



Documentation for Grease Control
In Lift Station #8
Utilizing:

Micro-Solve[®]
bioremediation

with



PROJECT – Grease Accumulation and Corrosion control

CLIENT – City of Alvin Public Services

LOCATION – City of Alvin, Lift Station #8
2580 Koster Rd



To: Brandon Moody – Utility Superintendent
Antanacio Martes – Sewer Supervisor
Jesse Rodriguez – WWTP Chief Operator

From: Lisa M. Campos – Outside Account Rep. Evergreen Southwest

Re: Grease, odor, and corrosion control

July 26, 2016

I would like to thank each of you the time and energy you have put into our first project. I know each of you are busy and I'm very appreciative of you allowing myself and Evergreen Southwest the opportunity to earn your business. Mr. Moody, thank you for introducing Tano and Jesse and I. Without you this would not have been a possibility. Mr. Martes, I am grateful for you arranging to meet with me for the past 12 weeks. You have taught me a great deal while studying your lift station. Mr. Rodriguez, I'm glad you took time out of your day to give me a tour of your plant. It was neat to be able to see the entire system from the collection lines to pretreatment and aeration basins to the clarifiers to the effluent. As you all know this is my first project and is very dear to me. I've enjoyed each moment to have shared with each of you. **For time's sake, I have inserted new information in bold print. Additionally, direct quotes and experiences are in red.**



Lift Station # 8 - H₂S being released at this lift station with 6" grease cake and heavy corrosion in lift station, floats, and walls.

Feeding into this lift station

Tractor Supply, residential area, and restaurants by one 24" and one 18" inlet.

Scope of Work

Lower grease and corrosion accumulation by utilizing Micro-Solve® to bioremediate solids, grease, and sludge in the lift station. Expected results to lower H₂S in first 3 months and decrease the frequency of quarterly vaccing at the lift station. Data will be gathered utilizing visual site inspections, weekly pictures, and verbal reports while at visit. **Prior to initiation of project complaints from neighboring residents where being reported around Koster Rd. LS#8. Since using Micro-Solve® there have been zero complaints from these residents. Also noted, the initial orodor coming from the LS was a malodorous sewer smell. As you approach the LS now, the aroma is sweet smelling. Tano, Robby Hall, Jordan, and myself have made some observations about the decrease in odor, even as the days have become hotter. Micro-Solve® works on odor by ridding lift station of the anaerobic build-up where H₂S (Hydrogen Sulfide) is bred. Reducing solids, taking care of F.O.G., increasing facultative microorganisms, and decreasing corrosive sewer gases.**

Price of Micro-Solve®, grease, and H₂S Remediation project

Price is to be assumed by Evergreen Southwest until completion of said project. Upon completion, if deemed successful, City of Alvin will assume payment of project. If deemed unsuccessful, there will be no cost to the City of Alvin.

Micro-Solve® Technique at Lift Station #8

One 55 gallon drum of Micro-Solve®, pump, and one GridBee AP500 Air-Powered Mixer System (incudes mixer, air unit, and accessories) will be shipped to Alvin for this 3 month project. Micro-Solve® will be automatically dispensed at 5 Gallons per week from pump and drum. The GridBee AP500 mixer will agitate wastewater by adding oxygen and mixing Micro-Solve®. Meetings with City of Alvin Representative and EGSW Representative will happen on a 1 time per week basis for the first month and continue at a rate of 1 time per every other week for months 2 and 3. An EGSW rep. and a City of Alvin reps. will meet up and observe Micro-Solve® at application site. The idea is to attack the sludge and grease accumulation.

Week 1, 3-17-16**Expected Results**

The 6" grease and sludge layer will become loose and soluble by the end of the 3 month project sending cleaner wastewater through the collections lines leading to the Force Main 3718 feet away. Therefore; reducing the H₂S levels, monthly complaints, and reducing operation and treatment costs.

Noted again per Tano, Robby, Jordan, and Jesse Rodriguez all agree Micro-Solve® have said no complaints have been received since using Micro-Solve®. Additionally; they also agree the 6" grease cake layer has diminished and a huge opening is present where wastewater is clearly visible in the middle of the lift station. Jesse has reported less foam accumulation is being seen at the WWTP. It is noted that he is using "Marc: a bacterial enzyme"; although, Micro-Solve® does have an anti-foaming agent in our solution. I would expect to see better results as time passes in the reduction of foam at the plant. Tano has also said, "In my 30 years in this business, I've never seen anything work like this. I'm excited that your product is doing exactly what you said it would do."

Week 3, 5-19-2016

Week 6, 6-9-2016



Color and texture change.
Micro-Solve® forming tributaries and moving toward the pump on the other side.

You can see grease has diminished significantly.
Lift station has not been vacced out in over 4 months.

Week 12, 7-21-2016



Larger grease chunks are gone, mostly just froth left.

**Quick Summary:**

- **4/28:** SET UP
- **5/5 Wk 1:** cracks or tributaries are being seen
- **5/12 Wk 2:** larger tributaries and color changes (becoming lighter cocoa color)
- **5/19 Wk 3:** Installed the aerator and **reduced MS to 2 gallons/week.**
- **5/26 Wk 4:** Dennis Zajack went in my place.
- **6/2 Wk 5:** skipped due to floods.
- **6/9 Wk 6:** MIDWAY! Great progress still. Large opening to the baffle. Lime green to the corners from the back to the front by baffle at drop zone. Saw waves/rippling under layer all the way to the opposite wall. Patchy dark gray 'couds' are in areas. This is proof that Micro-Solve® is working. This is the multiplied microorganisms at work! **Per Robby, "When I saw this LS it was dark and black with a hard layer all over it. Now, you can see a lot of liquid and it's soft."**
- **6/16 Wk 7:** continuing to rid grease and odor. QUESTION: How did the lines down stream work before and after the application of Micro-Solve®? --site visits are every 2-3 weeks now.
- **6/23 Wk 8:** non-site visit
- **6/30 Wk 9:** Tano is wanting to finish project before reporting. **He said, "If it were up to me I'd like to use it at other locations. Like LS #7. It's very small there and it makes it difficult for our guys to clean and takes a long time for the vac trucks to reach it."**
- **7/7 Wk 10:** non-site visit
- **7/14 Wk 11:** non-site visit due to scheduling
- **7/21 Wk 12:** PROJECT COMPLETION! Cloudy fluffy still large open area. Tano concerned when they took aerator out to pull out rags the open area became smaller. This is due to the aerator creating an air stream in the middle. The grease is soluble with Micro-Solve®. It WILL NOT re-solidify. More debris is in LS maybe from 4th of July remnants reaching lift station?
- *****My suggestion is to up the maintenance dose to 3 gallons/week instead of 2*****
- **Maintenance Cost:** Approximately \$654.60 per month in chemical cost to maintain this area.

The estimations made for the maintenance of the above mentioned area will need to be observed and adjusted periodically. The process for Bioremediation and Grease Control is not an exact science and an increase or decrease in dosage and/or an adjustment to treatment points from the originally



suggested amounts/locations may be recommended. In the end, the City of Alvin's maintenance dosages will be significantly less than the initial "shock dosage" amounts.

Benefits:

- Increased opportunity cost due to eliminating grease related line stoppages
- Bioremediation of fats, oils and grease in the lift station, collection lines, all the way to the WWTP basically creating mini-digesters out in the field
- Significant reduction in jetting and vaccing as it relates to grease
- Reduced wear and tear on pump intakes allowing force main to work efficiently
- Reduction in man-hours spent on cleaning floats, pumps, and valves
- Reduction in sewer gases and replacement cost due to corrosion
- Safer environment for workers and surrounding community
- Reduction in electricity and time treating wastewater
- Reduction in the use of polymers and other chemical needed at the WWTP
- Reduction in drying bed sludge
- Reduces WWTP foam
- Service and rpxperience of EGSW working with your crew on your system.



Remember that Micro-Solve® is NOT an enzyme, a bacteria or a quick fix “Drano” like emulsifier. Micro-Solve® aids in phase oil separation, separating the grease from other solids in the system, making hard grease loose and soluble, releasing bound oxygen and trapped micronutrients. Proteins, fats, carbohydrates, minerals, vitamins and oxygen become better able to be utilized by the microorganisms that already live in the system. This increases the facultative microorganism populations and anaerobic and aerobic populations. All these benefits accelerate the bioremediation process at point of application and downstream and will not re-solidify downstream. This process sends the treatment plant more microorganisms with food that is in a better state to be bioremediated. With regular applications, Micro-Solve® eliminates grease and sludge build-up in the collection and treatment system and will save you money. Micro-Solve® is 100% biodegradable!

Thank you once again for the opportunity to earn your trust and business through this project.

Sincerely,

Lisa M. Campos

Outside Account Representative
P.O. Box 40843, Austin, TX 78704
lisa@egsw.us
214-306-1322