Northwest Biosolids Management Association

Roseburg's Path to the Fields

BioFest 2015
Walk the Talk

History

Roseburg Urban Sanitary Authority was formed in 1983 as a consolidation of three Sanitary Sewer Agencies providing service to the area included in the City and the Urban Growth Boundary for the City of Roseburg.

The agencies included the City of Roseburg, North Roseburg Sanitary District and North Umpqua Sanitary District. Both the City and North Roseburg Sanitary District owned and operated separate wastewater treatment plants that had exceeded their design life and capacity.

The formation of one regional Sanitary Authority made it possible to fund a major treatment plant upgrade of the City of Roseburg's treatment plant and abandon the North Roseburg Sanitary District's treatment plant.

The new upgraded plant was a 7.9 MGD Biotower/activated sludge/solids contact treatment plant providing primary, secondary and chlorine treated effluent for discharge into the South Umpqua River.

The plant upgrades were completed in 1987, and it is currently operating with a dry weather flow of approximately 3 MGD.

Background

Roseburg Urban Sanitary Authority (RUSA) has a current service boundary of approximately 10,000 acres with 160 +/_ miles of mainline sewer pipe, 8 lift stations, the treatment plant and a 340 acre Natural Treatment System used to polish and cool the summer effluent, as well as remove phosphorus and nitrogen.

RUSA has land applied the liquid biosolids as a beneficial reuse on agricultural lands since it's formation. The WWTP produces approximately 1,439,210 gallons of Class B liquid biosolids a year.

RUSA currently is operating under an administratively extended 2005 NPDES Permit.

Included in the current permit are all of the Site Authorization Letters issued by the Oregon Department of Environmental Quality to RUSA for approximately 2910 acres. A small percentage of these site are approved for Winter and Summer application with some restrictions. This mix of seasonal and year round sites that RUSA can land apply liquid biosolids on allowed us to field apply most of the year and maintain adequate storage facilities at the WWTP for biosolids.

NPDES PERMIT
Biosolids Management Plan

During the draft period for the 2005 permit, the DEQ Natural Resource Specialist for our section of the Western Region stated that the current Biosolids Management Plan needed to be updated as part of the pending permit renewal.

The project manager for the contract group that operated the WWTP and managed the Biosolids Program for RUSA did not agree with that assertion based on his understanding of the laws, rules and regulations at the time. The state official offered to assist in producing the draft management document to be included in the NPDES Permit, the manager did not reject that offer and an updated plan was drafted. The plan was reviewed, put out to public comment and was approved by the DEQ.

The current Biosolids Management Plan noted over 1000 acres of authorized sites for the land application of biosolids, but then went on to list the 2004 land application sites totaling only 1023 acres.

In April of 2011 the DEQ received two complaints with regard to one of our Winter/Summer sites. This site consisted of 280 acres and was our primary winter application site.

Unfortunately, this site was not specifically listed in the 2004 Biosolids applied list.

CRISIS TIME

Based on the review of the complaints and RUSA's NPDES Permit and Biosolids Management Plan, the Department found RUSA to be in violation of our permit as the site in question was not specifically listed in the 2005 plan. A Warning Letter with Opportunity to Correct was issued in July 2011.

RUSA would not be able to use this critical site until the expired permit was renewed and this site was submitted to the DEQ for reauthorization.

Just a note RUSA currently is still operating on the 2005 administratively extended permit. RUSA also has over 350 acres of new sites that we are waiting to submit for authorization until we receive a new NPDES Permit.

RUSA was now facing the need to store all of our liquid biosolids on site for the year.

So what is the saying " trying to put 10 pounds of spuds in a 5 pound sack". We had a situation.

FAST TRACK TO A SOLUTION

Over the years RUSA had looked at adding dewatered biosolids to our process. We had actually conducted a pilot study utilizing a screw press to process the liquid biosolids with good success.

CH2M conducted an options analysis to establish the best process and dewatering equipment. A screw press located adjacent to the existing aeriation basins with a covered storage building was selected as the preferred alternative.

RUSA issued CH2M the notice to proceed with the design 9 January 2013

RUSA opted to bid the equipment separately from the construction, with bids opening 5 March 2013

The Construction bids were opened 12 June 2013

Construction and installation of owner supplied equipment was scheduled to be completed 15 January 2014

The facility was operational April 2014

The final payment and 100% completion was issued 3 October 2014

PROJECT COSTS

Facility consists of a concrete structure with a metal roof

Equipment room	- 832 square feet
Cake storage	- 3,880 square feet

Options Analysis	- $ 29,563.00
Engineering	- $ 230,058.00
FKC Screw Press	- $ 293,590.00
Facility Construction	- $ 905,877.00
Total Project Cost	- $ 1,459,088.00

Equipment Costs

Used Freightliner/Kuhn Side-Discharge Spreader	- $83,500.00
New Cat 908H2K Wheel Loader	- $87,000.00

Current Program

In 2014 RUSA land applied both liquid and dewatered biosolids:

155.8 acres applied on of 2% liquid biosolids.

Application utilizes a 6000 gallon and 4,500 gallon tanker truck with a splash plate

107.7 acres applied on of 20 – 22% dewatered biosolids.

Application utilizing a Kuhn Side Discharge Spreader .

We plan on continuing to apply both liquid and dewatered biosolids for our customers. We will be encouraging the farmers we serve to accept dewatered biosolids with a goal of shifting toward a majority of cake.

Future Projects:

Improving the cake storage building with two conveyors to move the dewatered biosolids along the length of the building. This will increase the capacity of the building.

We are currently building an Anammox wetland to treat the filtrate from the screw press. This will significantly reduce ammonium discharge in the side stream at our treatment plant.

LESSONS LEARNED

You must “Own” your Biosolids program.

- You must be the author of your Biosolids Management Plan
  - The plan must meet your specific methods and application type.
- You must be diligent with your record keeping.
  - Site Authorization Letters
    - Ownership
    - Owner Acceptance of land application letters
    - Maps
    - Application records
- Work with your Agency’s regional Specialist to ensure you are providing all the necessary documentation
  - Ask questions, keep a running dialog, work together

QUESTIONS