

PINETOP-LAKESIDE SANITARY DISTRICT

2600 W. ALISA LN. * LAKESIDE, AZ 85929 * PHONE (928) 368-5370 * FAX (928) 368-6039

**SPECIAL SESSION
MINUTES
May 10, 2019**

1. CALL TO ORDER

Board Chairman Whittle called the meeting to order at approximately 5:08 PM.

2. PLEDGE

Board Chairman Whittle led the Board and Staff in the Pledge of Allegiance.

3. ROLL CALL OF BOARD MEMBERS

Present were: Neal Whittle, Board Chairman; Patrick B. Place, Board Vice-Chairman; Christopher C. Kengla, Board Secretary; Paul W. Meier, Board Member and Diana W. Butler, Board Member. Staff Members present were; David J. Smith, District Manager, Mark Heberer, Finance Manager and Linda Lionberger, Executive Assistant.

Excused: William Whittington, Legal Counsel for the Governing Board.

4. BUSINESS

Discussion consideration and possible action regarding a Strategic Planning Session – Treatment Plant.

The District Manager discussed looking at the Treatment Plant long term; some items were easier to resolve with rebuilding and replacement of equipment. He gave an example of the Clarifiers could be replaced with new technology. He mentioned the membranes, which could be costly. The District Manager then discussed what he understood was the equipment on top of the hill, the biosolids handling was what a Wastewater Treatment Plant was all about. The District Manager passed out a handout to the Board, which was a chart of the Average Weekly biosolids production. He explained Staff wastes the sludge, at the bottom of the Clarifiers the sludge was at half to one percent of solids the remaining was water. The solids are pumped to the top of the hill to a tank with a capacity of approximately 35k gallons and it was supernated. The

sludge sits up there and the solids settle out until you have a clear liquid, then you suck off the liquid. It thickens some more to approximately two percent it is then pumped to the belt filter press. Every day the Staff wastes the sludge and on the weekend the weekend employee supernates the sludge reducing as much water as possible. The next day they waste as much as they can and then it goes back down to the Plant to be treated and that's the first bottleneck. Wasting is the premier activity of the Treatment Plant in controlling the microorganisms. In the Plant the balance is by wasting the sludge. Staff wastes anywhere from 50k to 80k gallons a day, which means Staff wastes the sludge through the belt filter press.

Board Member Meier asked the District Manager if Staff was pumping out of the bottom of the belt filter press. The District Manager responded to Board Member Meier that was correct.

The District Manager stated Staff takes the solids out of the tank at maybe one to three percent and then Staff shoots it with polymer. The polymer coagulates, then through the belt filter press and when it's complete should be 12 to 15 percent of solids. The District Manager referenced the chart showing the solids at fifteen percent.

Board Member Meier asked the District Manager then the 15% on the chart was 15% solids 85% water. The District Manager responded to Board Member Meier that was correct.

The District Manager discussed that Staff talks about dry tons and 80k pounds of wasted sludge that has gone through the belt filter press is going to have 68k pounds of water and 12k actual pounds of dry solids. To compost effectively you need to keep it at 40% of solids and 60% of water. If it gets higher than that it's too wet and the microorganisms have a hard time developing the compost that was why Staff adds the amendments to the compost recipe. The paper/cardboard agents are added to get the composting process working right.

Board Chairman Whittle asked the District Manager if Staff was happy with the belt filter press. The District Manager responded to Board Chairman Whittle that Staff was happy with the belt filter press and that it worked out fine. There was hardly any process that would get a better percent other than the centrifuge may get you 30%.

Board Chairman Whittle asked the District Manager if the centrifuge looked like a screen press. The District Manager responded to Board Chairman Whittle that it looked more like a screen press.

Board Vice-Chairman Place stated that there was a press that appeared to look like a giant accordion.

The District Manager stated that was called a plate press and it was a batch process that you fill it squeeze it and all the dry stuff falls out and you load it.

The District Manager stated that a new belt was installed two weeks ago and then Staff discovered four holes in the belt.

Board Member Meier asked the District Manager what caused the holes. The District Manager responded to Board Member Meier that Staff wasn't sure if something had gotten caught in the belts.

The District Manager stated that the belts cost around \$1,700.00 each and Staff is now stocking extra belts.

The District Manager stated that Staff doesn't normally have redundancy and the belt filter press handles what Staff wastes.

The District Manager brought in a sample of sludge that was at 20%, the reason he brought it up was that dealing with the additional volume the additional time was needed to dewater the sludge. He explained the importance of understanding of why the water was a key source in the Plant.

The District Manager explained the land application of sludge and the requirement of having several growing fields, but that was not practical for the District. The key to what Staff does in the Plant was to get to the right moisture content to compost if that was what the District wanted to continue doing.

Board Member Meier asked the District Manager since the District was in the compost business, if you get it to 42% and eliminate it to 50% then you don't need as much paper and cardboard for the recipe than what does that do to the volume because of the smaller volume of paper. The District Manager responded to Board Member Meier that he asked Staff what was the recipe today and they put in 1 yard of dewatered sludge, 5 yards of paper and 1 yard of woodchips that would yield 47 cubic yards of dewatered sludge and that gives you approximately 282 yards of material a week or 70 yards per day. The biomass mixer holds approximately 130 yards. Weekly Staff was producing 120 to 150 yards a week.

The District Manager explained then Staff deals with an inappropriate recipe because of the volume of paper/cardboard that was received there is not consistency. Compost has to have the right recipe to be consistent. When you change the ratio's there may not be consistency and then Staff has to redo the compost to get it to the correct consistency.

The process doesn't have consistency, because the community members want their documents in and that was a problem.

Board Member Meier stated at the end of the day the community members concern was that they don't want the sludge going to the landfill, but at the end of the day if the District has processes of getting the sludge at 40% and we don't need all this cardboard, we could continue to compost whatever the process would be. This could be something to look into.

Board Secretary Kengla asked the District Manager that putting the paper/cardboard into the mixer do we have to open the paper and maybe get a shredder for the windrowing process. The District Manager responded to Board Secretary Kengla " yes."

The District Manager explained that getting back to the recipe of consistency and when you read literature regarding compost, you want a carbon to nitrogen ratio, somewhere between 20 and 30 parts of carbon for every 1 part of nitrogen. Staff doesn't measure it and when you get too much carbon it slows down and takes it longer to process.

Board Secretary Kengla stated microorganisms are trying to break down cellulose and nitrogen in the process that is where we are headed.

The District Manager stated that we receive 550 tons from Waste Management and from the bins we are receiving an additional 1/3 from the District's bins, which equals 30%.

Board Member Meier asked the District Manager do we ever run short from the paper/cardboard. The District Manager stated that in the winter time we do run short. We don't need as much paper/cardboard we can handle it. The woodchips are the bulking material for the air through the pile and the paper serves as the carbon source. Out of a ton of sludge 4% is nitrogen (80 lbs) and carbon is about 720 pounds for composting 2400 pounds of carbon is required, 1680 pounds more is needed for the proper ratio.

Board Member Meier stated that his thought earlier their job should be we are going to compost 100% of everything that comes through the Plant. However, if we have found a much more efficient way to do it, we may not be a cardboard recycling plant for the future.

Board Secretary Kengla responded to Board Member Meier that the District was a cardboard recycling Plant.

Board Member Meier stated that we could use what we need and cut back 50%, then present it to the community members, making them aware the District is not cardboard recyclers we are sewer.

Board Chairman Whittle stated that the Town of Pinetop Lakeside was taking over the recycling.

Board Chairman Whittle asked the District Manager what type of materials would be accepted to be shredded, would it be just corrugated cardboard or SOP's the BMC types of shredder materials.

Board Secretary Kengla stated his train of thought was down the road do we need a facility to stockpile the materials to make the composting recipe.

Board Chairman Whittle stated that cardboard was \$37 a ton, which China has been purchasing, this was the only pricing he could get and it should be increasing.

The District Manager stated that at one time we were receiving \$50k worth of cardboard.

Board Chairman Whittle asked the District Manager with shredders on site and compactors the District could go with other technologies. The District Manager responded to Board Chairman Whittle that here was the other deal; the District still receives pallets and plastics. The community members that are bringing their paper/cardboard here to the District are clean. When Staff receives the plastic the compost balls up.

The District Manager stated what he was alluding to was if we just stuck with the community members bringing their paper/cardboard here we receive clean products and the recipe could be the 30 to 1 carbon to nitrogen if the District wants to continue composting. What we receive from Waste Management was sometimes contaminated.

The District Manager discussed in vessel composting was the cleanest way to compost. They are roll offs you mix the materials and then load the roll off and connect an air hose to it and then you monitor them, you don't have the odor as it is filtered. The roll off truck moves it to the pile and lets it mature and this type of composting meets the District's regulatory requirements.

Board Chairman Whittle asked the District Manager if the District would need a turner. The District Manager responded to Board Chairman Whittle "no", in vessel was its own if you could keep the sludge in the biomass mixer for 14 days that would be in vessel, but you can't keep it in there it wasn't big enough. Staff could get close if the sludge was at 45%, if you could keep it in there for 2 weeks that would be in vessel. You put it in something and leave it alone. Windrow is the process of meeting the temperature for 3 days and turning it 5 times.

Board Member Butler asked the District Manager would that be a problem if the temperature drops. The District Manager responded to Board Member Butler “no”. Static aerator piles are insulated with finished compost and then it is moved to somewhere on the floor to cure.

Board Secretary Kengla stated the piles get heated and that’s when you see combustible fires.

Board Member Meier asked the District Manager in vessel composting from what he heard sounds like we could be more efficient with the process then going into the biomass mixer. The District Manager responded to Board Member Meier that he did hear him correctly that in vessel we would need four compactors with the amount of business we do today. If you go from 15% to 30% or 40% how do you go there.

Board Member Meier asked the District Manager what additional equipment or technology would we need on site to improve the process. The District Manager responded to Board Member Meier that a centrifuge is a drum and spins very fast and uses lots of power and could improve it to 35%.

Board Secretary Kengla asked the District Manager going through this dance what was his thoughts. The District Manager responded to Board Secretary Kengla that his thoughts are old fashion drying beds. They are simple technology and the elaborate ones are green houses and they are see through and have blower fans and are computer monitored. The equipment stirs the sludge to break up the crust. That was what makes the most sense, since we have the sun and the dry climate, the sludge wants to equalize with outside humidity.

Board Member Meier asked the District Manager so these green houses are just for drying the sludge. The District Manager responded to Board Member Meier they are just for drying the sludge. There was the Brown Bear Equipment with the snow blower type of equipment that stirs it up. We have a large building 350’ long 100’ wide and it could be used; we could remove the sides for the compost making. If the belt filter press goes down we are out of luck, we do have drying beds that were built in 1980 and when they fill up in 2 days we are out of luck. Staff has to stop wasting and the ditch fills and then the Plant has operational problems.

Board Member Meier asked the District Manager then in this scenario there is room in the building for the drying beds or does something have to be removed. The District Manager responded to Board Member Meier that the footprint of that building if you got rid of what was in there and started from scratch there would be room.

Board Member Meier stated that we have drying beds and sludge down to 40% and someplace else to mix it with the carbon and then we have the compost.

The District Manager responded to Board Member Meier yes we need to decide do we want to in vessel compost or continue static aerator pile the common denominator was with any composting process you build the material for the right recipe, it does matter when you compost, you use the amendments to accomplish the right final product of compost.

The District Manager explained that the District purchases the woodchips approximately once a year because staff screens them and reuses them.

Board Secretary Kengla asked the District Manager what about Navopache Electric do they bring their woodchips here. The District Manager responded to Board Secretary Kengla that they do bring them to the District.

Board Chairman Whittle asked the District Manager if he could show the Board the efficiency of changing technologies, such as the mixer composter, in vessel and windrowing. The District Manager responded to Board Chairman Whittle that he could show the Board the difference in electrical costs. The mixer was 75 hp, the air handlers 10 of them at 5 hp = 50 hp and then you have the bigger air handlers to move air out of the building. Board Chairman Whittle asked the District Manager if the building was metered separately. The District Manager responded to Board Chairman Whittle that the meter was for the Plant. However he did have the Staff install hour meters on the mixer so he knows how many hours it was turning. You have 50 hp on the aerators you have 100 hp of the air moving it from the inside to the outside and that was \$7.50 an hour to run the air \$5.50 an hour to run the mixer and that was based on \$.10 kW. They use to run the mixer 24 hours a day and that was when we were bringing 350 tons of trash a month and now we are bringing in about 40 – 50 tons of cardboard and we are just running the mixer one – two days a week. He estimated that electrical cost was approximately \$30k per year to run the mixer.

Board Secretary Kengla asked the District Manager if you retro fit the green house structure would you still need aerators. The District Manager responded to Board Secretary Kengla that we would need blower fans. The electrical costs would be for air movement to remove moisture from the compost.

The District Manager explained that in his previous wastewater facility they used a concrete pad like a parking lot for the windrowing method. There are other technologies out there some use polymer, drying beds and in 7 to 10 days you are up to 30%.

Board Secretary Kengla stated that there are some environmental tweaks because the District Manager's previous facility had drier climate and farm land available to get rid of the sludge.

Board Member Meier asked the District Manager do you run the sludge into the digester or do we use a different technology. Board Member Meier then stated that the District Manager does a good job for the District and he was looking out for the best way to process the sludge at minimal costs for the District and in his opinion what does the District Manager envision for the future.

Board Secretary Kengla stated to the District Manager we are dancing around and we would like your opinion and vision for the future. It ultimately would be the Board's decision, what did he envision, pouring concrete, drying beds, equipment and/or windrowing.

The District Manager responded to Board Secretary Kengla and Board Member Meier that what he would like to see was a safe, clean environment and operation. What was currently being done was not safe and how the employees do it for 8 hours a day in the current environment amazes him, the floor was slippery and lots of odor.

Board Member Meier asked the District Manager what do you envision as a clean and safe environment. The District Manager responded to Board Member Meier that in vessel composting. Board Member Meier then asked the District Manager then was that what you think would be the best choice. The District Manager responded to Board Member Meier that windrowing takes a lot of space, which the District doesn't have and you have to have specialized equipment.

Board Secretary Kengla stated the equipment was like a large roto-tiller.

Board Member Meier asked the District Manager for in vessel composting with the roll offs would we be pouring a giant concrete slab or lining up the compactors. The District Manager responded to Board Member Meier that the compactors are 40 foot long there would be 8 of them 8 feet wide and they would fit in one part of the composting building. In the existing building we could hook up the aerators. Board Member Meier asked the District Manager if there would be less moisture than the current process. The District Manager responded to Board Member Meier that the moisture would collect and go down a drain to a common header. Board Member Meier then asked the District Manager then the aging process of the building could be slowed down somewhat. The District Manager responded that he would remove the sides of the building.

Board Secretary Kengla stated that it makes sense to take off the sides of the building and that for the green house facility, drafting fans could dry any moisture, the area up here

still has a dry climate. Board Secretary Kengla asked the District Manager we have the eight in vessel composters what was the per unit cost. The District Manager responded to Board Secretary Kengla that he did not know the costs. Board Secretary Kengla stated that the reason he asked that question was because the rotary tube was \$2m.

Board Member Meier asked the District Manager what was the useful life of the mixer. The District Manager responded to Board Member Meier that it was 15 years when it was installed.

The Finance Manager stated that when it was installed by AC Services, with Mr. Hayes and Mr. Hodge as the Management team there was a discussion that the 15 years would be the useful life. The mixer today is in the 16th year, this was the last year for depreciation it will be fully depreciated.

Board Member Meier stated that in reality efficiency and technologies have changed. If we know we're at the end of the useful life and there are processes out there that are efficient, safer and good for the environment why wouldn't we look at these processes and get better at doing what we do.

Board Chairman Whittle stated that perhaps another session should be scheduled once additional information was obtained for the different technologies.

Board Chairman Whittle asked the District Manager to provide information regarding the safety issues, odors if there would be a change in an ADEQ License/Permit. The District Manager responded to Board Chairman Whittle that he would check into the Permits with ADEQ.

Board Secretary Kengla stated that he has been up there and was aware of the odors.

Board Vice-Chairman Place stated that the discussion was the composting facility; he thought that the Plant as a whole was going to be discussed. He asked do you have a bar screen, do you have grit removal are they in good shape are they going to last 10 – 15 years.

The District Manager responded to Board Vice-Chairman Place that the bar screen would last 10 – 15 years. Board Vice-Chairman Place then asked the District Manager could the grit removal process cause the holes in the belt filter press belts. The District Manager responded to Board Vice-Chairman Place that no the grit remover was the second process and the bar screen was installed in 2010. The materials go to the dumpster, the flow goes to the fine screens and then it takes anything out ¼ inch or larger then it goes to the grit removal and then the ditch. Staff was checking to see if there was any grit build up in the

ditch. The District Manager then stated that he received a quote of \$70k to replace the grit remover.

Board Vice-Chairman Place asked the District Manager if we are looking at the future the flows are going to increase are we looking at replacement for the future what are they designed to handle. The District Manager responded to Board Vice-Chairman Place that in 2011 a Parshall Flume was installed to measure the flows, then one 9” was installed that would measure up to 4.5 mgd. Typical you have bar screen removal then the primary clarifier where you pump the solids out 4 to 6 percent, and then you have the treatment whether it was aeration or trickling filters.

Board Member Meier asked the District Manager for clarification of the process that Board Vice-Chairman Place was indicating. The District Manager responded to Board Member Meier that location was part of the process.

Board Vice-Chairman Place stated that after the primary process, then your secondary process and the supernate and then disinfection, which could be done by chlorine or UV light, which was very safe. The solids could be done by composting anaerobic digesting is done with a tank and the solids are keeping at 98 degrees, the sludge is pasteurized and then moved to drying beds. There are centrifuges and several ways to get rid of sludge not necessarily composting. Board Vice-Chairman Place indicated he doesn't want to see tunnel vision for the sludge handling getting hung up on one process.

Board Member Butler stated that we are planning over time, so we need to look at costs as part of the overall plan.

The District Manager stated as Staff we have looked at the grit process the oxidation ditch, bar screen, step screen was as big as it gets any larger would be major construction, the step screen could handle up to 3. Mgd.

Board Vice-Chairman Place asked how much of the area was going to grow over the next ten years.

Board Secretary Kengla and Board Vice-Chairman Place discussed the Plant equipment and compost piles that have had combustible fires.

Board Member Meier stated that the overall treatment updates we have done for the processing in the last several years have improved efficiency. Now we are shifting and there are ancillary parts, could these processes be done in pieces and give the District another 20 years. As a Board that was what we are looking at as we leave the District the replacement and updates last at least another 20 years.

The District Manager responded to Board Member Meier what Board Vice-Chairman Place was discussing was the grit removal, screen costs are not as costly as what was up the hill. With anaerobic digesters there was a lot to be done and also in vessel composting there are costs.

Board Vice-Chairman Place stated that we are looking at things right now we need to look at 10 years down the road and maybe we should have an engineering study done.

The District Manager stated that the District did have an engineering study done approximately 10 years ago and items that were recommended in the report have been replaced. The growth of the District has been less than 1% a year, the flow has decreased and we believe this was largely due to low flow plumbing fixtures being installed. We are at less flow today than 10 years ago.

Board Member Butler stated that the community as a whole hasn't grown.

Board Secretary Kengla stated that when he came on Board we were at 8000 connections and today we are at 8236.

Board Member Butler stated that community growth as a whole has not grown and the School District numbers dropped in 2008 and have never come back.

Board Member Meier stated as Board Chairman Whittle and Board Vice-Chairman Place stated we follow this up in six weeks with another planning session to address different issues as to what our options are, in vessel, anaerobic digester so we can look at costs and accomplish what we need at the best cost.

The District Manager stated even with the anaerobic digester at the end of the day you have do something with the Sludge.

Board Vice-Chairman Place stated the sludge doesn't have to be composted.

The District Manager responded to Board Vice-Chairman Place that what he understands was that the community likes the composting.

Board Vice-Chairman Place stated that Prescott Valley does sludge hauling to the landfill.

The District Manager stated that I have brought this up to the Board in the past. The landfill does want our sludge, we have a truck, and we could haul. The cost was a lot less to haul to the landfills.

Board Vice-Chairman Place stated using sludge was a good way to reclaim gravel pits.

Board Member Meier stated the plus side to hauling was that we would have meetings until midnight.

The Finance Manager stated it was all in how it was presented to the community, composting could be on a small scale or regional scale. Prescott use to bag their compost and now that they have gotten out of composting they are hauling to the landfill, which works to decompose the solid waste.

Board Member Meier stated perhaps we put together our options and that should be in black and white so the community can see it and that would help the landfills.

Board Member Butler stated that whatever we decide we need to address the community members.

Board Secretary Kengla stated that we are doing something green in the community and it has always been that way. We had a switch in District personnel and it has paved the way to this discussion. In the past there has been a lot of resistance.

The District Manager stated that outside testing cost are less when you do haul sludge to the landfill. There are currently costs with the outside Lab testing that is required for the composting facility.

Board Vice-Chairman Place stated to Board Secretary Kengla that the community does like the green and there are community members that like the green dollars in savings.

Board Member Butler stated that we have to sell the landfill and the whole green thing.

Board Member Meier stated that we could look at the options available and possibly continue the in vessel composting and haul sludge to the landfill.

The District Manager and Board discussed the change of the compost recipe from using household solid waste to the paper/cardboard and wood chips.

Board Chairman Whittle asked the Board do we want it at a regular Board Meeting or a Special Board Meeting.

Board Secretary Kengla stated that if costs can be decreased then that would leave monies for other projects in the Plant.

Board Member Meier stated we would need to present it as an Agenda Item that as we are upgrading our existing Plant the next item that cost several dollars has met its useful life and the Board needs to consider other options for the District.

Board Member Butler stated that she wasn't comfortable presenting at a Regular meeting, because the Board hasn't made any decisions on what direction we are going.

The District Manager stated that he could provide the information to the Board.

Board Secretary Kengla stated that it could be done at a public meeting as a discussion only.

The District Manager stated to Board Vice-Chairman Place that when the Engineering Study was done he specifically told them to leave the Composting Facility out of their study. One of the Engineers did a study for Luke Air Force Base and they did compost jet fuel, it wasn't cost effective so they did not purchase a biomass mixer.

Board Vice-Chairman Place stated that he didn't know what Engineering Firms were here but their bid usually includes a public relations person to make a presentation.

The District Manager responded to Board Vice-Chairman Place that there were substantial engineering firms and they did include a public presentation.

The discussion concluded with no action.

5. ADJOURNMENT.

The meeting adjourned at approximately 6:40 PM.

Adopted and approved this 12th Day of June, 2019.

/s/Neal Whittle

Neal Whittle, Board Chairman