



04-25-2022

City of Hallsville, TX.
P.O. Box 899
Hallsville, TX. 75650

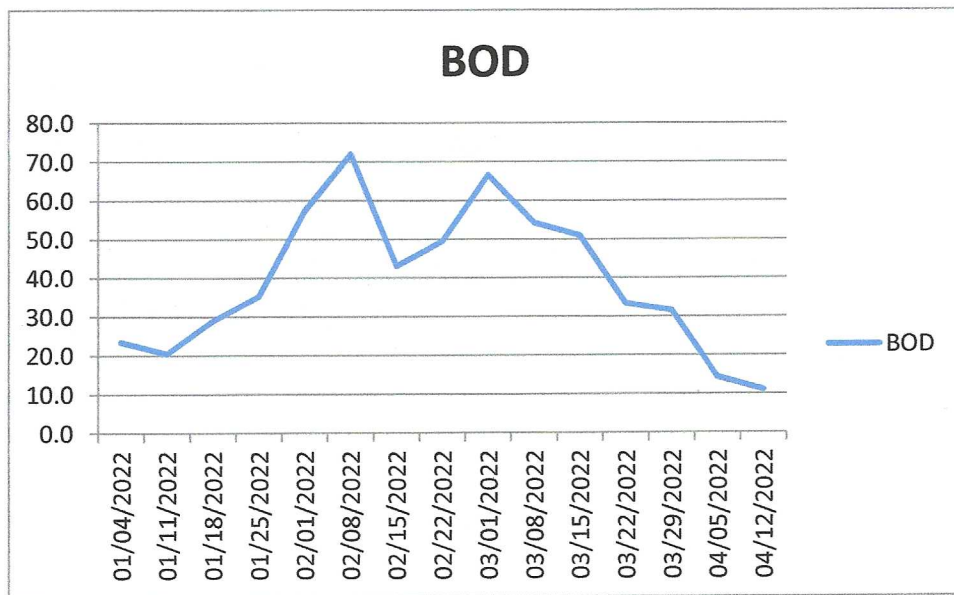
Our WWTP consists of a 5-acre lagoon, multiple rock filter segments and a UV light final stage. We are currently in the process of a construction upgrade adding a magnesium hydroxide system, a racetrack and multiple clarifiers.

The WWTP has been successful in meeting emission requirements during the summer months but struggled during cold weather with ammonia emissions. The struggles have become more frequent and intensifying, resulting in emission concerns and violations during 2021. During the winter of 2021, TSS, BOD, and e-coli limits were busted for the first time. These alarming conditions mandated attention to review possible solutions to the issues.

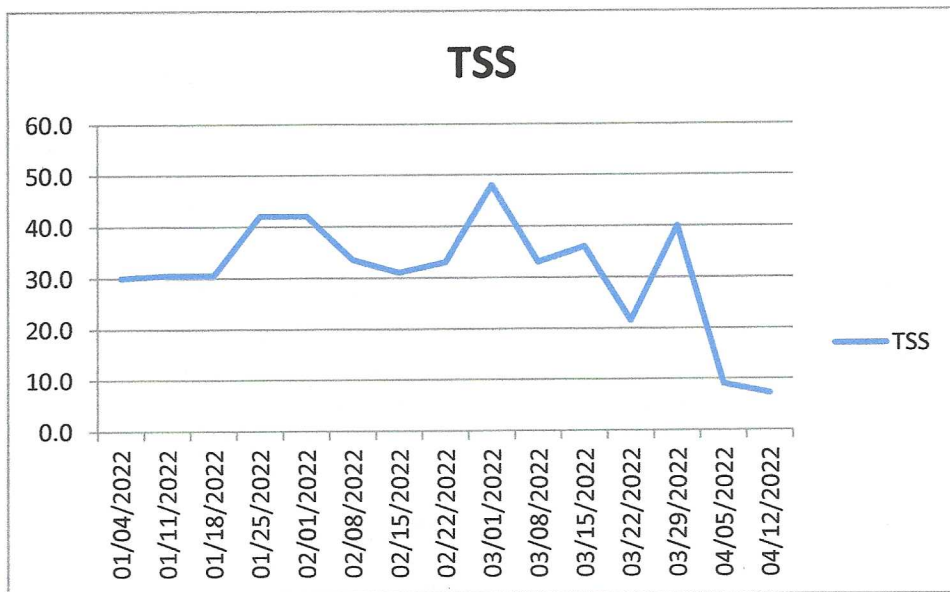
We did initial investigations into the lagoon condition and concluded that excessive sludge over decades had accumulated removing major retention time in the lagoon for biological sludge reduction to take place. In January 2022 the problem escalated with an excessive, irritant, foul odor that was unbearable. We were introduced to Advanced Microbial Solutions (AMS) by the company conducting our laboratory analysis for reporting purposes.

AMS speedily recognized the issues, sludge judged the lagoon, submitted a proposal and attended a City Council meeting to discuss a potential solution to the Council as well as concerned citizens. On February 16, 2022, we signed a contract for AMS to begin their proprietary biological technology to alleviate the issues. AMS guarantees removal of sludge, commenting that other problems usually diminish as the lagoon is returned to better health. Within 3 weeks the odor was gone and in 7 weeks, the sludge was removed. The removed over 3.2 million gallons of sludge.

Our citizens were very pleased as the odor diminished. We also had reduction in BOD, TSS, and e-coli. Below are graphs generated from our lab data.



01/04/2022	23.4
01/11/2022	20.4
01/18/2022	28.9
01/25/2022	35.2
02/01/2022	57.3
02/08/2022	72.0
02/15/2022	43.0
02/22/2022	49.4
03/01/2022	66.6
03/08/2022	54.2
03/15/2022	50.9
03/22/2022	33.2
03/29/2022	31.5
04/05/2022	14.2
04/12/2022	11.0



1/4/2022	30.0
1/11/2022	30.5
1/18/2022	30.5
1/25/2022	42.0
2/1/2022	42.0
2/8/2022	33.5
2/15/2022	31.0
2/22/2022	33.0
3/1/2022	48.0
3/8/2022	33.0
3/15/2022	36.0
3/22/2022	21.5
3/29/2022	40.0
4/5/2022	9.0
4/12/2022	7.2

Since our TSS was extremely high, obviously our rock filters were saturated with sludge. During the sludge removal from the lagoon, we benefited with our rock filters being cleaned, as well as resulting in a tremendous amount of money savings. The spike in TSS on 3-29-2022 was due to a hard rain event. AMS performed in a professional manner, did exactly what they said they were going to do, and saved us a large sum of money. We would recommend AMS to resolve your WWTP issues.

Respectfully,

A handwritten signature in black ink, appearing to read "M Byers", written over a horizontal line.

Marty Byers, City Administrator

A handwritten signature in black ink, appearing to read "Jesse Casey", written over a horizontal line.

Jesse Casey, Mayor