

ATTACHMENT 1

Response to Comments Lake Shastina Community Services District, Response to Comments Wastewater Treatment Facility, WDID No. 1A790100SIS Order No. R1-2012-0029

Lake Shastina Community Services District (the District) provided the only comment letter regarding the February 9, 2012, draft Waste Discharger Requirements permit for the District's Wastewater Treatment Facility (Facility). The letter was received from the District in a March 9, 2012, letter signed by John McCarthy, General Manager.

Comment A. The District claims that Discharge Specification G, which states that "The discharge of waste shall not cause a pollution of groundwater," is redundant and should be deleted.

Response: Discharge Specification G is redundant with Discharge Prohibition C of the Draft Order as asserted by the District. Accordingly, the Groundwater Discharge Specification has been deleted from the draft permit in response to this comment.

Comment B. The District requests modifications of Groundwater Limitation 1.d to include the renumbered sections of Title 22 that are referenced in the Chemical Constituent Objective of the Basin Plan and to delete the phrase "or the Basin Plan" because it is unclear and redundant.

Response: The District is correct to identify the renumbered sections of Title 22 that are referenced in the Basin Plan. Accordingly, the draft Order has been amended to refer to the correct sections of Title 22. However, the phrase "or the Basin Plan" is intended to retain any future amendments of the Basin Plan groundwater quality objectives. To clarify this point, in responding to this comment, the draft Order has been amended as follows:

- d. Exceed constituent concentration limits specified in Cal. Code of Regs, title 22 sections 64431 and 64444, or any future revisions to the Basin Plan groundwater quality objectives.

Comment C. The District requests minor modifications to the implementation language and timing with regards to the Sludge Disposal Project.

Response: Staff concurs with the proposed changes to the implementation schedule, but discovered during response to this comment that the work plan requirement in the draft Order did not include a time frame for submittal. Staff has included a work plan submittal date of 180 days, which is consistent with the time frame for the increased treatment and containment plan in this Order. Staff has amended the draft Order accordingly, as follows:

- i. Work Plan – The Discharger shall submit a work plan, for concurrence by the Regional Water Board Executive Officer, within **180 days of the effective date of this Order** to excavate biosolids from the unpermitted onsite disposal location and dispose of them in accordance with Finding VI of this Order.
- ii. Implementation – The Discharger shall commence implementation of the approved sludge disposal work plan within 60 days of concurrence with the work plan by the Executive Officer, or at a time otherwise agreed upon by the Executive Officer and Discharger in writing.

Comment D. The District claims that the Special Provision requiring an Increased Treatment and Containment (ITC) Plan is unsupported by the Findings and evidence and should be deleted. The District also asserts that the work plan requirement is overly vague such that the District is uncertain what information would be expected in an ITC work plan. The District further claims that the Draft Order contains other requirements, such as increased monitoring requirements and prohibitions, which are sufficient to ensure that the District achieves best practicable treatment and control (BPTC).

In this comment, the District state that, “the findings demonstrate that the District recently took measures to contain and increase treatment of waste, the waste is contained...”

Response: The District took steps to partially contain its wastewater by lining the last pond in the treatment series (Pond 4) with a high-density polyethylene (HDPE) liner. Still, Pond Nos. 1, 2, and 3, which have wastewater that is less treated than Pond No. 4, remain unlined. Wastewater begins discharging as soon as it begins secondary treatment in Pond No.1. Therefore, the wastewater is not adequately contained. The wastewater treatment facility has no active treatment unit processes such as pond aerators, advanced nutrient removal, or disinfection. Furthermore, a report by the District’s consultant dated March 16, 2011, includes the results of a modeling exercise indicating that the expected nutrient concentrations in groundwater from the pond discharges would exceed the drinking water maximum contaminant levels. The existing groundwater sampling data do not corroborate the above referenced model results, but the data set is very limited and the groundwater wells may not be appropriately sited to detect the impacts from the ponds in the heterogeneous fractured bedrock geologic setting.

The work plan requirement in the draft order is intended to give the District flexibility in how to address treatment and containment issues. The scope of this work plan includes enough detail to guide the District in improving treatment and containment, while still allowing the District to choose the method and manner of compliance. Nonetheless, it is important that the wastewater be sufficiently contained and treated prior to discharge to be protective of groundwater quality. Therefore, the expected

scope of this work plan is for the District to propose design criteria and an implementation schedule to contain and treat its wastewater to levels that are protective of groundwater quality. The Report of Waste Discharge (ROWD) did not contain any engineering design criteria for containment of Ponds 1, 2, or 3, or for treatment standards of effluent quality beyond limited characterization from pond sampling. Section 6.02 of the ROWD describes the District's future plans at the treatment plant as follows:

"It is also proposed in the future that the existing ponds are taken off line sequentially, drained, cleaned, repaired and lined with the same liner material as the new ponds to ensure every pond at the WWTF would then be considered completely evaporative."

This work plan requirement is intended to gather design criteria and an implementation schedule of the proposed containment of Ponds 1, 2, and 3 including demonstration that the proposed containment will protect groundwater quality.

Staff disagrees with the District's claim that "the Draft Order contains other requirements sufficient to ensure that the District achieves BPTC." Municipal waste includes many pollutants that degrade water quality. Adequate treatment and containment is needed to protect water quality and minimize the discharge of pollutants to waters of the State. Due to the heterogeneous fractured bedrock geologic setting, uncertainty remains whether groundwater monitoring will feasibly be able to detect discharges from the ponds. An increased treatment and containment plan is, therefore, a fundamental part of the draft Order, which will ensure that compliance with the Order will result in BPTC.

Nonetheless, the District proposed some minor modifications to the increased treatment and containment plan that staff have incorporated into the proposed Order. The modifications are as follows:

b. Increased Treatment and Containment Plan

- i. Work Plan – The Discharger shall submit a work plan, for concurrence by the Regional Water Board Executive Officer, within **180 days of the effective date of this Order** to increase containment of partially treated wastes and to increase treatment prior to discharge.
- ii. Implementation – The Discharger shall implement the approved work plan in accordance with the time schedule contained in the work plan and agreed to by the Regional Water Board Executive Officer.
- iii. Report of Completion – The Discharger shall submit a report of investigative findings documenting the completion of the work plan in compliance with this Order within 60 days of completing the work set out in the plan.

If, at any time, groundwater quality data indicates that the percolation discharges from the ponds are causing a violation of Receiving Water Limitation VII.A.1 of this Order, the Discharger shall, upon notification of the Regional Water Board Executive Officer, prepare and submit to the Regional Water Board Executive Officer for concurrence, a study to determine the best practicable treatment or control (BPTC) necessary to prevent any further degradation of groundwater quality. The BPTC study shall identify and describe any modifications, maintenance, or improvements required to achieve BPTC for the discharge.

Comment E.1 regarding Special Provision 1.c.i. The District is requesting a written explanation with regard to the need for the Work Plan required in this section, pursuant to Water Code section 13267. The District does not dispute the appropriateness of groundwater monitoring, but requests clarification that the scope of this requirement is consistent with the findings.

Response: In order to clarify the scope of this work plan requirement, Special Provision 1.c.i has been amended as follows:

c. Groundwater Monitoring Assessment

As of the date of this Order, there is an insufficient monitoring well network in place and insufficient groundwater data collected to determine local groundwater gradients and the potential groundwater quality impacts from the wastewater pond percolation discharges. Consistent with the findings of this Order, to determine local groundwater gradient, to determine the appropriate locations to monitor discharges from the ponds and to determine compliance with limitations and other enforceable requirements of the draft Order, a Groundwater Monitoring Assessment Work Plan is required as follows in section VIII.D.1.c.i of the draft Order:

- i. Work Plan – The Discharger shall submit a work plan, for concurrence by the Regional Water Board Executive Officer, to determine the impacts on groundwater from the wastewater pond percolation discharges including groundwater gradient direction within **90 days of the effective date of this Order** or at a time otherwise agreed upon by the Executive Officer and Discharger in writing. The work plan shall describe the steps the Discharger intends to follow to site, construct, develop, and sample monitoring wells for compliance with Attachment C, and should include, at a minimum the following items:

Comment E.2 regarding Special Provision 1.c.i(a). “The District contends that construction of an up-gradient groundwater monitoring well...is unnecessary and impractical.”

Response: As stated in the Regional Water Board letter dated July 28, 2011, responding to the proposed ROWD, “We disagree with the use of well MW-2 to determine background groundwater quality. MW-2 has unexplained concentrations of pollutants that are higher than the downgradient well MW-1. The September 10, 2010, MW-2 data for nitrate+nitrite as N, ammonia, total phosphorus, and Total Suspended Solids indicate that this well may be influenced hydraulically by the wastewater ponds and, therefore, does not accurately represent upgradient groundwater quality.” More specifically, the data contained in the ROWD from sampling on September 10, 2010, show elevated levels of Total Kjeldahl Nitrogen, Ammonia, Total Phosphorus, and Total Suspended Solids in the purported up-gradient monitoring well (MW-2) relative to MW-1, while the data from sampling on February 15, 2011, show elevated levels of, Nitrate + Nitrite, Total Phosphorus, and Total Suspended Solids in the purported up-gradient monitoring well (MW-2) relative to MW-1. Although these data indicate that MW-1 may be within the area hydraulically influenced by pond discharges, the data set is too small to make definitive conclusions. To comply with the requirements of this section of the draft Order, the District may collect more data to determine if MW-2 is appropriate as an up-gradient monitoring well, however, the current data set alone suggests the need for a more appropriately sited up-gradient well further from the ponds.

The District claims that MW-2 was sited within five feet of the eastern up-gradient property line and thus the District has no property on which to construct an alternative well. This issue arises frequently when Water Boards require groundwater monitoring well installations; there are other legal mechanisms such as obtaining easements on neighboring parcels for such wells. Therefore, the District is not limited by its own property boundary for well siting and will need to either collect more data from its groundwater monitoring network to demonstrate that MW-2 is indeed unaffected by the pond percolation discharges or the District will need to construct a new up-gradient well.

Special Provision VIII.D.1.c.i.(a)

- (a).Proposed location of an up-gradient groundwater monitoring well that is unaffected by the discharge from the WWTF, and which is in the same formation as the other down-gradient wells.

Comment E.3 regarding Special Provision 1.c.i(b). The District requests clarification regarding the number of down-gradient groundwater monitoring wells being required by this section. The District also requests the language be changed from “of each pond” to “of the ponds.”

Response: The number of down-gradient groundwater monitoring wells necessary to adequately characterize the discharges from the wastewater ponds is a function of the hydrogeologic setting and of the well site placements. Therefore, with regards to the number of monitoring wells staff can only identify the minimum requirements. Three monitoring wells are necessary, at a minimum, to determine the local groundwater gradient. Staff have made changes to the draft Order including an insertion to the Report of Investigation to more clearly identify expectations of the report, as follows:

Special Provision VIII.D.1.c.i.(b)

- (b).Proposed locations for groundwater monitoring wells down-gradient of the ponds.

Special Provision VIII.D.1.c.iii

- iii. Report of Investigation – The Discharger shall submit a report of investigative findings within 60 days of completing the work set out in the plan. The report of investigative findings shall include monitoring well boring logs including records of lithology and stratigraphy; well construction diagrams; well casing and water level elevations; water level contour maps including gradients; sampling and analysis data; and recommendations for any further investigative activities. The report shall also include a plan for disposal of wastes generated during implementation of the groundwater monitoring assessment work plan (e.g. during construction and development of monitoring wells). Pursuant to California Water Code 13260 and California Code of Regulations Title 27, which regulate land disposal activities, the Regional Water Board requires evidence that placing non-hazardous investigation-derived waste or inert materials (which may include discarded product or recycled materials) will not result in degradation of water quality, human health, or the environment.

Comment E.4 regarding Special Provisions 1.c.i and 1.c.ii. The District requests minor modifications to the implementation language and timing with regards to the Groundwater Monitoring Work Plan similar to Comment C above.

Response: Staff concur with this comment and have made the following changes to the proposed Order:

Special Provision VIII.D.1.c.ii

- ii. Implementation – The Discharger shall commence implementation of the groundwater monitoring work plan within 60 days of concurrence with

the work plan by the Executive Officer, or at a time otherwise agreed upon by the Executive Officer and Discharger in writing.

Comment E.5 regarding Special Provision 1.c.iii. The District requests that the Order apply the unconditional sewage exemption of Title 27 and that the Findings and Special Provision 1.c.iii be revised accordingly.

Response: The issue surrounding the application of the unconditional sewage exemption of Title 27 is long and complex. Staff had denied the District's request to apply this exemption in previous correspondence based on previous legal interpretations of the regulation that were, at that time, supported by the State Water Board's Lodi Order WQ-2009-0005. That Order, however, has been amended in Order WQ-2012-0001 by the State Water Board to provide clarity on the scope of its findings. Based on the amended Lodi Order, the Regional Water Board has now determined that the unconditional sewage exemption of Title 27 applies to the District's wastewater treatment ponds. Accordingly, the following modifications have been made to the proposed Order:

Page #7 of the draft Order and now on page D-3 of the Fact Sheet:

- D.** California Code of Regulations (CCR). The discharge authorized herein and the treatment and storage facilities associated with the discharge are exempt from the requirements of title 27, CCR, section 20005 et seq. The exemption, pursuant to section 20090(a) of title 27, allows for the exemption of treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludges or solid waste from wastewater treatment facilities shall be discharged only in accordance with the applicable State Water Board promulgated provisions of title 27, CCR.

Comment F. The District asserts that any SSO-related requirements beyond the requirement to comply with the statewide general permit for sanitary sewer systems are inappropriate.

Response: The Sanitary Sewer System requirements in the draft Order are standard in all municipal wastewater treatment plant permits in the North Coast Region. The statewide general permit for sanitary sewer systems allows Regional Water Boards to require additional conditions to protect water quality. These requirements are necessary to retain the Regional Water Board's authority to protect groundwater quality from sewer system discharges and to ensure that staff is adequately informed of any discharges. No change has been made in response to this comment.

Comment G. The District requests a reduction in the monitored constituents and the associated monitoring frequency for effluent and receiving water monitoring and asserts that the requirements in the Draft Order are unsupported by the findings.

Response: The monitoring required in Ponds 1 through 4 is necessary to better understand the degree of treatment occurring from pond to pond and to assess the discharge water quality. The District has proposed a decrease in monitoring frequency from quarterly for each pond to annually for each pond on a quarterly rotating basis. Rather than grant a seventy-five percent decrease in proposed monitoring as requested by the District, staff has determined that semiannual monitoring of each pond, which is a fifty percent reduction in proposed monitoring, would be sufficient to determine compliance with the Order. Staff has amended the draft Order as follows:

Table C-4. Internal Monitoring – Monitoring Locations INT-001B, 002, 003, 004

Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	std units	Grab	Semi annually
Total Coliform Organisms	MPN/100 mL	Grab	Semi annually
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	Grab	Semi annually
Total Suspended Solids	mg/L	Grab	Semi annually
Nitrogen, Total (as N)	mg/L	Grab	Semi annually
Nitrate (as N)	mg/L	Grab	Semi annually
Specific Conductivity	mg/L	Grab	Semi annually
Boron	mg/L	Grab	Semi annually
Hardness	mg/L	Grab	Semi annually
Title 22 Pollutants ¹	µg/L	Composite from Ponds 1,2,3 and 4	Once Every 3 Years

The internal effluent monitoring requirement for Title 22 Pollutants is necessary to ascertain the potential for the discharge to affect groundwater concentrations for these constituents. This monitoring requirement of “Once Every 3 Years” is

¹ Title 22 Pollutants refers to those chemical constituents specified in Table 3-2 of the Basin Plan and/or constituents for which Maximum Contaminant Levels (MCLs) have been established in title 22, Division 4, Chapter 15, Articles 4 and 5.5 of the California Code of Regulations.

consistent with the groundwater monitoring for these same constituents and will enable staff to determine any impacts to groundwater from the discharges.

Other Changes to the Permit:

Staff made additional changes to the permit for clarity and completeness:

- Made a minor change to Effluent Limitation IV.A.1
- Added a Basis and Rationale for Requirements in Finding II.A, and
- Expanded the Fact Sheet (Attachment D).

Effluent Limitation IV.A.1

A. Discharge from solids containment basin to Pond 1

1. The Discharger shall maintain compliance with the following limitation at Discharge Point EFF-001A :

Permit:

II. FINDINGS

The California Regional Water Quality Control Board, North Coast Region (hereinafter Regional Water Board), finds:

A. Basis and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on information submitted as part of the Discharger's application for permit renewal, monitoring data submitted during the term of the Discharger's previous Order, and other available information. The Fact Sheet (Attachment D) contains facility information, legal authorities, and rationale for Order requirements. The Fact Sheet is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through C are also incorporated into this Order.

The Lake Shastina Community Services District (hereinafter Discharger) is currently discharging pursuant to Waste Discharge Requirements Order No. 97-91. The Discharger submitted a Report of Waste Discharge (ROWD), dated December 24, 2008, and applied for renewal of waste discharge requirements to discharge an AADF up to 0.132 mgd of treated wastewater from the Lake Shastina Community Services District Wastewater Treatment Facility (hereinafter Facility and WWTF). The Discharger submitted additional information to complete the ROWD on March 28, 2011, and the ROWD was deemed complete by Regional Water Board staff on October 7, 2011.

Fact Sheet:

C . California Water Code. The California Water Code (Water Code) establishes the authority for the Regional Water Board to establish water quality objectives, impose discharge prohibitions, and prescribe waste discharge and reclamation requirements. Water Code section 13241 requires each regional board to “establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance [...]” The control of pollutants discharged is established through effluent limitations and other requirements in WDR permits. Water Code section 13243 provides that “A regional board, in a water quality control plan or in waste discharge requirements, may specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted. Water Code section 13260 et seq establishes regulations associated with the prescription of waste discharge requirements and Water Code Chapter 7 (section 13500 et seq) establishes regulations associated with the prescription of reclamation requirements.

It is the Regional Water Board’s intent that this Order shall ensure attainment of water quality standards, applicable water quality objectives, and protection of beneficial uses of receiving waters. This Order therefore requires the Discharger to comply with all prohibitions, effluent limitations, discharge specifications, reclamation specifications, reclamation provisions and requirements, receiving water limitations, standard provisions, and monitoring and reporting requirements. The Order further prohibits discharges from causing violations of water quality objectives or causing conditions to occur that create a condition of nuisance or water quality impairment in receiving waters as a result of the discharge.

D . California Code of Regulations (CCR). The discharge authorized herein and the treatment and storage facilities associated with the discharge are exempt from the requirements of title 27, CCR, section 20005 et seq. The exemption, pursuant to section 20090(a) of title 27, allows for the exemption of treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludges or solid waste from wastewater treatment facilities shall be discharged only in accordance with the applicable State Water Board promulgated provisions of title 27, CCR.

III. DISCHARGE PROHIBITIONS

These discharge prohibitions are necessary to ensure that the discharges are consistent with the Report of Waste Discharge submitted as an application for this Order and to ensure compliance with the Basin Plan.

IV. EFFLUENT LIMITATIONS

A. Discharge from solids containment basin to Pond 1

The effluent limitation at EFF-001 monitored at INT-001A is necessary to ensure proper solids separation prior to discharge into Pond 1 and effective operation and maintenance of the solids containment structure. Historic solids carryover into Pond 1 has reduced the available volume in Pond 1, and has contributed in part to the District's recent need to construct Pond 4.

V. DISCHARGE SPECIFICATIONS

These discharge specifications are necessary to ensure compliance with the Basin Plan, protect human health and the environment. Specifications D, F, and G have been carried over from the previous permit and Specifications A, B, C, and E are standard requirements for municipal wastewater treatment plants.

VI. SOLIDS DISPOSAL

Order requirement VI for solids disposal requires that solids disposal comply with Title 27 and the Water Code. This requirement was in the previous permit.

VII. RECEIVING WATER LIMITATIONS

Receiving Water Limitation VII.A.1 for groundwater implements the general water quality objectives for groundwaters from the Basin Plan or any future revisions thereto.

VIII. GENERAL PROVISIONS

All General Provisions, except Special Provision VIII.D, are standard Order requirements for all municipal treatment plants. Special Provision VIII.D requires a Sludge Disposal Project, an Increased Treatment and Containment Plan, and a Groundwater Monitoring Assessment.

The Sludge Disposal Project is required because historic practices of onsite solids disposal have not complied with previous order requirements and the residual wastes need to be disposed of in accordance with the solids disposal requirements contained in finding VI of this Order.

The Increased Treatment and Containment Plan is required in this Order pursuant to Water Code section 13263 to comply with Resolution No. 68-16 by ensuring that the District achieves the best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur and that the highest

water quality consistent with maximum benefit to the people of the State will be maintained. Constituents in municipal wastewater have a well-established potential to exceed groundwater quality objectives, which has been corroborated by the results of a site-specific model using site-specific data performed on behalf of the District. Furthermore, the requirement for an increased treatment and containment plan has been included in this Order based on the District's own proposal in its application for a new permit. As described in the District's ROWD received by the Regional Water Board on March 28, 2011,

“It is also proposed in the future that the existing ponds are taken off line sequentially, drained, cleaned, repaired and lined with the same liner material as the new ponds to ensure every pond at the WWTF would then be considered completely evaporative.”

The treatment and containment work plan requirement is intended to give the District flexibility in how to address treatment and containment issues. The scope of this work plan includes enough detail to guide the District in improving treatment and containment, while still allowing the District to choose the method and manner of compliance. Nonetheless, it is important that the wastewater be sufficiently contained and treated prior to discharge to protect groundwater quality.

A report by the District's consultant dated March 16, 2011, modeled the expected nutrient concentrations in groundwater from the pond discharges suggesting that the discharge would exceed the drinking water MCLs for nitrates. The District later suggested that its empirical data shows no impact on groundwater. These existing data are limited and groundwater wells may not be appropriately sited to detect the impacts from the ponds in the heterogeneous fractured bedrock geologic setting. A robust groundwater monitoring program would be necessary to adequately detect and characterize the discharges from the ponds. While this may be possible, this approach could be cost prohibitive relative to increased treatment and containment, and does not provide adequate water quality protection in the interim. Staff provided the District flexibility in determining the best solution by developing a treatment and containment plan while concurrently conducting groundwater monitoring.