement for Projects 2, 3 and 4 as well, since the sprayfield is integral to all proposed projects. We request that this be clearly stated and included in the EIR, and that the 175 acre easement(s) mitigation measure will apply to land other than the Tonini Ranch.

Thank you again for the opportunity to comment. Please feel free to contact us should there be any further discussion or question.

Sincerely,

Neil Havlik

Neil Havlik, President
Board of Directors

Attachment: NRCS Comment on Soils and EIR of LOWWP, 3 pages

United States Department of Agriculture
NRCS Natural Resources Conservation Service

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January 29, 2009

Coastal San Luis Resource Conservation District

Subject: Comment on Soils and EIR of LOWWP

Soils of the Tonini Spray Fields are very limited for disposal of waste water by irrigation. While the entire field may be too steep for surface (flood) application of water, soil map units 120, 121 and 128 are not too steep for application by sprinkler. These three soil map units comprise 66% of the proposed fields. Application rates may need to be low because of slow and very slow permeability, and high runoff potential.

Please see the attached soil map and table for details on:

1. Proportion of each soil map unit
2. Soil permeability rates & classes
3. Total available water holding capacity
4. Runoff potential
5. Leaching potential
6. Ratings and reasons for limitations for disposal of waste water by irrigation.

Application Rate of Effluent and Potential for Runoff or Deep Percolation

I estimate that applying 3.0 acre-feet/acre/year in addition to average precipitation will meet the need of the crop. See Table entitled "Estimated Capacity of Soil to Receive Effluent at Tonini Spray Fields" for calculations. Additional irrigation will either run off the field or percolate below the root zone. Runoff may occur if the application of irrigation water exceeds the permeability of the soil. The Cropley soil has permeability of 0.06 to 0.2 inches/hour. The EIR seeks to prevent runoff from leaving the spray field by providing a tail-water recovery system at the bottom of the spray fields. Application rates may need to be proportionate to the precipitation and evapotranspiration as they change during the season. There is the least demand for irrigation in March and April, and the greatest demand in July. Excess irrigation applied at less than or equal to the permeability rate of the soil will percolate deeper than the root zone. Deep percolation is the downward movement of water at the bottom of the soil profile which represents a loss of water from the root zone. (Glossary, Soil Science Society of America) Applying 4.8 acre-feet/acre/year, as the EIR proposes, at or below the permeability rate of the soil may result in 1.8 acre-feet/acre/year of deep percolation. See Table entitled "Application of 4.8 acre-feet/acre/year of Effluent by Equal Portions each Month" for calculations. This may not affect the ground water because the ground water and the effluent have similar TDS, 602 and 620 mg/l respectively. There may be additions of nitrogen to the groundwater.

Salt Accumulation

Salt should not accumulate in the root zone under the management given in the EIR. These soils require a little excess irrigation (leaching requirement) to remove accumulation of salt from the root zone. The EIR says the effluent has 620 mg/l of TDS, which is approximately equivalent to an EC (electrical conductivity) of 0.9 dS/m. The EIR does not specify which grass will be grown on the Tonini spray fields, but perennial ryegrass would be appropriate. It is moderately tolerate of salinity

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according to the NRCS Veg Guide. Other plants with moderate tolerance of salinity, tolerate a soil EC of at least 4.0 dS/m without reduction in yield. Using these figures the leaching requirement is 6 % excess irrigation. (Hansen and Gratten, Agricultural Salinity and Drainage: A User's Handbook, University of California, Davis, February 1992, pp. 41-43) I estimate that application of 3.0 acre-feet/acre/year added to the average precipitation from March through November will meet the need of the crop. Six percent of this, or an additional 0.18 acre-feet/acre/year, would prevent the accumulation of salt in the root zone. Average precipitation from December through January of 13.4 inches will fill the 8.0 water holding capacity of the root zone with an excess of 5.4 inches. These 5.4 inches exceeds the leaching requirement. The rate given in the EIR of 4.8 acre-feet/acre/year surpasses the crop need and leaching requirement.

Capacity of Tonini Spray Fields to Receive Effluent

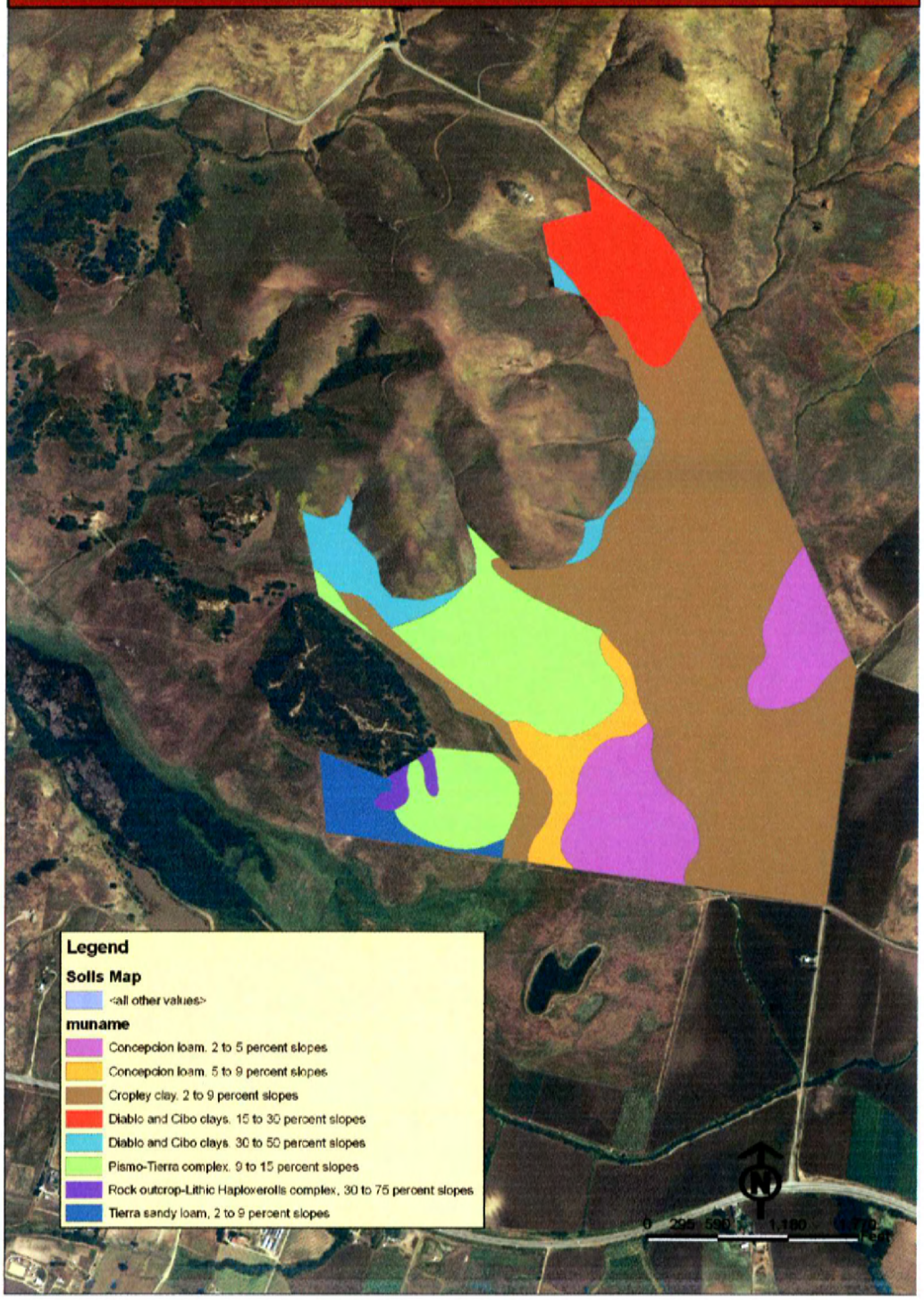
For application of effluent to only meet the need of the crop at a rate of 3.0 acre-feet/acre/year, the 180 acre field could receive 534 acre-feet of effluent. For application at the rate proposed in the EIR of 4.8 acre-feet/acre/year, the 180 acre field could receive 858 acre-feet of effluent.

Thanks for asking.

Ken Oster
Area Resource Soil Scientist

Soils Map
LOWWP - Tonini Spray Fields

USDA - Natural Resources Conservation Service
January 21, 2009



Soil Properties and Ratings for LOWWP - Tonini Spray Fields

Map Unit Symbol	Soil	Percent of Map Unit	Acres	% of Spray Fields	Permeability (saturated hydraulic conductivity) of Slowest Layer (1) inches/hour	Class	Total Available Water Holding Capacity (1) inches	Runoff Potential (2)	Leaching Potential (2)	Disposal of Waste Water by Irrigation (1) Rating	Reasons
120	Concepcion loam	85	38.6	12	0.0015 - 0.06	Very slow	7.6	High	Very low	Very limited	Slow water movement, too acid, Too steep for surface application
121	Conception loam	85	12.8	4	0.0015 - 0.06	Very slow	7.6	High	Very low	Very limited	Slow water movement, Too steep for surface application, Too acid, Too steep for sprinkler application
128	Cropley clay	85	154.1	50	0.06 - 0.2	Slow	8.0	High	Very low	Very limited	Slow water movement, Too steep for surface application
131	Diablo clay	45	24.9	8	0.06 - 0.2	Slow	9.8	High	Very low	Very limited	Low adsorption, Too steep for surface application, Too steep for sprinkler application, Slow water movement
131	Cibo clay	45			0.06 - 0.2	Slow	6.2	High	Very low	Very limited	Too steep for surface application, Too steep for sprinkler application, Slow water movement, Depth to bedrock
132	Diablo clay	45	14.4	5	0.06 - 0.2	Slow	9.8	High	Very low	Very limited	Low adsorption, Too steep for surface application, Too steep for sprinkler application, Slow water movement
132	Cibo clay	45			0.06 - 0.2	Slow	6.2	High	Very low	Very limited	Too steep for surface application, Too steep for sprinkler application, Slow water movement, Depth to bedrock
191	Pismo loamy sand	40	52.6	17	6 - 20	Rapid	1.3	High	Very low	Very limited	Droughty, Too steep for surface application, Depth to bedrock, Filtering capacity, Too steep for sprinkler application
191	Tierra sandy loam	30			0.0015 - 0.06	Very slow	5.2	High	Very low	Very limited	Slow water movement, Too steep for surface application, Too steep for sprinkler application, Too acid, Droughty
195	Rock outcrop	55	2.4	1		No data	No data	High	Very low	Not rated	
195	Lithic Haploxerolls	25				No data	No data	High	Very low	Not rated	
216	Tierra sandy loam	85	9.2	3	0.0015 - 0.06	Very slow	5.2	High	Very low	Very limited	Slow water movement, Too steep for surface application, Too acid, Droughty

(1) Soil Survey of San Luis Obispo County, California, Coastal Part, digital version 3, 12/14/2006

(2) NRCS, Windows Pesticide Screening Tool, ver. 3.1

Estimated Capacity of Soil to Receive Effluent at Tonini Spray Fields

Month	Water Stored in Soil at Start of Month (4)	Precipitation (2)	Application of Effluent to Fill Soil from 0 to 60 inches (3) (5)	ET_0 (1)
	(inches)			
March	8.0	3.1	0.3	3.41
April	8.0	1.9	2.9	4.80
May	8.0	0.4	5.2	5.58
June	8.0	0.2	6.1	6.30
July	8.0	0.0	6.5	6.51
August	8.0	0.0	6.2	6.20
September	8.0	0.1	4.7	4.80
October	8.0	0.7	3.0	3.72
November	8.0	1.7	0.7	2.40
Total (inches)		8.1	35.6	43.7
Total (acre-feet)			3.0	
Total acre-feet for 180 acres			534.3	
(1) CIMIS ET_0 Map				
(2) Long range average from Soil Survey of SLO County, Coastal Part				
(3) Applied at =< 0.06 to 0.2 inches/hour when saturated to avoid runoff				
(4) Capacity of Cropley soil (inches)	8.0			
(5) = Capacity of soil - (Stored in Soil + Precipitation - ET_0)				

Application of 4.8 acre-feet/acre/year of Effluent by Equal Portions each Month

Month	Water Stored in Soil at Start of Month (4)	Precipitation (2)	Application of Effluent (3)	ET_0 (1)	Deep Percolation by End of Month (5)
	(inches)				
March	8.0	3.1	6.36	3.41	6.1
April	8.0	1.9	6.36	4.80	3.5
May	8.0	0.4	6.36	5.58	1.2
June	8.0	0.2	6.36	6.30	0.3
July	8.0	0.0	6.36	6.51	0.0
August	7.6	0.0	6.36	6.20	0.0
September	7.8	0.1	6.36	4.80	1.5
October	8.0	0.7	6.36	3.72	3.3
November	8.0	1.7	6.36	2.40	5.7
Total (inches)		8.1	57.2	43.7	21.4
Total (acre-feet)			4.8		1.8
Total acre-feet for 180 acres			858.6		
(1) CIMIS ET_0 Map					
(2) Long range average from Soil Survey of SLO County, Coastal Part					
(3) Applied at =< 0.06 to 0.2 inches/hour when saturated to avoid runoff					
(4) Capacity of Cropley soil (inches)	8.0				
(5) = Stored at Start of Month + Precipitation + Effluent Applied - ET0 - Capacity of Soil					