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June 14, 2010

Mike Stodgell
City of Moran
PO Box 188
Moran, KS 66755

Dear Mike;

As you requested, I conducted a sludge profile of your systems wastewater stabilization ponds on June 8, 2010. A report is enclosed.

We took 20 measurements in the Cell #1 (northwest). The average sludge depth in this cell was 8.4 inches. This cell was being operated at a depth of 42 inches. The loss of capacity due to sludge accumulation is 20 percent. The depth of heavy sludge averaged about 6 inches other than where the influent solids settled out near the inlet.

In Cell #2, the southwest cell, we took 22 measurements. The average sludge depth in this cell was 9.91 inches, with 4 to 6 inches of heavy sludge. This cell was being operated at a depth of 42 inches. The loss of capacity in this cell was 23.59 percent. Again the only heavy sludge was near the inlet pipe where solids settle.

In Cell #3, the northeast cell, we took 24 measurements. The average sludge depth in this cell was 6.58 inches, with less than 4 inches being heavy sludge. This cell was being operated at a depth of 68 inches. There is a 9.68 percent loss of capacity due to sludge accumulation.

I do not believe removal is warranted given the limited amount of heavy sludge in the lagoons. Sludge removal is usually only necessary when a system fails to meet discharge permit limits or when the system has constant odor problems. The odors usually occur when approximately 25 percent of lagoon capacity is lost due to sludge accumulation. Other factors include system design and capacity. I recommend that the system be checked for sludge depth every five (5) years for a comparison to previous results. It is the heavy sludge that should be of concern. Sludge removal projects can be a significant expense and should be budgeted for.

You may want to consider raising the operating level of the first cells to 5 feet. This will allow for more detention time and would bring the percentage of loss for capacity to 17 percent and less. I recommend that your system work to correct the I&I in the collection system.

I did note that your system does appear to have short-circuiting problem due to design of the piping system and how the waste enters the cells. Usually the large cell receives the influent to allow for treatment, then flow to smaller cells after the majority of the waste has been treated and solids settle.

Please call if KRWA can be of any further help or provide additional information.

Sincerely,

Charlie Schwindamann
Wastewater Tech

CS: ejr
Enclosure
C: Phillip Merkel, Mayor
Lori Evans, City Clerk
Richard Thomas, KDHE, Chanute

Cell #1								Cell #3								Top is North	
	8"		4"		8"		8"										
24"	24"	6"	6"	6"	6"	6"	6"	8"	6"	6"	6"	6"	8"	6"	6"	6"	
	10"	6"	6"	6"	6"	6"	8"			6"		6"		6"		6"	
14"	12"	10"	8"	8"	8"	8"	12"		6"	6"	8"	8"	6"	6"	6"	6"	
24"	24"	10"		8"	6"	6"			8"		8"		8"			8"	
6"	6"	8"	8"	8"	8"	8"	8"										

Cell #2