

JOSHUA BASIN WATER DISTRICT
Minutes of the
REGULAR MEETING OF THE BOARD OF DIRECTORS
August 3, 2011

1. **CALL TO ORDER: 7:00 PM**

2. **PLEDGE OF ALLEGIANCE**

3. **DETERMINATION OF QUORUM:**

Bill Long	Present
Mickey Luckman	Present
Michael Luhrs	Present
Mike Reynolds	Present
Gary Wilson	Present

STAFF PRESENT:

Joe Guzzetta, General Manager
Ben Ruffner, Accountant
Keith Faul, GIS Coordinator
Randy Mayes, Senior Administrative Assistant

CONSULTANTS PRESENT:

Gil Granito, District Counsel
Kathleen Radnich, Public Outreach Consultant

GUESTS 18

4. **APPROVAL OF AGENDA**

MSC Long/Reynolds 5/0 to approve the Agenda for the August 3, 2011 Regular Meeting of the Board of Directors.

5. **PUBLIC COMMENT**

Janet Tucker, ratepayer, commented on Director Luhrs' prior request for information. She stated her frustration with the director's refusal to pay for requested materials and the inevitable financial burden that is passed onto the community.

Fred Klintworth, ratepayer, commented on Director Luhrs' recent absence from two prior meetings. He went on to ask Director Luhrs what the role of a Director is, how one shows leadership, and how the director's position benefits the ratepayers of JBWD.

Barbara Delph, ratepayer, recalled that Director Luhrs frequently brings up discrepancies of behavior with fellow board members. She went on to quote several points from the *Board of Directors Best Practices* and concluded that in her review she found no missteps with fellow directors, but rather within director Luhrs himself.

6. **CONSENT CALENDAR**

MSC Long/Luhrs 5/0 to approve the minutes of the Regular Board Meeting of July 20, 2011 and to approve the financial report for June 2011.

7. **PRESENTATION BY UNITED STATES GEOLOGICAL SURVEY (USGS)**

General Manager Guzzetta introduced Peter Martin of USGS who gave the report. The major findings are that the ground water basin is currently in an overdraft condition. If you continue to do so you will experience

one foot of water decline per year. In other words there is more pumpage than natural recharge to the groundwater system. One of the main sources of recharge is the septic tank effluent that's good; however, it is bad in that it has high nitrate concentrations. So that water is able to make it to the aquifer it becomes a source for recharge, but it also increases the nitrate load and based off of projections it will cause nitrate concentrations at much of the groundwater basin to be above the drinking water standard of 45 mg/L. So the water would have to be blended with water from Copper Mountain or other areas of the basin that have low nitrate concentrations. If you have artificial recharge, the benefit would be that it would reduce the water level decline and result in water level recovery. Instead of water levels dropping one foot a year they will actually increase and you will add water to the bank. You would be creating a storage reservoir that could be utilized during drought conditions when there is not available surface water. If you put water in the bank it will help future generations because you will have that increase water. Another advantage of recharge is that it has low nitrate concentrations. So by adding the water you would essentially dilute the high nitrate concentration that has been added from the septic tank effluent. So in your main production wells instead of being above the drinking water standard through artificial recharge you would be below the water drinking standard making potable water because of diluting it with zero nitrates. And then the tools we developed we can then use to predict in the future what's going to happen with new growth. So if you continue no growth, we have done those scenarios. If you have proposed 2% growth, where are you going to start seeing where your problems would be of increased nitrates, where will you see decrease of water levels. So that is the advantage of having a model that we have developed becomes a tool that you can do to predict the future and help you effectively manage your valuable groundwater resource.

Mr. Martin answered questions from the Board and public with the following information:

What will happen to salt deposits in the upper layer with recharge: There will be an initial first flush but because it represents a small amount compared to the quantity of water that recharged it will get diluted out.

Regarding: Subsidence potential without recharge: The sands and gravels in JBWD are very old, less compactable, and probably not subject to subsidence, which usually occurs in areas with clay which compacts as it is de-watered.

Regarding: Impact of salts from the State Water Project: When there is water available from state water there is relatively low salt issues. It's during drought conditions where you get higher chloride. So the salt concentration for the state water is low, around 200 milligram per liter which is similar to the native ground water, in comparison with Colorado River water which may be 1,000 milligram per liter.

Regarding: Impact of nitrates from the Joshua Tree Community Center and apartments near proposed recharge ponds: Those nitrates were considered in the model. Since Joshua Tree is a large basin, water levels will only rise about 40 feet and the water levels don't go up enough to entrain enough nitrates to create a significant increase.

Regarding: The rate of infiltration at the proposed ponds: Instruments will be there to monitor the rate. It is expected to be around 70 feet per day which is a very high rate.

Regarding how de-nitrification works: In an anaerobic, with lack of oxygen, bacteria will use the nitrate and convert it to nitrogen gas.

Regarding: impacts of new septic system versus older ones: Nitrates from older septic systems will reach the aquifer sooner than from newer systems. One management scenario could be to put treatment facilities in older parts of the community, or areas with greater density.

Regarding: Impacts of organic materials from the State Water Project: Organic material will be filtered out by the fine grain materials at the site. Hi-Desert Water District's recharge site has not shown an increase in dissolved organic carbon in the nearby wells.

Regarding: Potential for caliche at the recharge site: An auger rig drilled to 100 feet, which showed no caliche.

Regarding: Caliche at sites 800 to 1,000 feet from the proposed ponds: The recharge site is more of a stream channel where caliche hasn't had time to build up away from natural recharge. A caliche plateau would be expected further away from the stream channel.

Regarding: Infiltration rate of 70 feet per day in comparison with a much lower septic infiltration rate and an estimate of nitrates reaching water within 25 years: The twenty-five years is an average based on location and thickness of materials. The reason for a difference in infiltration rate between the JTUZ-1 and JTUZ-4 is the different materials. The materials at JTUZ-1 are the alluvial fan materials; down at JTUZ-4 there are actually stream channel deposits without soil build up. Soil layers are what cause the spreading on the alluvial fan because sometimes the stream is going to the left and at other times the right.

Regarding: sampling from Well 15: USGS took samples until about four years ago and relies on Joshua Basin Water District for nitrate levels. When the wells were first placed, USGS looked for different trace metals and isotopes, etc.

Regarding: Nitrate levels south of the fault: Nitrates are measured from the wells. The levels of the nitrates are expected to be higher where they are due to housing. The model expects to see increases in the future from newer housing.

Regarding need for treatment for nitrates with recharge: Wells may need to be placed closer to the recharge locations, or water may need to be blended from Copper Mountain basin, but the wells that are adjacent to the proposed recharge grounds will not have to be treated. Without artificial recharge nitrates will exceed the drinking water standard. With recharge they won't.

Regarding: The premise that septage infiltrates faster once the ground is saturated: The desert has about a 2% moisture content so it's very dry. The first wetting front takes much longer than subsequent, because void spaces have been filled, which causes unsaturated hydraulic conductivity to increase as it related to the moisture content. The more moisture in the soil the more rapidly the water will move.

Regarding: The maximum housing density where the septic tank would not affect the groundwater: Septage from areas with less density will infiltrate slower than those with higher density due to moisture content difference. Different models are being run to provide an answer in the final report.

Barbara Delph, ratepayer, commented that this report confirms that recharge is necessary both for water quality and water in general, and is not a "growth" issue.

Regarding quantity and quality of water: There is a lot of water in storage, but the community needs to decide how to manage it – determine should that be my water, my kids' water, or their kids' water.

Jill (no last name given) asked if there is a way, other than a centralized sewage plant, to deal with these nitrate problems onsite. She was advised that package treatment plants such as required in JBWD's wastewater treatment strategy, do have denitrification; the problem with that is the management of them. There is no way to treat nitrates at an individual house. There is no chemical that you could put in to mitigate the situation. Pumping of a septic tank is good to keep leach fields from getting fouled up with oil and grease, but most of the nitrates are not being retained in the septic tank.

Karen Tracy of Joshua Tree asked about the construction of the paramaters for modeling and in particular the hydrologic flow numbers. Numbers used were much lower than our recharge numbers out here; what was that based on? Cores were collected from the drilling site and lab analyses were run on those cores to get the unsaturated hydraulic conductivity. Grain size was used to come up with the properties. Infiltration rates are just representative of the upper materials; the upper three to five feet, so using infiltromers is not representative of the total profile.

Steven Whitman of Joshua Tree asked when nitrates would exceed the standard with no recharge, and at that

point if we start blending with copper mountain mesa water how many years until we draw down copper mountain to the same level as the current aquifer we are using now. Right now the upper shallow aquifer system is above the drinking water standard. The model projections show about twenty years both in this area the combined water from the upper aquifer would be above the drinking water standard. Well water is going to be a combination of all the aquifers that are perforated opposite. Another management strategy could be to drill wells and not perforate in the upper system; put casing on them and pump from the lower system. So that would give you lower specific capacity; you get more draw down for the same amount of water pumped, but you would have less direct nitrate. The nitrates are coming from the top down, so you will see the highest concentration right at the water table. So if you didn't perforate that then the nitrate will not come directly into the well it has to move down directly into the flow system. Eventually, it will get there but it could delay doing something. So that is a management alternative. You have a lot of management alternatives. The blending scenario has not been modeled.

Al Marquez, ratepayer, asked about the hydraulic region Colorado river bulletin 118 that was revised in 2004 and why there are different estimates of the amount of ground water available. It was clarified that there is a lot of water but that it is more difficult and costly to extract at deeper levels. The whole storage thing becomes an issue. It was also noted that some estimates came from a study conducted by individuals using a geologist license fraudulently.

Jill (no last name) asked about the ability to capture rain during monsoons. The problem with these storms is they have a lot of sediment if you put up a temporary dam. What happens is you get these flows which have a lot of sediment in them; it fills them up and there is a cost for removing that. So some options are taking water when it is really wet and let's say it goes out on the lake bed. You could take that water and pump it back and artificially recharge it in ponds. It was clarified that doing so would require removing a great deal of sediment and pumping water back to a recharge site.

It was confirmed that Well #10 is operational and that samples were taken while it was operational.

Mike McBride, Director from Bighorn-Desert View Water Agency, asked if the bacterium that converts the nitrogen to nitrogen gas to the consumption of the oxygen on the NO₃ is aerobic and Heterotrophic bacteria or Nitrosomic. It is anaerobic and can be either Heterotrophic or Nitrosomic and is naturally-occurring.

8. BOARD OF DIRECTORS TO CONSIDER APPROVING RESOLUTION #11-873 FIXING THE RATE OF TAXATION WITHIN ID#2

Accountant Ben Ruffner presented the staff report.

MSC Reynolds/Long 5/0 to approve Resolution #11-873 fixing the rate of taxation within ID#2; with the understanding that there is a potential of change in the actual data.

9. CAPITAL PROJECTS FOR 2011-2012 AND 2012-2013

This item was continued to the next meeting.

10. DONATION OF SCRAP WELL CASINGS FOR 29 PALMS PISTOL & RIFLE CLUB

GM Guzzetta presented the staff report. A brief discussion ensued, and the following action was taken:

MSC Long/Reynolds 5/0 to approve staff recommendation to declare as surplus three six-inch 20-foot well casings and authorize transfer to the 29 Palms Pistol & Rifle Club.

11. PROJECT PRIORITY LIST

There was no discussion.

12. COMMITTEE REPORTS:

- A. **Public Information Committee: Kathleen Radnich, Public Outreach Consultant:** Ms. Radnich reported that the public information committee meeting is next Monday 1 p.m. at the District. Items to be discussed include the website, public outreach issues, all water district convergence in the fall. The District and Rain Bird are sponsoring a landscape irrigation workshop on August 31, from 3-5 p.m. at the J.T. Community Center. The public education theme this month at the local farmers market is on aquifers.
- B. **Ad Hoc General Manager Performance Facilitated Review Process: Vice President Reynolds and Director Long:** Director Long stated a proposal should be made available by the next meeting.
- C. **Ad Hoc Pipeline Replacement Funding Committee: Director Luhrs and Director Wilson:** GM Guzzetta reported that this item is part of the capital projects list and can be accepted as done.

13 PUBLIC COMMENT

None.

14. GENERAL MANAGER REPORT

GM Guzzetta reported that he is authorizing an additional payment of \$4,300 to AToM Engineering for the D2-E1 booster Pumps based on additional documentation they have provided justifying some of the project delay. This has been evaluated and recommended by the District Engineer.

15. DIRECTORS COMMENTS/REPORTS

There were no Director comments or reports.

16. CLOSED SESSION

A. Closed Session to confer with Legal Counsel on existing litigation pursuant to subdivision (a) of Government Code Section 54956.9. (Re Joshua Basin Water District v. Robert Ellis, San Bernardino Superior Court - Joshua Tree District, Case No. CIVMS 900168).

B. Closed Session to confer with Legal Counsel on existing litigation pursuant to subdivision (a) of Government Code Section 54956.9. (Re Joshua Basin Water District v. Ironhead LLC a California Limited Liability Company, Praxedes Beard and Does 1 – 10 inclusive, San Bernardino Superior Court - Joshua Tree District, Case No. CIVMS 1100087).

President Luckman called a five minute recess at 9:00 pm; the meeting resumed in closed session at 9:05 pm. Open session meeting resumed at 9:18 pm.

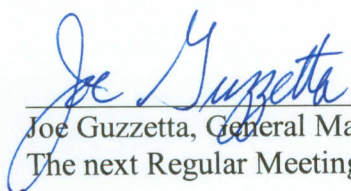
17. REPORT ON CLOSED SESSION ITEMS

The Board of Directors consulted with legal counsel on Closed Session Items A and B. Director Luhrs did not participate in Closed Session Item A not due to a conflict of interest but rather because he previously engaged in several conversations with Dr. Ellis. No reportable action was taken during the closed session discussions.

18. ADJOURNMENT 9:20 PM

MSC Reynolds/Long 5/0 to adjourn the August 3, 2011 Regular Meeting of the Board of Directors.

Respectfully submitted;



Joe Guzzetta, General Manager

The next Regular Meeting of the Board of Directors is scheduled for Wednesday August 17, 2011 at 7:00 pm.