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BY ELECTRONIC MAIL AND US MAIL

February 26, 2010

Kenneth D. Landau, Assistant Executive Officer
James D. Marshall, Senior Engineer
Anand Mamidi
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
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Re: Bear Valley Water District, Bear Valley Wastewater Treatment Plant, Proposed
Amendment to Time Schedule Order R5-2005-0140

Dear Messrs. Landau, Marshall and Mamidi,

Please accept these comments on behalf of the Carpenters Local 1789 regarding the proposed time schedule extensions for the Bear Valley Water District to achieve compliance with effluent limitations for copper, iron and manganese contained in the District's NPDES permit. Carpenters Local 1789's members live in and around Alpine County and have been and will be affected by pollution discharges from the Bear Valley Wastewater Treatment Plant. We have enlisted the assistance of Dr. Bruce Bell, Ph.D. of Carpenter Environmental, Inc. to evaluate the rationales provided by the District and, thus far, accepted by Regional Board staff, for the proposed time schedule, especially the five year extension proposed for complying with the NPDES permit's copper effluent limitations. As is explained in Dr. Bell's review, which is attached and incorporated by reference, as well as the discussion below, the reasons behind the time schedule extension are inappropriate on a technical as well as legal basis. Local 1789 respectfully requests the Regional Board to reject staff's recommendation and reserve the Regional Board's authority to fully enforce through both administrative civil penalties and appropriate compliance orders the NPDES permit's effluent limitations as well as the existing deadline for the District to complete installation of a tertiary treatment plant. If the Regional Board nevertheless chooses to amend the time schedule order, Local 1789 believes that any time schedule for achieving compliance with the copper effluent limits cannot extend beyond the deadline for the District to install tertiary treatment, *i.e.*, October 1, 2010. The tertiary plant design already identified by the District and apparently successfully tested will be capable of treating copper, manganese and iron down to levels below the permit limits with minor modifications.

The Regional Board references Water Code § 13300 as the authority for the proposed amendments to the time schedule order. Section 13300 provides that “[w]henver a regional board finds that a discharge is taking place or threatening to take place that violates or will violate requirements prescribed by the regional board . . . the board may require the discharger to submit for approval of the board, with such modifications as it may deem necessary, a detailed time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements.” A brief review of the District time schedule proposal submitted in December 2009 demonstrates that the District’s reasons for requesting the time schedule are not to **correct or prevent** the anticipated violations of its permit requirements but instead to gather information in hopes of **changing** its permit requirements. The District claims two categories of monitoring omissions as suggested rationales upon which to base a five-year extension for the District to comply with its NPDES permit’s effluent limitations for copper. First, the District claims that it has not been able to characterize its effluent under actual discharge conditions because of its staff’s failure to monitor the District’s storage reservoir. Second, the District cites its failure to gather receiving water data for copper and other metals.

Neither of these monitoring omissions by the District is relevant to its compliance with the NPDES permit’s copper, iron, or manganese limitations. To begin, the District’s reasons for failing to conduct the referenced monitoring are inexcusable. The District’s failure to hire appropriate staff, failure to provide sufficient oversight of storage reservoir sampling and their avoidance of their own sampling spigot installed in 2007 are not appropriate rationales for rewarding them with five additional years to comply with the copper effluent limitations. As for the District’s failure to collect receiving water samples, whatever risks are present in Bloods Creek have been present ever since the treatment system was initially constructed and certainly since before the 2005 permit. The District has had ample time to provide necessary and safe sampling access to the creek.

Putting aside the District’s unpersuasive reasons for not sampling, none of the data that the District failed to collect is necessary to correct their anticipated violations of the metals limitations. The next step to complying with the copper limit and other metals limits is clear and already mandated by the NPDES permit – construct a tertiary treatment plant by not later than October 1, 2008. In September 2008, the Regional Board opted to refrain from enforcing the permit’s clear deadline, issuing a time schedule order to achieve tertiary treatment by October 1, 2010. The tertiary treatment plant would have to be supplemented with additional minor modifications in order to treat copper and other metals down to the permit limitations. With those minor modifications, the plant would be capable of complying with the metals limitations

The omitted receiving water data is not relevant or necessary for the District to correct its threatened metals violations. *See Bell Comments, p. 2.* The only reason cited by the District for collecting the receiving water data for copper and other metals is in order to assess assimilative capacity. Bear Valley Water District, Copper Time Schedule Request, p. 7 (Dec. 15, 2009). The District’s desire to further evaluate the stream’s assimilative capacity for copper or other metals is not about complying with their current permit. Such data is only relevant to the District’s

desire to change its NPDES permit in the future based on a site specific limitation or additional dilution credit. As Dr. Bell explains:

The only possible use of receiving water sampling would be to support a request by BVWD for a change in effluent limitations. BVWD's choice to not collect receiving water data during the five years it had to comply with its previous Time Schedule Order is not a reason to delay compliance with water quality based effluent limitations.

Bell Comments, pp. 2-3. Studying efforts to change an underlying waste discharge requirement are not an appropriate rationale for issuing a time schedule order designed to comply with the current waste discharge requirements and is not authorized by section 13300.¹

The District's omitted wastewater data from the storage reservoir also is irrelevant to complying with the NPDES permit's copper limit and other metals limits. The District's data confirms that they are well aware that they must add treatment to their existing plant in order to comply with the copper limitations. They concede that they will not be able to meet the copper numbers by any source control measures. Any additional effluent data from the storage reservoir does not change that basic reality. More importantly, the modifications necessary to address copper in the District's mandated tertiary treatment plant are not dependent on copper concentrations in the plant's influent. Again, Dr. Bell explains:

Copper, iron and manganese are precipitated by chemical addition. Thus, the soluble metals remaining are a function of the solubility of the metals in the presence of the chemicals that are added. The precipitated solids are removed by settling and filtration. None of these processes depend on influent metal concentration over a wide range of influent concentrations; meaning that the effluent concentrations achieved by the treatment processes are independent of the influent concentrations over the range of concentration expected in BVWD's wastewater.

Bell Comments, p. 2. "No additional copper sampling of the storage reservoir is necessary to confirm BVWD's immediate need to upgrade its treatment plant to tertiary treatment with minor modifications to address metals in the effluent." *Id.*

There also is no doubt about the necessary solution to the District's treatment problems – compliance with the permits tertiary treatment deadline or, at a minimum, the Regional Board's existing time schedule deadline of October 1, 2010. Dr. Bell confirms that "[c]opper can be removed in BVWD's proposed tertiary treatment plant with minor modifications and modest additional costs." Bell Comments, p. 2. "A tertiary treatment plant uses chemicals to improve

¹ Moreover, the receiving water data that was collected already shows a maximum receiving water concentration of total copper at 1.7 ug/l in Bloods Creek, indicating that the chances of any assimilative capacity for copper existing in the creek are slim.

settling of solids prior to filtration. By adding the correct chemicals at the correct dose copper, iron, and manganese can be removed in a tertiary treatment plant.” *Id.* The District already has identified a tertiary treatment design that is appropriate for their wastewater. *See* www.bvri.org/Sewer.htm.pdf, p. 11 of attached excerpt (“We have selected a design concept put forth by a Bear Valley resident, John Mallard of Clean Filtration Technologies, Inc., as the most economical way to meet our needs”); *id.*, page 9 of attached excerpt (“At its April 20, 2009 meeting, the District Board voted 3 to 1 to support in concept the plant design from Clean Filtration Technology, based on the successful operation of the pilot plant”) (emphasis added). The proposed time schedule order for copper must be consistent with the NPDES permit’s October 2008 deadline for achieving tertiary treatment or, at a minimum, the Regional Board’s deadline for tertiary treatment.

Another key motivator behind the District’s request to amend the TSO, again incorporated by staff, is to avoid mandatory minimum penalties. Nothing in Section 13300 authorizes the Regional Board to approve a time schedule in order for a discharger to be relieved of mandatory minimum penalties. This is especially true where, as here, the discharger was already provided a five year compliance schedule to achieve the copper limits in its 2005 NPDES permit.

The Regional Board also does not have sufficient evidence to find that the proposed five year copper schedule achieves compliance as soon as possible. It will not take the District five years to install the mandated tertiary treatment, even given their delays to date. Indeed, the tertiary treatment system already is a year and a half overdue and, according to the Regional Board and at the District’s request, to be constructed by October 2010. Assuming any copper time schedule is appropriate, the longest it could be established is through October 1, 2010, consistent with the Regional Board’s previous findings and the current deadline for the District to install tertiary treatment.

For each of these reasons, Local 1789 requests that the Regional Board reject the District’s and staff’s recommendation to protect them for five-years from administrative civil penalties or other enforcement for their impending copper violations and instead take appropriate actions to enforce the existing tertiary treatment plant deadline in order to assure their compliance with not only the tertiary standard but all of their metals limits, including copper. If you have any questions regarding the above comments, please do not hesitate to call me at Lozeau Drury LLP at (510) 749-9102 x. 103.

Sincerely,



Michael R. Lozeau
Lozeau Drury LLP on behalf of Carpenters Local 1789

Attachments

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February 26, 2010

Mr. Michael R. Lozeau
1516 Oak Street
Alameda, CA 94501

Dear Mr. Lozeau,

Carpenter Environmental Associates (CEA) was retained to review the Tentative Order Amending Time Schedule Order No. R5-2005-0140, Bear Valley Water District (TSO) issued by the California Regional Water Quality Control Board, Central Valley Region (RWQCB). In preparing the comments presented below, we reviewed the: TSO, December 30, 2005 letter from ECO:LOGIC to the RWQCB, December 15, 2009 letter from the Bear Valley Water District (BVWD) to the RWQCB re: Copper Time Schedule Order Request and Copper Corrective Action Plan for the Bear Valley Wastewater Treatment Plant, RWQCB Order No. R5-2005-0139, RWQCB Time Schedule Order No. R-5-0140, RWQCB Resolution No. R-5-0141 Amending Waste Discharge Requirements Order No. R5-2005-0139.

Comment 1: The justification for the TSO submitted by BVWD in its December 15, 2009 letter includes lack of storage reservoir effluent sampling data. The lack of storage reservoir effluent sampling data is attributable to BVWD's failure to comply with its responsibilities under the RWQCB Time Schedule Order No. R-5-0140

Discussion: In its December 15, 2009 letter to the RWQCB, BVWD points out that that before the current full-time General Manager was hired on July 28, 2009 it had only a part-time general manager since July 2008 and before that was without a full-time General Manager since 2003. In addition BVWD was without a District Engineer from July 2008 to July 2009. In my experience, failure to hire needed personnel is not a valid reason to receive an extension of deadlines contained in a NPDES permit. The same letter also points out that while a sampling tap was installed in 2007, the staff was not instructed to use it.

Comment 2: BVWD's December 15, 2009 letter contains sufficient sampling results to clearly demonstrate that the effluent storage reservoir samples contained copper at high enough concentrations to require action to treat copper to permit limits.

Discussion: BVWD's December 15, 2009 letter contains 19 results for total copper in the effluent storage reservoir. Only one of the 19 samples contained copper at a concentration less than BVWD's monthly average effluent limit. That sample was from 2003. One additional sample contained copper at a concentration equal to BVWD's maximum day effluent limit. That sample was from 2000. All samples taken since May 2003 have contained copper at a concentration higher than BVWD's daily maximum copper effluent limit. No additional copper sampling of the storage reservoir is necessary to confirm BVWD's immediate need to upgrade its treatment plant to tertiary treatment with minor modifications to address metals in the effluent. See Comment 3.

Comment 3: Copper, iron, and manganese are commonly removed by chemical addition, settling, and filtration. Those processes are insensitive to influent concentrations of the metals over a wide range of concentrations. Thus, sufficient information exists and has existed to design and construct a tertiary treatment plant that will remove copper, iron, and manganese to permit limits.

Discussion: Copper, iron and manganese are precipitated by chemical addition. Thus, the soluble metals remaining are a function of the solubility of the metals in the presence of the chemicals that are added. The precipitated solids are removed by settling and filtration. None of these processes depend on influent metal concentration over a wide range of influent concentrations; meaning that the effluent concentrations achieved by the treatment processes are independent of the influent concentrations over the range of concentration expected in BVWD's wastewater.

Comment 4: Copper can be removed in BVWD's proposed tertiary treatment plant with minor modifications and modest additional costs.

Discussion: A tertiary treatment plant uses chemicals to improve settling of solids prior to filtration. By adding the correct chemicals at the correct dose copper, iron, and manganese can be removed in a tertiary treatment plant.

Comment 5: BVWD does not require any receiving water data to design facilities for removal of copper, iron, and manganese.

Discussion: BVWD's effluent limitations for copper, iron, and manganese are contained in RWQCB Order No. R5-2005-0139. The only possible use of receiving water sampling would be to support a request by BVWD for a change in effluent limitations. BVWD's choice to not collect receiving water data during the five years it had to comply with its

previous Time Schedule Order is not a reason to delay compliance with water quality based effluent limitations.

Sincerely,

Carpenter Environmental
Associates, Inc.

A handwritten signature in black ink, appearing to read "Bruce A. Bell". The signature is written in a cursive, flowing style with some loops and flourishes.

Bruce A. Bell, Ph.D., P.E., BCEE
President

The articles here are in chronological order. For the latest, go to the bottom.

Bear Valley Water District Told It Must Stop Effluent Spills; Bear Valley Limited To 4 New Single Family Homes For The Year 2000

At a hearing in Sacramento on January 27, 2000, the Central Valley Regional Water Quality Control Board imposed a Cease and Desist Order on the Bear Valley Water District, operator of the Bear Valley/Lake Alpine sewer system; the Board imposed a limit of 4 new single family sewer hookups for calendar year 2000.

This was a response to several years of effluent spills from a storage reservoir in the meadow south of Highway 4. The spills were caused by snowmelt in the uncovered reservoir, diluting the primary treated effluent stored through the winter until Bear Valley Water District can get rid of it in the summer by spraying it on the hillside next to the reservoir.

The primary treatment plant only operates at 20% of its capacity, but the reservoir is too small to hold the effluent plus all the snow that lands on it.

The Regional Board made it clear that they would not tolerate a continuation of a 5 year pattern of repeated violations by the Bear Valley Water District. Downstream water users like Stockton East Water District have complained repeatedly about the spills which end up in the Stanislaus River. Although the effluent is highly diluted and yields readings comparable to mountain stream water, it is not tested for pathogens which might be present.

The Regional Board has imposed a tough schedule with several incremental deadlines for Bear Valley Water District to meet. The theme of the deadlines is identifying a solution to the overflows, identifying a funding source for the fix, and building the solution, whatever it is. The Regional Board suspended \$25,000 of a \$30,000 fine, with the understanding that the \$25,000 would be applied to an engineering study to identify the fix.

The Water District contracted with Boyle Engineering of Sacramento to do the study and guide the Water District through the Region's requirements. At the District's Feb. 21 meeting, John Burris of Boyle presented his first report and discussed alternative solutions. He said the easiest and cheapest solution would be to use more spray field in the summer to draw down the reservoir to a lower level. The Water District has been negotiating casually with the U. S. Forest Service for several years to buy 200 acres for this purpose, with no result. Now the negotiations are getting more serious as the District faces the Region's deadlines. It's hard to tell whether the Forest Service will sell the land after their long and grueling decision process, and it's unknown so far whether such a transaction would happen soon enough to suit the Region.

Of the private landowners around the reservoir, Bruce Orvis, Jr. is already taking as much of the effluent as he can. TBH Partners, owners of the meadow, have said that they will only consider taking effluent if it is safe for human contact, which means tertiary treatment.

Burris discussed tertiary treatment as an option. It would mean building a new treatment plant and getting a NPDES permit to spill. Tertiary treatment is the standard used for effluent that is to be applied where human contact is possible, like golf courses. It is more expensive to build and operate a tertiary plant than Bear Valley's present primary treatment system. The good news is that, if you treat to tertiary standard, you MAY be allowed to spill occasionally. There's no guarantee, however, that the NPDES permit would be granted.

As to funding, the Water District Board has not made a final determination, but they are leaning toward a mechanism called an installment sale agreement. This would allow a rate increase to cover the cost, and it might not require an election. The Board is still investigating this but it appears that, after public notice and a public hearing, the Board can levy the increase unless 51% of the ratepayers file a written protest. The District used bonds in the past but that was before the Forest Service properties at Lake Alpine and the downhill ski area were allowed into the District and onto the sewer system. Federal agencies are exempt from bonds but not from assessments, so using a bond would mean that USFS

properties, which contribute 26% of the effluent in the system, would not pay; clearly an unfair situation for the private property owners in Bear Valley who would be stuck with the Forest Service's share of the bill.

An assessment would require an election by the property owners in the Water District. It would likely be structured like the recent election on the fire assessment, in that votes would be weighted by the assessed value of each parcel.

How much will this cost? The cheapest we would get away with would be a land purchase from the Forest Service. The engineer says we may not need 200 acres, the amount the Water District has been negotiating for; but if it is 200 acres, the price may be around \$1,000 an acre, or a total of \$200,000. There would be additional expense for pipe and the operation of the new spray field.

The most expensive is a tertiary treatment plant. As an example, Calaveras County Water District just built such a plant for 1200 hookups for \$1.6 million. BV Water District has roughly the same flow to process as CCWD did. But the good news is that we may be able to retrofit our existing plant with tertiary filters. As of this writing (3-21-00), the Water District Board thinks we will be able to solve our problem for less than \$1 million, and perhaps for less than \$500,000.

The absolute worst case for cost would be building a tertiary treatment plant and NOT getting a NPDES permit to discharge. That would mean we would have to secure more spray field, and we might have to expand the reservoir too. No one has tossed out a cost for expansion of the reservoir.

So the ballpark for cost could be anywhere from \$250,000 to \$1 million. How big an assessment would be needed? In very rough terms, a \$100 per parcel assessment or rate increase for 20 years raises \$1 million.

Bill Voreyer, manager of the Water District, points out that Bear Valley sewer customers have had some of the lowest rates in the Sierras for comparable systems. It appears that those days are coming to an end.

The County Building Department and the Water District are trying to figure out how to handle the 4 permits we will be allowed. Understandably, neither wants to be the bad guy in the position of making the final determination on which 4 building permits/sewer hookups get authorized this year. As of this writing (3-21-00), they are considering a system whereby the County lets anyone build, with a building permit, but only 4 people get to hook up to the sewer and thus actually use their new house. And the Water District has to decide which 4 people get to hook up. So some people might choose to build, gambling that either they will get a permit, or the restrictions will be lifted soon.

It all depends on the Regional Board and how they view the Water District's efforts. The Region could lift all restrictions before we build anything if they feel that we have our act together and are making speedy progress.

If you would like more information, call the Water District at 209-753-2112. Water District meetings are held on the 3rd Monday of each month at 1 pm in the Water District Building between the library and the school. The meetings are open to the public.

Eric Jung June 2000

Update: September 2000: no assessment, rates go up, cost of tertiary lower than at first thought

There's no need for an assessment in the near future to solve the sewer problem. That's because we now know that we can build a tertiary plant for less than was originally thought, perhaps \$350,000. The Water District Board raised the annual user fees at its August 21 meeting; a single family home now will pay \$432 a year, up from \$288. The fee for a new hookup was also raised from \$2,450 to \$4,500.

The increased annual user fees will pay for the tertiary plant for current users. The fees for new hookups will pay for expansions of the plant, which will be designed in modular fashion.

The District continues to pursue an NPDES permit, more acreage from the Forest Service for spraying, the use of private land for irrigation disposal of effluent, and the possibility of a pipeline to the

ski area for disposal of effluent there.

At the August 21 Water District Board meeting, Chairman Dave Ritchie said construction of the tertiary plant would probably start in spring of 2001. There's no way to tell whether that would be enough progress for the Regional Board to lift the hookup restrictions. A waiting list is developing for hookup permits.

So far the moratorium hasn't killed off optimism about Bear Valley's future. Over 30 lots were sold in Bear Valley in the summer of 2000.

EJ

Update: June 2001: Water District misses on first try for NPDES permit, but still optimistic for July

At its June 14 meeting, the Regional Water Quality Control Board rejected the Bear Valley Water District's application for an NPDES discharge permit by a 3-3 vote, despite state staff's recommendation for approval. The Regional Board also shelved consideration of lifting the partial building moratorium. Some of the Regional Board members were uncomfortable with the wording of the permit application which appeared to allow more total spillage than is actually needed.

State staff will work with the District's staff and contract engineer (Rich Stowell of Eco-Logic) to reword the application, and the application will be back on the Regional Board's agenda for consideration on July 27.

Update: August 2001: New Hookup Limit Raised to 10 per year

At its July 27 meeting, the Sacramento Regional Water Quality Control Board raised the limit on new residential hookups from 4 to 10 per year. There was no consideration of an NPDES discharge permit.

Update: February 2002: District Asks State to Lift Restrictions

At its February 18 meeting the Bear Valley Water District Board voted to ask the state to rescind the Cease and Desist Order which currently limits Bear Valley to 10 new sewer connections per year. The Board is optimistic about its chances, thanks to new calculations by their engineering firm, Eco-Logic. Eco-Logic's latest study show that measures taken since the C & D Order was levied on Bear Valley appear to guarantee no further overflows of the effluent reservoir. They calculate that the District can now survive 6 successive years with 100 year storm events.

The C & D Order was imposed when the reservoir ran out of capacity and treated effluent was released into Bloods Creek. Since then the District signed a lease with the Forest Service for the use of 40 more acres for effluent disposal. And, according to District Manager Bill Voreyer, the District has fine-tuned its evaporation disposal system to get rid of more effluent. This should allow an increase in capacity from 100,000 gallons a day to 130,000 gallons a day. Eco-Logic feels that this should allow buildout of Master Planned projects on the north side of Highway 4 for the foreseeable future, including homes, condos, and commercial development.

What is left out of the calculations for now is development on the south (meadow) side of the road. Although the Master Plan includes this area, it isn't in the Water District. The owners, TBI Partners, would have to request annexation to the District, which would trigger the need for increased capacity. The District has been talking with TBI about using the open areas of the meadow for effluent disposal. Chuck Toeniskoetter of TBI has told the District that they will not accept anything less than tertiary treated effluent on the meadow. The District has been considering tertiary treatment as one alternative. But if Eco-Logic is correct, it may not be needed yet. Nor would the District need an NPDES permit to allow discharge of effluent into Bloods Creek.

Just before the District got the new numbers from Eco-Logic, the Board surveyed the ratepayers about

the alternatives. Predictably, the ratepayers overwhelmingly supported the least expensive alternative, secondary treatment and an NPDES permit. But if the State accepts Eco-Logic's numbers, there's less chance of getting the permit. The State would prefer that the District solve its overflow problem without the permit, and would be less likely to support an application for the permit.

Voreyer hasn't ruled out tertiary treatment in the long run, and says there's a good chance that the District would go to tertiary in the future. But the District board will discuss that later, he says. The Board wants to get through the short term problem before starting on longer term planning.

One reason to go to tertiary treatment would be to protect the aquifer under the meadow. The State is requiring the District to install 6 monitoring wells in locations around the meadow to start measuring the effect of years of effluent disposal there. The aquifer is Bear Valley's emergency water supply, according to town founder Bruce Orvis, Jr.

Voreyer says part of the problem is the logjam the State created for itself when it imposed C & D Orders on districts all over the state. He notes that Bear Valley has a chance to be the first of those districts to get out from under a C & D Order. But the state staff is so busy, he says, that the District is constantly "fighting to stay on their radar".

He is pleased, however, with the Eco-Logic report, and optimistic that the State will buy Eco-Logic's numbers, since Eco-Logic has a good track record with the state. He says that lifting the C & D Order would allow the District to shift gears from "satisfying the State to satisfying community needs".

EJ

Update: June 7: C&D Order Lifted

At its June 7, 2002 meeting, the Regional Water Quality Control Board lifted the Cease and Desist Order by a unanimous vote. This means that the building restrictions are eliminated. The state staff had recommended the lifting of the C&D Order, since the Bear Valley Water District has complied with all state requirements since the imposition of the Order. Even the Stockton East Water District agreed that Bear Valley has done a good job of addressing its problems so far, and did not oppose the lifting of the Order. Stockton East opposed the granting of the NPDES permit and has kept an eye on Bear Valley's sewer situation since they are the downstream recipients of any problems Bear Valley dumps into the Stanislaus River.

EJ

Update: June 17, 2002: Service Rates Increased

The Bear Valley Water District Board held a public hearing on the proposed 55% increase in sewer service rates. There weren't enough protests, written or oral, to trigger an election on the matter, and the Board passed the increase after the hearing, which was mostly a question and answer session. Points brought out by the audience questions:

1. The increase has nothing to do with preparing for future development. It is necessary to comply with state mandated monitoring and planning for the existing sewer system. Expansion of the system's capacity will be paid for by hookup fees from future builders.
2. Metering sewer outflow is not cost effective. Sewer meters on houses would cost at least \$3,000 per house to install. They would require more staff time to read and to apportion bills. The extra costs would wipe out the small savings a few users might hope for, and most people's bills would be even higher.
3. The increase will pay mostly for the upfront costs of the state mandates. It is possible that the rates would go down in 3 years after the monitoring wells are built and the new costs are reduced to ongoing operations. But the state is in control through these mandates, and the Water District Board was careful not to guarantee a future decrease in rates.
4. Bear Valley is not subsidizing the Forest Service users at Lake Alpine and Bear Valley Mountain Resort (nor vice versa).

5. The Forest Service is exempt from bonds, so the District can't use a bond to raise the upfront money because only the Bear Valley users would be paying off the bond.
6. The District can't postpone the increase because the mandated programs must be implemented immediately this summer, incurring engineering and construction costs.
7. The District has run its reserve down dangerously low, so the reserve can't be used to cushion the blow of the increase. In fact, the District must build its reserve back up over the next few years.

The basic rate for a single family equivalent unit went from \$36 a month to \$56.

EJ

District running out of capacity, will try again for discharge permit

At its January 2003 meeting, the Bear Valley Water District Board heard a report from their engineer, Neal Calwell, that they only have capacity for 50 more hookups. The board tentatively awarded 21 of those hookups to the Pine Tree Village condo project.

At its February 2003 meeting, the Board voted to ratify the award of 21 hookups to Pine Tree Village. The project must pay for the hookups within 6 months whether they start construction or not, and they must use them within two years or the Board can take them back (after refunding the hookup fees). The Board also voted to try again for an NPDES permit from the state. This discharge permit would allow occasional releases of treated effluent into Bloods Creek and down into the Stanislaus River. The District just missed getting a permit in 2000 when a technical error in drafting the application confused the State Board members, resulting in a tie vote and no permit.

The Board voted to approve \$87,000 for Eco-Logic engineering firm to prepare a new application. Over half of the cost goes to testing samples from the effluent reservoir and Bloods Creek.

EJ

District Resubmits Application for Discharge Permit

Engineer Neal Calwell told the District Board at their June 2004 meeting that he has submitted a new NPDES discharge permit application. If the Regional Water Quality Control Board grants the permit, it would give the District more capacity headroom. Calwell said the Control Board staff has 30 days to decide whether the application is technically adequate. If it is, it would be set for a hearing with the Control Board. Calwell says it may be a few months before a hearing even if there are no problems with the application.

EJ

District Gets Discharge Permit

At its October 21, 2005 meeting, the Regional Water Quality Control Board voted unanimously to approve the Bear Valley Water District's application for an NPDES discharge permit. Most of the permit conditions were no surprise, but there was one big surprise. When District Board members Dave Ritchie and Brian Neth arrived in Sacramento for the Regional hearing, state staff told them that their application was likely to be rejected unless the District agreed to upgrade from secondary to tertiary treatment. Ritchie and Neth agreed.

The District Board held a special meeting on October 29 to ratify the permit with its conditions. After a 45 minute discussion, the Board voted 4-1 to approve.

The permit solves Bear Valley's sewer capacity problem for now. The District must implement tertiary treatment by October 1, 2008. At the District's November 21 meeting, engineer Neal Calwell will bring preliminary cost figures for a modular tertiary treatment plant, along with the costs of other permit conditions, mostly related to increased monitoring.

The permit will allow the District to release from the storage reservoir when there is danger of overflowing. Releases may occur only when the treated effluent is diluted at least 20 to 1 by snowmelt.
EJ

WATER DISTRICT BOARD PITCHES ASSESSMENT

This article is a summary of what was presented by the BVWD Board. It does not represent an opinion or position taken by BVRI, but rather is intended to further inform the community about what was discussed at the meeting.

At a public workshop on Saturday, December 29, 2007, at the Perry Walther Building, the Bear Valley Water District Board presented a picture of Bear Valley's sewer problem and their proposed solution.

The problem presented is a history of spills from the reservoir which holds treated effluent during the winter until it can be disposed of in the summer. The solution proposed is a tertiary treatment plant which would raise the effluent to a standard allowing legal discharges into Bloods Creek and ultimately into the Stanislaus River.

District Engineer Neal Colwell of EcoLogic explained that, while the District has had occasional spills for many years, the attitude of the state and downstream water users changed in 1999. When the District had an overflow in 2001, the state fined the District \$35,000 and imposed a building moratorium.

The District applied for an NPDES permit which would have made occasional discharges legal under controlled conditions. The Regional Water Quality Control Board turned down the application. The District then leased 40 more acres from the Forest Service to augment the land used for spray disposal of the effluent. EcoLogic estimated that this would solve the problem by allowing the reservoir to be drawn down further every summer. But the estimate was proven wrong in the winter of 2004-5 when heavy snow and a late winter raised the level in the reservoir and delayed the spray disposal. The District had to sandbag the spillway of the reservoir to prevent another discharge.

The District Board has been weighing alternative solutions since the 2001 fine. Plans considered and rejected included roofing the reservoir, raising the height of the reservoir, or buying more land for summer disposal. The Board then decided to try again for the NPDES permit. The Regional Board granted the permit, but with an important proviso: the District would have to raise the treatment standard from secondary to tertiary.

Colwell outlined the estimated cost of building and financing a tertiary plant, \$14,702,000. The Board considered financing options. Due to the high median household income levels in Bear Valley, the community will not qualify for competitive grants. The Board considered a loan, and raised hookup fees from about \$6,000 to about \$15,000. But this would not have brought in enough money up front, since it would have relied on future development which may or may not occur.

The Board settled on an assessment as the fairest mechanism to finance a bond to bring in enough money up front to build the plant. Audience members questioned whether existing ratepayers would be paying more than their fair share to allow future development. Board member Jim Bissell explained that it will cost \$10 million to build a plant to serve just the existing users, while adding \$2 million more would allow for a plant which could handle full buildout. He noted that the assessment would capture money from all parcels in the District, based on both present and potential future use, so that all users would be paying a fair share. The vote on the assessment would be weighted by each parcel's present or future use entitlement. That means that the owners of the parcels master planned for future development

would have enough voted to pass the assessment by themselves.

There was much discussion of the fact that a lot of the water in the reservoir is not sewage from houses, condos, or businesses. Snow that lands on the reservoir, snowmelt that leaks in from around the reservoir, and water that infiltrates the pipes all add to water in the reservoir. Board members explained the ongoing efforts to reduce infiltration, including smoke testing of pipes and manholes, and plugging leaks where found. Responding to a question about conservation, Board President Dave Ritchie said all new construction is required to use low flow plumbing fixtures.

The cost of roofing the reservoir is estimated at \$10 million. Raising the reservoir or putting a wall around the top would be expensive, and adding to the reservoir's capacity would create the problem of finding more land to dispose of the increased pool. And surrounding landowners have declined to discuss the sale of any more land, either for spray disposal or reservoir expansion.

The Board emphasized the fact that the state is now requiring Bear Valley to implement tertiary treatment, regardless of whether any further building occurs.

The Board will continue to take public input before proceeding with steps leading to an assessment vote. The Board assured the audience that they will appreciate any suggestions for alternative solutions. A no-action solution – maintaining the status quo – doesn't seem feasible, since it would result in more spills and heavy fines by the state.

More information can be found at www.ecologic-eng.com/project_links.htm; user name, bvwd, password, tertiary. You may send comments to BVWD@ecologic.com.

EJ

DISTRICT BOARD GETTING HELP

3-08

The Bear Valley Water District Board is getting advice from outside sources. At its February 18 meeting, the Board approved a contract with Bonneau Dickson, an expert on effluent treatment, to do an 80 hour study of the situation, including an opinion on whether tertiary treatment (and the assessment to pay for it) may be avoidable, as well as an appraisal of the predesign for the proposed treatment plant. At its March 17 meeting, the Board was presented with a preliminary report by Mr. Dickson.

Regarding the need for tertiary treatment, Dickson said that the District might be able to avoid the need for tertiary treatment (and the NPDES discharge permit) if it could find ways to dispose of 25 million more gallons of effluent than it can now. He listed ways this might be accomplished while admitting that he was still studying the situation. None of the fixes he listed was new to the District Board. He noted that land disposal would be the best method, something the state has already ordered the Board to use first, and which the Board has been doing all along. There followed a long discussion of ways to maximize land disposal: getting more land (unwillingness of adjacent landowners, and marginal suitability of adjacent land for disposal); more intensive use of existing disposal fields (mostly already used to maximum absorption capacity, according to District Manager Wilbur Thiede). The Board pointed out that even if it were possible to increase land disposal, that would necessitate increasing the capacity of the reservoir which holds the effluent during the winter until the land disposal happens in summer. Dickson mentioned covering the reservoir (estimated \$10 million cost for that) or using aeration and evaporation. Thiede said he can get the reservoir empty, or nearly so, every year. But starting with an empty reservoir doesn't guarantee sufficient storage for a winter which starts early, involves a lot of precipitation, and lasts into June. Dickson asked whether the District could rent treatment facilities for the occasional year when that happens, instead of building a permanent fulltime

plant. The problem with that is timing; the problem occurs in the heart of winter, when getting a rented treatment plant out to the meadow facility and setting it up in the snow would be difficult at best. It's never been done, and no one knows whether it's even feasible.

In the end, the best Dickson could offer for now was to ask the District Engineer, Neal Calwell of EcoLogic, to refine the effluent disposal data, while continuing to look for ways to get rid of 25 million more gallons. Dickson will continue to investigate and render a final report later.

If the tertiary plant is unavoidable, as seems to be the case, a Bear Valley homeowner may be able to get the cost down. Bear Valley's John Mallard is a principal of Clean Filtration Technologies, Inc. (CFT), which specializes in prefiltration used in drinking water treatment plants. His company has developed an improved filter system which they used to build and operate a water plant in Honduras. Mallard sent Jerry Breen and Dave Levin to the District Board's February meeting to show the filter. They told the Board that a preliminary look at the predesign for the tertiary plant suggests that they may be able to achieve the required treatment standards for less money in a smaller facility, using their new technology. Mallard came to the March meeting with a proposal for a \$50,000 contract in which his company would provide a preliminary plant design and associated documents related to state requirements and approvals.

The Board asked Bonneau Dickson for his opinion. Dickson voiced two concerns. First, while the new filters are approved and in use for drinking water treatment in California and elsewhere, they are not yet state certified for treatment of effluent. Second, he wanted to know how the filter system handles algae, which is normally a bigger problem in effluent treatment than in drinking water. Mallard said he was confident that he could get state approval of his system in time to meet the District's deadlines. His engineer Dave Levin explained how their system handles algae and said it would be no problem. Dickson said he could not recommend the CFT system without state approval. But he also noted that "If you can show it will work, you've got a real moneymaker."

After more technical discussion, the District Board voted 4 to 1 to enter into the contract with Mallard's CFT. Dissenting Board member Jim Bissell said he wanted to be conservative, and cited the lack of state approval of CFT's system. The other Board members felt that, while the \$50,000 contract might be a gamble, the upside is a possible savings of a big part of the potential \$14 million tertiary project cost. And the Board felt good about Mallard's commitment to try to help his community. Board members cited the expressed wish of the public to explore alternatives to tertiary (hence the contract with Dickson) as well as ways to reduce the cost of the tertiary project if it turns out to be unavoidable.

EJ

BOARD CONTRACTS WITH CCWD FOR MANAGEMENT SERVICES

The Bear Valley Water District Board has entered into a contract with neighboring Calaveras County Water District. CCWD will provide management services. The Bear Valley Board had been considering hiring its own District Manager, and decided that a contract with CCWD would give a broader range of services and expertise than hiring a single individual. The contract calls for a minimum of one day a month onsite and one day a month offsite plus attendance at the Bear Valley Board's monthly meeting. Beyond the minimum, CCWD will be available for more time up to a maximum of \$60,000 a year. The contract minimum could be as low as \$21,000 a year. CCWD operates a number of water and sewer treatment plants in Calaveras County, and will be able to provide support in areas of management, maintenance, finance, plan check, and grant application and administration.

CCWD's Bill Perley reported to the District Board at their August meeting that he had brought up various CCWD staff people to do an initial assessment of the Bear Valley District's operation. He told

the Board that they are doing a good job. He also reported that he and his staff are looking over the preliminary plans for a tertiary plant, and their initial review suggests that prefiltration, a significant component of the tertiary process, may not be needed. That could mean a significant savings in plant construction and operation.

Consultant Bonneau Dickson also appears to have saved the District some tertiary plant costs. His review of the District's situation suggested that the water balance (the description of effluent quantities handled by the District) used to estimate the size of the tertiary plant were probably too high and should be recalculated. The water balance numbers were indeed recalculated, and the new numbers suggest that the size of tertiary plant needed is smaller than originally thought. This could save up to a million dollars in plant cost.

EJ 9-11-08

BOARD CLOSING IN ON TERTIARY PLANT DESIGN

The Water District Board appears to be close to selecting a tertiary plant design. At their February 23, 2009 meeting, CCWD's Bill Perley told the Board his concerns about the Mallard/CFT plant design: namely, the prefiltration component may not be necessary, and CFT's equipment may suffer from frequent downtime between peak loads. It may also be necessary to build a roof over CFT's modular plant. CFT says they can build a plant to their design for about \$2.6 million. Ancillary costs would bring the total price tag to around \$3.3 million. Perley said he and his staff could put together a proposal for a more conventional design that would cost around \$4 million. The Board directed Perley to meet with Mallard and have him (and CCWD) bring complete enough specifications to the March 16 meeting to allow the Board to pick between CFT's proposal and CCWD's.

The Board discussed how to pay for the plant. CCWD General Manager Dave Andres told the Board about various state and federal loan and grant programs. The federal economic stimulus package offers interesting possibilities as well. The Board asked Andres to pursue all avenues. An assessment district is still a possibility. Its advantage is that it would allow assessment of undeveloped properties, spreading the costs over a wider base. Its disadvantage is the cost of setting up the assessment. If the costs of the plant are recaptured through the user fees, current users would pay a higher amount up front. As new development comes on line, it would be required to "catch up" through hookup fees, at which time the rates should go down for already existing users.

The Board discussed the District Engineer position, now held by EcoLogic. Perley told the Board that he has gradually taken over some of the duties of the District Engineer. He and Andres assured the Board that they could handle everything now done by EcoLogic, and probably for less money. The Board encouraged Perley to accelerate the transition from EcoLogic to CCWD. Although it was not explicitly stated, we can assume that the District will terminate its contract for District Engineer duties with EcoLogic and enter into a new one with CCWD in the near future.

The March 16 meeting may see the District take a big step toward resolving the problems that started in 2000, if they select a tertiary plant design. That will give the District a clearer financial target, and allow the Board to home in on a financing mechanism. It would also make the state happy to know that, after a protracted period of discussions and a deadline extension from the state, the District is ready to move forward.

BOARD PREPARES FOR ELECTION ON RATE INCREASE TO FUND PLANT

At its April 20, 2009 meeting, the District Board voted 3 to 1 to support in concept the plant design from Clean Filtration Technology, based on the successful operation of the pilot plant. Bruce Orvis made the

motion. Phil Davis and Dave Ritchie voted in favor. Jim Bissell voted against, saying the motion wasn't specific enough. Brian Neth was absent. The motion was at least partly symbolic, since it doesn't bind the Board to the CFT design. The Board will continue to look for the best (and cheapest) way to build the tertiary plant the state requires. But it's getting late in the game, and the chances of a viable competing design coming forward are getting slim. The CFT design has a \$2.6 million price tag. Calaveras County Water District submitted a more conventional design with a \$4.1 million price. And the Board has already discarded a design submitted by EcoLogic with a \$12 million price. The motion was a vote of confidence for CFT owner and Bear Valley homeowner John Mallard, whose company has put considerable time and effort into solving Bear Valley's sewer treatment problem. As District Board President Dave Ritchie said, "We want to show the public that we're moving forward."

The Board discussed how to pay for the plant. CCWD's Bill Perley has been exploring various alternatives. He told the Board that a USDA loan is available for up to \$5 million at 5% for 40 years. F&M Bank has offered a \$2.45 million loan which isn't enough, but the Board is still negotiating with them for better terms. Perley has applied for various other funding sources including economic stimulus package money. He noted the possibility that some or all of the funding could come in an outright grant or a no-interest loan. He even mentioned a "negative interest loan", but no one is sure what that means.

Then there's the matter of how to repay a loan. The Board has apparently given up on the lease-purchase option proposed by Mallard, whereby the plant would be financed and built by a consortium of private investors. The problems with that method are that the interest rate would be 8.5 to 9%, and it might need to be paid off with a huge balloon payment in five years. The Board also considered an assessment district, whose main advantage would be that all parcels would be assessed, including parcels as yet undeveloped, thus spreading the cost over a wider base at first. But forming an assessment district is a long and expensive process which would add \$600,000 to the costs.

The Board agreed that the simplest and cheapest way to recapture loan costs would be through a simple rate increase on existing users. Future users would be charged a bigger hookup fee to "catch up" with the existing users, which would then lower the rates for those who had already been paying. The rate increase must be approved by the ratepayers through a Proposition 218 election. The District sends out a notice to ratepayers of the proposed increase. Ratepayers then have 45 days to protest. If half the ratepayers plus one protest, the rate increase fails. Protests may be registered by mail, e-mail, or in person. The Board wants to have the 45 day period end at their June 15 meeting, which means they'll have to send out the notices by May 2. The notices will peg the rate increase at the worst case, to allow for contingencies and cost overruns. But the Board assured us that they will try to hold the costs down as much as possible. Under Prop. 218 rules, the District can levy lower rates than stated in the election without going back for another Prop. 218 election. But if costs exceed the estimates, they'd have to go back to the ratepayers for another election, which they'd like to avoid.

A Bear Valley homeowner asked the Board to rethink the rate structure. Currently, there's an added fee if you have more than two bathrooms. The contention was that more bathrooms don't necessarily generate more sewage. Dave Ritchie said he saw a study showing that bigger houses in resort communities have lower occupancy rates. But rate adjustments based on occupancy rates may be a slippery slope. Owners of Lake Alpine cabins have long contended that they should pay lower sewer rates because of use restrictions on their cabins by the Forest Service. The District has no direct method for measuring effluent from homes and condos. Sewer meters would be expensive to install and monitor. Some homes have water meters, but water usage isn't always a direct measure of sewer output. And as Board member Phil Davis told the homeowner, "If your rates go down, mine go up." The Board asked Bill Perley to look at how other resort communities handle fairness and occupancy issues in billing and report back to the Board. If the Board intends to propose changing the billing structure, they will want to include that in the mailing that's about to go out.

Whether there's still time to get the plant built this year will depend on the results of the election and the requirements of whatever funding source is used. Some funding sources will require public bidding, including drawing up bid specs and publishing them. If that happens, it'll be a lot harder to get the plant done this year, even using CFT's modular design. If the District can avoid the public bid process, CFT might still have time to get the plant done before winter, since the plant is assembled offsite and placed on a pad.

What if the election fails? Bill Perley said the state sent a representative of the Water Resources Control Board to a public meeting of another district which was considering a similar Prop. 218 election. The state representative told the audience in effect, you must approve the rate increase and comply with the state requirements. Otherwise the state will step in and take over the construction project and levy the fees on the ratepayers any way it sees fit. So it's probably better to get it done ourselves.

The Board considered a letter of resignation from EcoLogic as District Engineer. The Board was already heading in the direction of letting EcoLogic go and seeking a new District Engineer, and CCWD has already assumed many of the routine duties of that position. The problem with EcoLogic's letter was that they wanted to make their resignation effective as of last July 8. The District Board was unwilling to let EcoLogic off the hook for anything that happened between then and April 20. The Board voted to accept EcoLogic's resignation, effective April 20, 2009. The Board will seek a new District Engineer, and has already received applications from several firms.

EJ 4-24-09

SEWER SERVICE RATE INCREASE

By Dave Ritchie, President, Bear Valley Water District Board

The Bear Valley Water District has been mandated by the Central Valley Regional Water Quality Control Board (the State) to install a tertiary wastewater treatment plant. The State requires this because the District storage pond has had several uncontrolled overflows of secondary treated wastewater to Bloods Creek and hence to the Stanislaus River. The State will not allow discharges of secondary wastewater to continue. The tertiary plant must be operational by October 1, 2010.

The District has spent several years investigating design parameters, costs, and financing options for this required treatment plant. We have selected a design concept put forth by a Bear Valley resident, John Mallard of Clean Filtration Technologies, Inc., as the most economical way to meet our needs. We have explored several options for financing this project including a lease purchase with private investors, formation of an assessment district with bonding of real property, a bank loan, and a government loan and/or grant. A grant is a very remote possibility. Our most economical choice for the long term is either a bank loan or a government loan.

We approached several banks. One bank, Farmers and Merchants Bank of Lodi, agreed to help us. It gave us a line of credit that has been used to construct the first phase of our project. That first phase is an outfall pipe that allows us to have controlled discharge from our storage pond to Bloods Creek per the State requirements. That line of credit is a bit over \$718,000 and must be paid off or converted to a loan by October 1, 2009. We have had further discussions with F&M Bank and have reached a tentative agreement to roll the current debt into a larger line of credit of \$2,450,000 that will cover the rollover and most of the estimated \$2,600,000 cost of the tertiary plant. This financial arrangement will leave a shortfall of about \$850,000.

We are doing the paperwork for a USDA government loan. It is the only government loan or grant available to us at this time. If this loan application is approved we expect to get a slightly lower interest rate than the F&M Bank offers and have full coverage of our financing needs. This looks promising but

is not a sure thing.

The District has received professional assistance to help us craft a budget and budget projection that meet the requirements of our tentative agreement with F&M Bank. This budget projection requires an immediate service rate increase of 50%. Proposition 218 requires that such a service rate increase have a public hearing. A public hearing will be held on Monday, September 14 at 9am in the PerryWalther Building, Creekside Drive, Bear Valley CA.

Ratepayers have the opportunity to reject a rate increase by filing written protests. If more than 50% of the ratepayers file written protests the rate cannot be increased. Written protests may be mailed to the Bear Valley Water District at P.O. Box 5027, Bear Valley, CA 95223-5027. Written protests may be delivered to the Bear Valley Water District office at 441 Creekside Drive, Bear Valley. Written protests will be accepted at the public hearing. Written protests must be received before the close of the public hearing to be counted.

Failure to build the mandated treatment plant will result in fines when we discharge to the creek. The State may fine us \$10,000 per day plus \$10 per gallon discharged. Each time we discharge the State may also fine us the amount we should have spent to build the plant plus other penalties. These fines would be paid by current ratepayers.

This project is not driven by new development. Even if no new development were to occur, the plant is required because of current use and could not be made smaller. New homes, condos, and commercial properties will pay their fair share of our costs through connection fees and service charges as development occurs.

The Bear Valley Water District asks that you support this rate increase so that we may move ahead.
7-21-09

DISTRICT BOARD EXTENDS PROP. 218 PROTEST PERIOD

At a special meeting called by popular demand at a Bear Valley Residents Inc. Board meeting, on September 6 the Bear Valley Water District Board voted 4-0 to extend the protest period for the Prop. 218 assessment proposal to January 18, 2010, at 9am. This came after a long educational session in a full District conference room. There were many questions and the consensus by the time the motion was made was that the community needs more information. Newest District Board member Jearl Nelson volunteered for a fact-finding mission.

At a meeting of the Bear Valley Residents Inc. Board later that day, the Board appointed its own fact-finding committee consisting of Paul Petersen, Jeff Gouveia, and Barbara Goodrich.
9-11-09

DISTRICT BOARD HEARS ABOUT POSSIBLE ALTERNATIVES

At its October 19 meeting, the Water District Board discussed possible alternatives to the \$2.6 million tertiary plant proposed by Clean Filtration Technology (CFT). District Manager Julio Guerra and CFT owner John Mallard said that it might be possible to get the job done with a less complicated plant. Guerra has been examining effluent test data to see just how much processing is really needed. Mallard pointed out a clause in the NPDES permit which, if relaxed, could allow for a cheaper plant. Guerra pointed out that we are close to attaining tertiary standards except for filtration and disinfection. Mallard and Guerra agreed that we could achieve sufficient disinfection with ultraviolet light provided the

turbidity can be controlled with filtration, and probably a lower level of filtration than was proposed in previous plant designs. Mallard presented a rough proposal for a plant that he said would cost no more than \$1.5 million and possibly less.

The problem will be getting the state to go along with it. A clause in the NPDES permit sets a standard for turbidity in mid-process we are not quite meeting. Guerra said that the real issue should be the quality of the end product to be discharged to Bloods Creek, and turbidity control is just a way of achieving sufficient disinfection at the end of the process. If we can persuade the Regional Board to relax the turbidity parameter just a little while agreeing to meet all the required standards at the end of the process, we should be able to build the cheaper plant.

There's another clause of the NPDES permit at issue. It's been suggested that we should treat only the water we discharge instead of all the water in the storage pond. The problem with that is that the permit allows only a certain window of time for us to discharge, and only allows us to discharge "when necessary". If we wait until the reservoir is full and the creek is full enough to achieve the required dilution factor, we'd have to process 2.5 million gallons a day to discharge. That would require a plant 10 times the capacity of what's been proposed so far, although lacking the most of the footprint of a complete plant. What we have not yet fully analyzed is whether this discharge would require the filtration component; if it doesn't, Guerra's concept of a "virtual tertiary" plant might work with ultraviolet disinfection alone. Guerra noted that at least one other district has a permit which allows the start of discharges when their storage pond is only two-thirds full, rather than waiting until it's full. If we could start discharges before the reservoir is full, we could spread the discharges over a longer period and reduce the size of the required plant in the treatment-prior-to-discharge option..

Guerra was directed to meet with Ken Landau of the Regional Board staff and discuss adjusting our permit. And perhaps the first order of business is getting an extension of the permit deadline which requires us to have a working tertiary plant ("...or equivalent treatment provided..") by October, 2010. The District must submit a report to the Regional Board by March, outlining how we propose to meet that deadline. This report is an application for NPDES permit renewal and is called a "Report of Waste Discharge", which specifies how the District will comply with the new permit. If the Regional Board doesn't grant the extension, the Water District will have to decide on how to proceed by midwinter.

As for how to pay for the plant, District Engineer Gary Ghio discussed the requirements for a USDA loan. He said the USDA would prefer that we use an assessment district which includes all parcels in the district rather than just the current ratepayers. Guerra noted that this isn't necessarily a firm condition. Using an assessment district instead of the Prop. 218/ratepayer mechanism would spread the cost over more parcels, but there's a catch. The Forest Service, one of the biggest customers of the Water District, is exempt from the bonding mechanism of the assessment district, so an alternative payment method must be arrived at. As it happens, the Water District is negotiating a new overall service agreement with the Forest Service, so it may be possible to get around the bond exemption by some other mechanism incorporated into the new service agreement. A negotiating chip will be a 40 acre parcel the USFS now leases to the Water District for spray dispersal. The lease expires in 2011; the District would like to keep using it, while the Forest Service has said it would rather not renew the lease.

10-20-09

STATE REP ATTENDS BVWD MEETING

Ken Landau, Assistant Director of the Central Valley Regional Water Quality Control Board, spoke at a public meeting of the Bear Valley Water District on November 16 at the Perry Walther Building. Landau is the chief liaison between the Regional Board and the Water District.

Julio Guerra, General Manager of the District, opened with a presentation on the history of the NPDES permit and what alternatives he is exploring. The District plans to post a version of this presentation on their website at www.bearvalleywater.org. Guerra said he has known and worked with Landau for at least 15 years.

Guerra said he is gathering information, and filling in gaps in the data. There's only one data point for the June 2000 outflow, and it showed a very low amount of contaminants, which could mean we don't need a new plant. Possible alternatives for compliance with the NPDES permit include:

- * Unique, site-specific, natural and system design factors, including water quality as currently produced by the BVWD system were not reviewed as a potential option. If feasible, this would likely provide the least expensive resolution.

(Guerra explained that we are already very close to compliance with permit requirements, but he needs more data and more testing to determine just how close we are, and for that he needs more time in the form of an extension of the current October 2010 deadline.)

- * Acquisition of enough spray field land to accommodate 1-in-100-year precipitation, thereby eliminating the need for NPDES permit.

(In other words, if we can dispose of the effluent without having to discharge, we don't need the NPDES permit and we don't need tertiary treatment. District Board President Dave Ritchie noted that if we get more land for spray dispersal, we also need to expand the reservoir capacity.)

- * Investigating applicability of stand-alone Ultraviolet Treatment (UV), with carbon filtration if required, to be used only when discharging to surface waters; likely price tag less than \$1 million, with low O&M as such discharges would be infrequent

- * Investigate applicability of Carbon/UV system to be located between treatment pond and storage reservoir; lower capital cost but higher O&M costs.

- * Stand-alone tertiary facility as pilot-tested, if reuse project and sponsor can be located; \$2.6 million projected pre-financing cost likely lower than actual, uncertain O&M costs, uncertain reliability.

(The CFT plant proposal produces water of a higher quality than required in the permit. This option would require finding takers for the water.)

- * Complete membrane bioreactor plant, prefinancing cost in \$5-7 million range, uncertain O&M at this time, but guaranteed price and guaranteed performance to meet conventional NPDES standards.

(Aquatec has submitted a preliminary proposal for this.)

- * Any option selected will have to incorporate financing of the \$800,000 loan on the outfall project, and the approximately \$100,000 each needed for chlorine contact tank and pump station flood control projects.

Landau then addressed the audience. He explained how his agency governs operations of sewage treatment plants, and how the conditions for an NPDES permit are derived. He said that effluent discharge to a stream is more carefully restricted than to land. In 2005 the District applied for a permit with secondary treatment. But the downstream users, the State Health Department, and the Regional staff felt that greater disinfection was needed to combat pathogens, and the permit was granted with tertiary requirement.

He left the door open, however, for changes to the permit. Responding to a question from District Board member Jim Bissell about the state's "no backsliding" policy, he said that some permit conditions can be relaxed if, for example, mistakes were made in drafting the permit or new information turns up. He said some permit deadlines can be extended, like the October 2010 requirement for a working tertiary plant, if the District presents a credible action plan describing what the District plans to do about the tertiary requirement and about financing the project. He said some permit conditions and deadlines come from Federal mandates and can't be relaxed, like the requirement to reduce copper in the effluent, although the Region has some discretion there in how it enforces the requirements.

BVRI Board member Ron Rossi told Landau that the homeowners' association supports an extension of the deadline with a redrafting of the permit. He said BVRI supports Guerra and believes he will come up with a workable solution. And he assured Landau that the community will support an appropriate solution.

Later that day, the District Board held its regular meeting. The Board discussed how to honor Bruce Orvis, who leaves the Board in December after nearly 40 years of service there.

The Board voted to proceed with a project for a large tank to increase the contact time between effluent and chlorine. The tank itself will cost about \$40,000; total cost with installation should be in the \$80-100,000 range. Guerra determined the need for the project when he examined current system design and found problems with it and with testing procedures which were giving false results. District Engineer Gary Ghio said the tank was the cheapest way to address the problem. The tank may be rendered obsolete by the tertiary solution, but Guerra said it may be incorporated into whatever solution is used there. It's too soon to tell. In any case, we are technically out of compliance with state conditions for disinfection and must address that immediately.

Gary Ghio told the Board that the USDA loan will continue to be available, so we don't need to worry about a deadline there.

The Board discussed rethinking the rate structure. Board President Ritchie noted that 85-90% of District costs are unrelated to effluent output of each user and suggested consideration of a flat rate capped at 6 units. The board discussed using water meter figures as a basis for sewer rates, but not all users in the District have water meters. The Board directed Ghio to come back to the next meeting with an analysis of alternatives.

The Board discussed a Brown Act training session. The Board also discussed how to get more information out to the ratepayers.

11-20-09

BVWD DISCUSSES CAPACITY

At their February 15 meeting, the Bear Valley Water District Board discussed the cloudy issue of how much sewer capacity the District has now. The answer seems to be, we're not sure.

Previous calculations on capacity were done by ECO:LOGIC, which acted as District Engineer and de facto District Manager until the District contracted with Calaveras County Water District. District Manager Julio Guerra told the Board "When ECO:LOGIC left, they told us we'd have to do some

validation of their work." This is proving to be an understatement.

Since Guerra came on board and the District hired Gary Ghio as District Engineer, they've found many problems with what ECO:LOGIC left behind. They have identified problems with the District's monitoring techniques, which are being corrected. One problem is measurement of the flow in Bloods Creek. Whether and how much we can discharge to Bloods Creek depends on how much water is in the creek. But Guerra said ECO:LOGIC's formula was only good to a point, to 60% of the District's authorized flow. ECO:LOGIC's assumptions and calculations were based on a study conducted in 2003 and were not correlated to the NPDES permit which was issued in 2005.

The Board voted to approve a \$20,000 contract with Balance Hydrologics, a specialist in stream flow measurement, to address this aspect of the problem and give us some reliable stream flow numbers.

Gary Ghio told the Board that he has made a tentative calculation of present sewer capacity - we have capacity for 27 more units. He and Guerra went on to explain that this is far from a final number because there are many variables to pin down, including the assimilative capacity of Bloods Creeks which the Balance project will help clarify, as well as some assumptions that are part of official District design standards.

Two of the assumptions are occupancy rate and usage rate. The Board can pick an occupancy rate as a starting assumption for calculations. ECO:LOGIC assumed a rate of 32 to 34%. For usage rate, ECO:LOGIC sometimes used the circa 1981 District standard of 300 gallons a day as an assumed output per residence. Ghio said this number is probably high, and Calaveras County Water District uses 195. Actual usage numbers suggest that the current usage rate is under 100 gallons. But the numbers on occupancy and usage can change, and the Board will have to pick numbers that are both realistic and conservative upon which to base future capacity calculations.

Guerra said that the simplest way to add capacity is to add sprayfield for effluent dispersal. The Forest Service has said they will not renew the lease of a 40 acre parcel used for dispersal. But Guerra also said that the Forest Service is open to restructuring that lease and another 40 acre lease to eliminate unuseable land in both parcels, to end up with a lease on a smaller but more efficient area. Guerra said after the meeting that current calculations show that another 90 acres of sprayfield would give the District headroom for future capacity.

Guerra reported on a meeting he and Ghio had with ECO:LOGIC to discuss problems with the firm's work and possible reimbursement to the District. ECO:LOGIC didn't seem eager to admit mistakes or make concessions. The Board discussed possible legal action against ECO:LOGIC; the consensus was to investigate further before deciding.

The Board looked at a proposal from Ghio to address the problem of flooding at the treatment plant's main pump station. Ghio's design would put a 4 foot barrier around the plant at a cost of \$196,000. At the insistence of Board member Phill Coffman, Ghio was directed to come back with a few more alternatives for comparison.

At the conclusion of the meeting, board President Dave Ritchie showed a plaque and a framed resolution of appreciation for Bruce Orvis, to be presented to Orvis the following day at a meeting of the Lake Alpine Water Company.

EJ 2-16-10

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