



GOLETA SANITARY

Water Resource Recovery District

February 3, 2025

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Steve D. Wagner, PE

General Manager

Lauren Fondahl
US EPA Region 9 WTR-2-3
75 Hawthorne Street
San Francisco, CA 94105-3901

SUBJECT: 2024 BIOSOLIDS ANNUAL REPORT

Dear Ms. Fondahl:

Enclosed is Goleta Sanitary District's 2024 Biosolids Annual Report. The report was prepared as required for compliance with 40 CFR Part 503 Sludge Regulations. It documents the Goleta Sanitary District's monitoring, distribution, and record keeping regarding biosolids quality. The report summarizes the monitoring results for the biosolids generated during 2024. The laboratory analytical reports are available and will be provided upon request.

Should you have any questions regarding the report, please do not hesitate to contact me at this office.

Sincerely,

Steve Wagner, P.E.
General Manager / District Engineer

Enclosure

cc: Executive Officer, Central Coast RWQCB

Prepared by:

Reviewed by:

One William Moffett Place, Goleta CA 93117
(805) 967-4519 office (805) 964-3583 fax

www.GoletaSanitary.org

GOLETA SANITARY DISTRICT

BIOSOLIDS ANNUAL REPORT 2024



GOLETA SANITARY
Water Resource Recovery District

“Protecting Public Health and the Environment”

Submitted: February 4, 2025

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BIOSOLIDS ANNUAL REPORT

I. GENERAL

1. **Name of Generator:** Goleta Sanitary District
2. **Permit No.:** CA 0048160
Order No.: R3-2017-0021
3. **Location:** 1 William Moffett Place
Goleta, CA 93117
4. **Mailing Address:** 1 William Moffett Place
Goleta, CA 93117
5. **Contact Person:** Pete Regis, Operations Manager
6. **Telephone:** (805) 967-4519
7. **Influent Flow:** 5.4 MGD 2024 Average Daily Flow
8. **Sludge Treatment Process:**

The Goleta Sanitary District (GSD) completed a major treatment plant upgrading project in December 2013. The main purpose of the construction project was to upgrade the partial secondary treatment portion of the facility to be able to treat 100% of the inflow to the full secondary level. The solids treatment portion of the facility was also upgraded as part of the project. Two of the five sludge drying beds were demolished to make room for a new solids handling building. The solids handling building contains two screw presses, two secondary sludge thickeners, pumping equipment, a chemical storage area, a screw conveyor for loading biosolids trucks and a sludge holding tank.

Settleable solids and floatable materials are skimmed from the primary clarifiers and transferred to one of the three anaerobic digesters. Secondary solids are mechanically thickened also using polymer and fed to the anaerobic digesters. The raw sludge is digested in the three heated anaerobic digesters for an average of 27 days at an annual average temperature of 96.9°F (36.0°C). Anaerobic digestion decomposes organic material, which produces digester gas composed primarily of methane. The digester gas is circulated to the boilers where it is used as fuel to heat the sludge in the digesters.

Sludge from the digesters can be sent directly to the screw press or can be pumped into one of two stabilization basins (lagoons) where the sludge is allowed to settle and continue to decompose. As the stabilization basins fill, stabilized sludge is dredged from the bottom of these basins and is dewatered by a screw press and

thickened by the addition of polymer to enhance coagulation. The resultant sludge was compressed to an average of 15.3 percent solids. These methods are used to generate Class B biosolids.

9. Biosolids Distribution Programs:

There were no Class A exceptional quality (EQ) biosolids produced by extended air drying in the sludge drying beds during 2024.

The District's Class B biosolids were hauled to Synagro West, LLC. at the former Liberty Composting facility located at 12421 Holloway Road, Lost Hills, CA 93249. Copies of the agreement with Synagro West are available upon request. The annual biosolids results submitted by Synagro West LLC. are herewith incorporated by reference.

10. Summary

On November 10, 2017, the Goleta Sanitary District's current NPDES permit became effective. The Goleta Sanitary District operates under NPDES Permit No. CA0048160 and Waste Discharge Requirements (WDR) Order No. R3-2017-0021. These permits contain sludge-monitoring programs requiring the District to analyze its sludge for various constituents on either an annual or quarterly basis depending on the constituent. The District's NPDES permit also stipulates that the District's biosolids must meet all of the regulations contained in 40 CFR Part 503.

All of the District's quarterly and annual biosolids sampling involved collecting biosolids samples from the screw press. Pollutants identified in Tables 2 and 3 of 40 CFR Part 503.13 were measured five times throughout the year while the other priority pollutants such as, grease and oils, PCBs, organochlorine pesticides, etc., are monitored annually, in October. Frequency requirements for vector attraction reduction and pathogen classification monitoring follow the criteria set forth in 40 CFR 503 Regulations.

All biosolids currently being produced and distributed by GSD are released in bulk form as "Pollutant Concentration (PC) Biosolids, Class B", and, as such, they meet 40 CFR Part 503 sections 503.12 and 503.14, General Requirements and Management Practices. During 2024, a total of 749 dry metric tons of bulk biosolids were produced by the Goleta Sanitary District.

II. LAND APPLIED BIOSOLIDS

1. Volume:

From January 2024 to December 2024, the Goleta Sanitary District distributed a total of 749 dry metric tons of biosolids. According to 40 CFR 503.8(b)(4) and Table E-12 *Amount of Biosolids and Frequency of Analysis* this amount of biosolids is required to be monitored quarterly.

Table 1 summarizes the total amount of biosolids in wet tonnage distributed on a monthly basis. The values in Table 1 are not reported on a dry weight basis, however the annual total in the final row is reported on a dry weight basis.

Table 1. Monthly Biosolids Distribution 2024, Wet Tons

Month	Synagro West LLC. Class B
January	422.97
February	216.70
March	474.40
April	353.34
May	319.41
June	525.43
July	430.94
August	623.68
September	369.54
October	538.51
November	592.81
December	527.07
Wet Ton Total	
5394.8	
Dry Metric Ton Total	
749	

2. Priority Pollutants:

Based on the amount of biosolids distributed from January 2023 to December 2023 the District was required to monitor 503.13 priority pollutant concentrations at a frequency of once per quarter as stated in Table 1 of 40 CFR part 503.16, *Frequency of Monitoring-Land Application*. The priority pollutant monitoring occurred in January, June, August and October which also fulfilled the sludge monitoring requirements of the District's NPDES permit.

Trace Metals

The results of the trace metal priority pollutants are tabulated in Table 2 and Table 3. Synagro West also had the biosolids from GSD analyzed for trace metals and other constituents twice a year. Table 4 summarizes the Synagro West testing results. Not all metals were analyzed for all samples every quarter. An analysis that was not performed on a specific sample is denoted by the letters "NA". Samples listed as NA – not analyzed - are analyzed typically on an annual basis in October only. All laboratory results indicate that the District's biosolids meet all of the metal pollutant limits found in TABLE 4 of 503.13 for the "Exceptional Quality" and "Pollutant Concentration" designations.

Class B results in Table 2, Table 3 and Table 4 are reported in mg/kg – dry weight basis. Percent moisture at the time of sampling is also recorded. Laboratory reports will be provided upon request.

Table 2. PRIORITY POLLUTANTS BIOSOLIDS 2024, mg/dry Kg

POLLUTANT	POLLUTANT LIMITS Part 503 Table 3, Sec 503.13	January 2024 1/30/2024	June 2024 6/24/2024
Antimony	NL	NA	NA
Arsenic	41	< 6.0	< 5.7
Beryllium	NL	NA	NA
Boron	NL	< 15	19
Cadmium	39	< 0.90	< 0.85
Chromium	* (1)	59	20
Copper	1,500	600	210
Lead	300	14	2.1
Mercury	17	0.43	0.34
Molybdenum ^{*(2)}	75	27	18
Nickel	420	24	8.1
Phosphorus	NL	32,000	10,000
Selenium	100	< 6.0	< 5.7
Silver	NL	29	< 1.1
Thallium	NL	NA	NA
Zinc	2,800	1,000	390
pH	NL	NA	NA
Oil & Grease	NL	NA	NA
% Moisture	NL	84.6	83.9
Nitrate	NL	< 3.2	< 3.0
Organic Nitrogen	NL	68,400	48,300
Kjeldahl Nitrogen	NL	78,000	58,000
Ammonia	NL	9,600	9,700

NL = No Limit. NA = Not Analyzed.

*(1) On October 25, 1995 the EPA amended Part 503 to delete chromium standards from Tables 1 through 4 of Subpart B, Land Application.

*(2) The EPA amended Part 503 on February 25, 1994 to delete temporarily the Table 3 molybdenum limits. However, the ceiling limit of 75 mg/Kg from Table 1 has been retained and must be met.

Table 3. PRIORITY POLLUTANTS BIOSOLIDS 2024 CONTINUED, mg/dry Kg

POLLUTANT	POLLUTANT LIMITS Part 503 Table 3, Sec 503.13	August 2024 8/13/2024	October 2024 10/7/2024
Antimony	NL	NA	7.9
Arsenic	41	< 6.9	< 6.2
Beryllium	NL	NA	< 1.5
Boron	NL	< 17	49
Cadmium	39	< 1.0	2.9
Chromium	* (1)	58	52
Copper	1,500	710	640
Lead	300	3.9	8.0
Mercury	17	0.31	0.23
Molybdenum ^{*(2)}	75	43	42
Nickel	420	20	27
Phosphorus	NL	27,000	22,000
Selenium	100	< 6.9	8.1
Silver	NL	1.8	1.9
Thallium	NL	NA	< 3.1
Zinc	2,800	1,100	1,000
pH	NL	NA	8.08
Oil & Grease	NL	NA	41,800
% Moisture	NL	86.2	84.6
Nitrate	NL	< 3.6	4.6
Organic Nitrogen	NL	54,500	64,400
Kjeldahl Nitrogen	NL	64,000	74,000
Ammonia	NL	9,500	9,600

NL = No Limit.

NA = Not Analyzed.

*(1) On October 25, 1995 the EPA amended Part 503 to delete chromium standards from Tables 1 through 4 of Subpart B, Land Application.

*(2) The EPA amended Part 503 on February 25, 1994 to delete temporarily the Table 3 molybdenum limits. However, the ceiling limit of 75 mg/Kg from Table 1 has been retained and must be met.

**Table 4. LIBERTY COMPOSTING/SYNAGRO PRIORITY POLLUTANTS BIOSOLIDS RESULTS
2024, mg/dry Kg**

POLLUTANT	POLLUTANT LIMITS Part 503 Table 3, Sec 503.13	January 2024 1/3/2024	July 2024 7/15/2024
Total Coliform (MPN/g)	NL	>24,200	>24,200
Antimony	NL	<18.5	<17.7
Arsenic	41	<9.03	<8.64
Barium	NL	340	311
Beryllium	NL	<0.448	<0.428
Cadmium	39	1.38	1.24
Chromium	* (1)	46.0	39.0
Chromium ⁶⁺	NL	<18.7	<35.6
Cobalt	NL	2.76	2.48
Copper	1,500	522	605
Lead	300	7.87	6.83
Mercury	17	0.561	0.509
Molybdenum ^{*(2)}	75	24.8	37.5
Nickel	420	22.7	17.6
Selenium	100	<7.93	9.78
Silver	NL	3.33	2.17
Thallium	NL	<13.7	<13.1
Vanadium	NL	11.4	11.3
Zinc	2,800	828	844
pH	NL	7.2	7.4
TDS	NL	5,570	4,470
% Solids	NL	15.3	16.2
Nitrate	NL	<3.8	<3.7
Kjeldahl Nitrogen	NL	47,300	51,200

NL = No Limit. NA = Not Analyzed. *(1) & *(2) footnotes can be found below Table 2.

Organic Nitrogen

The biosolids were analyzed individually for both total kjeldahl nitrogen and ammonia nitrogen. *Standard Methods for the Examination of Water and Wastewater, 18th Edition*, Method 4500-N_{org} B states that "Should kjeldahl nitrogen and ammonia nitrogen be determined individually, "organic nitrogen" can be obtained by difference." The organic nitrogen concentrations that are summarized in Table 2 and Table 3 were determined in this manner.

Pesticides and Organics

As part of the annual October sampling requirement, biosolids samples were collected by District personnel and analyzed by Oilfield Environmental & Compliance (OEC) Lab, for organochlorine pesticides and organic chemicals as defined by EPA methods 8081A, 8260B, 8270C. Of the over 150 compounds analyzed only one of the compounds was detected. No limits for these compounds are specified by 40 CFR Part 503. Table 5 includes the cyanide result which was below the detection limit for the analysis. The laboratory reports will be provided upon request.

Table 5. DETECTED PARAMETERS, BIOSOLIDS, October 2024

Parameter, concentration unit	Concentration
4-Isopropyl Toluene, mg/kg dry	0.20
Cyanide, mg/kg dry	< 65

3. Class B

Bulk Distribution – Management Practices

The bulk biosolids were used by Synagro West at the former Liberty Composting facility. The composting facility is located on 162-acres located in Lost Hills, CA. Synagro West employs both windrow composting and aerated static pile composting for attainment of Class A sewage sludge in accordance with provisions of the Federal Part 503 Regulations – Standards for the Use or Disposal of Sewage Sludge, 503.32(a)(1), *Sewage Sludge Class A*.

Pathogen Classification

The bulk biosolids prepared at the Goleta Sanitary District for land application meet Class B requirements of 40 CFR Part 503.32(b)(3), Class B-Alternative 2. This alternative states that the Class B requirements can be met if the sewage sludge is treated in one of the Processes to Significantly Reduce Pathogens as described in Appendix B to Part 503-Pathogen Treatment Processes.

The sewage sludge at the Goleta Sanitary District is treated in anaerobic digesters in the absence of air for an average of approximately 27 days at 36.0 degrees Celsius. This process meets the mean cell residence time and temperature of 15 days at 35 to 55 degrees Celsius described in Appendix B to Part 503.

Class B - Vector Attraction Reduction

Biosolids prepared at the Goleta Sanitary District meet the vector attraction reduction requirement listed in 503.33(b)(1) which states that "the mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%." The fractional volatile solids reduction (FVSR) was calculated using the Van Kleeck Equation as found in EPA/625/R-92/013, "Control of Pathogens and Vector Attraction in Sewage Sludge", December 1992, p. 89. Results are summarized below in TABLE 6.

Table 6. VOLATILE SOLIDS REDUCTION

Screw Pressed Biosolids	Fractional Volatile Solids of Feed Sludge	Fractional Volatile Solids of Biosolids	Fractional Volatile Solids Reduction*	Percent Volatile Solids Reduction
2024 Averages	0.8083	0.6727	0.5126	51.3%

*FVSR is calculated using the Van Kleeck Equation as found in EPA/625/R-92/013, "Control of Pathogens and Vector Attraction in Sewage Sludge, December 1992, p. 89.

4. Certification Statement – Class B

"I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in 503.32(b) and the vector attraction reduction requirement in 503.33(b)(1) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."



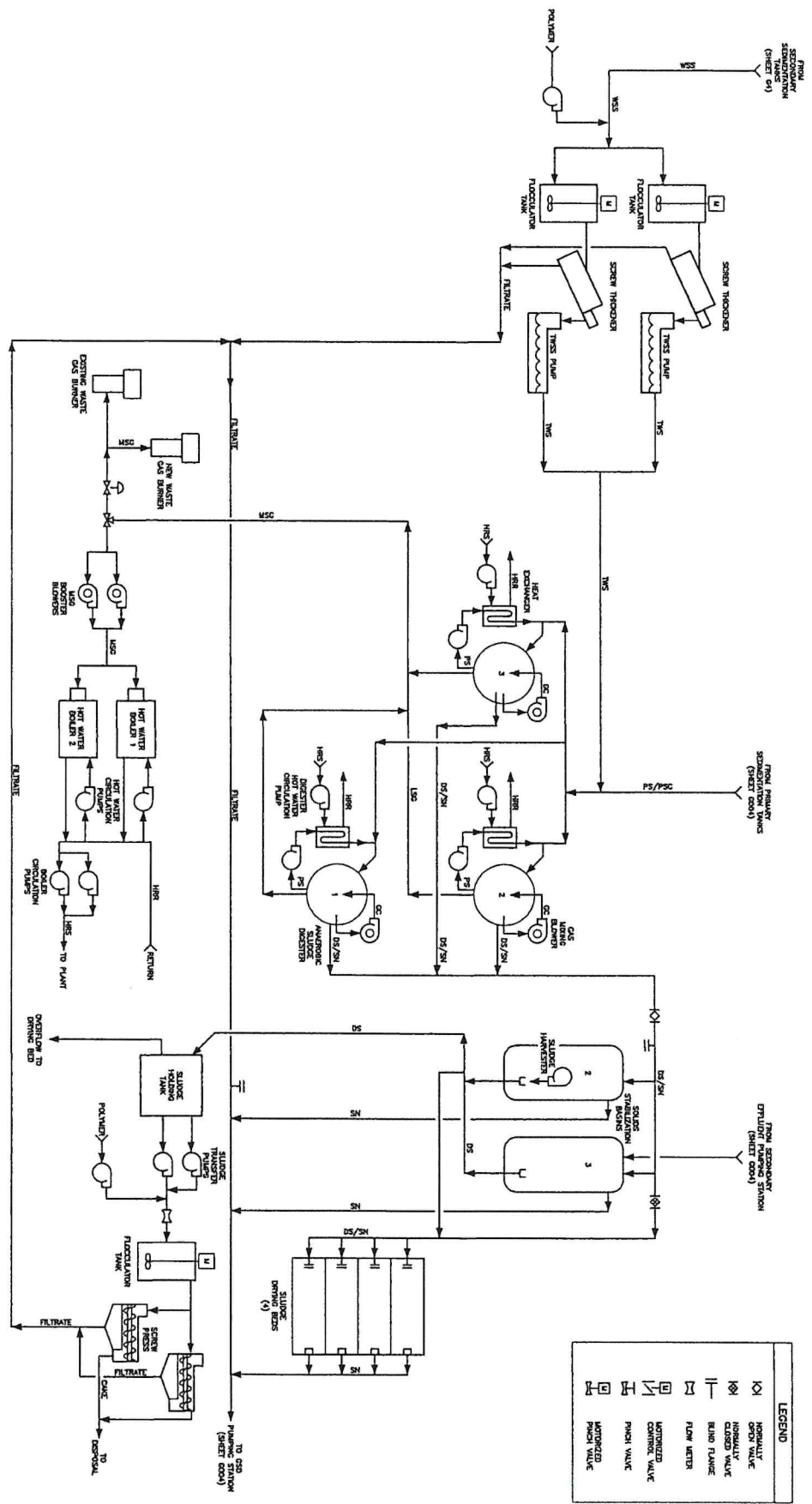
Pete Regis
Operations Manager
Goleta Sanitary District

2-3-25

Date

APPENDIX A

Solids Flow Diagram



LEGEND	
	NORMALLY OPEN VALVE
	NORMALLY CLOSED VALVE
	BLIND FLANGE
	FLOW METER
	MOTORIZED CONTROL VALVE
	MOTORIZED PINCH VALVE

PLANT FLOW DIAGRAM

SOLIDS

GOLETA WASTEWATER TREATMENT PLANT

DATE
04-01-12

FIGURE
G005