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Iron Enhanced Sand Filter Questions:

Question or Comment: Will it Smell?

Response: If Odors are present in the pond water that is that is pumped from the surface of the pond to the iron sand filtration area, these same odors may be detected in the area around the iron sand filtration system. It should be noted however that the design and operation of the iron sand filtration system will minimize the possibility of this occurring based on the following:

- 1) Most surface water that has an unpleasant odor originates from areas where water is stagnant, trapped below the surface, and due to microbial processes, oxygen levels in the water are depleted. Water directed to this system will be not be taken from these areas. It will be taken from the surface of the pond, near the pond inlet. This water will be generally well oxygenated prior to pumping, and will be further oxygenated as it is pumped and treated by the system, further reducing the potential for unpleasant odors to be perpetuated by the system.
- 2) The sand filter will generally infiltrate the water directed to it within 2 to 8 hours, and then allowed to dry out in-between cycles. As a result, water will only be pooled on the top of the filter intermittently, and it will remain oxygenated. This will further reduce the potential for odors to be created or noticed by residents near the operation of the system.
- 3) An investigation was undertaken to find out if odor problems had been documented as a problem as result of the operation of other similar Iron enhanced sand systems. This research provided virtually no documentation indicating that this was a concern for similar Iron Sand filtration systems. Documentation was however readily available noting common problems with hydrogen sulfide odor associated with the operation of Iron removal systems that are commonly used in well water treatment, a process that is unrelated to this proposed design.

Question or Comment: Unproven technique, don't know if it will work.

Response: The Minnesota Pollution Control Agency has published a Storm water Manual that provides information on how to design, construct, operate and maintain these systems. The manual provides information as well as links to other sources on typical removal efficiencies. The University of Minnesota has also provided extensive documentation on the results of controlled studies it has completed on the design and removal efficiencies for these systems. For purposes of estimating and assigning pollutant removal credits, the Minnesota storm water manual predicts total phosphorus removal of 78% and dissolved phosphorus removal of 60%. Additional information on these systems can be obtained by viewing the Storm water Manual on-line at the Minnesota Pollution Control Agency website.

Question or Comment: Is it dangerous to kids or animals to be around the system.

Response: The elements in the filter consist of washed sand and iron filings. These elements are non-toxic, and are commonly found throughout the state. The City will however discourage use of the areas for purposes other than storm water treatment and will fence the area to discourage other activities on the surface of the filtration area.

Question or Comment: Will it Create Noise?

Response: Very little noise will be created by the system operation. The system will utilize a submersible pump, housed in a concrete manhole with a locked cover. As a result, the pumps operation will be difficult to hear, even when standing next to the manhole. Water flowing out of the pipes and into the filter basins may sound like water flowing out of a hose. It will not be sprayed into the air, so it will be quieter than the operation of a residential sprinkler system.