

MICROBREWERY FEE STUDY

Reclassification of Inspection and Control Fee Class

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MICROBREWERY FEES STUDY

I. Scope

Environmental compliance inspections may differ among breweries because of the considerable difference in production volume that contributes to the wastewater discharge and the types of operations in the facilities. For this reason, as well as the increasing number of microbreweries and the expansion of the existing ones, the current Industrial Wastewater (IW) regulations for this industry need to be reexamined to better serve the brewers while protecting the treatment plant operations from the increasing volume of the industrial wastewater discharged to the collection system.

II. Background

The Industrial Waste Management Division (IWMD) of LA Sanitation (LASAN) regulates and monitors the discharge of industrial wastewater to the City's wastewater collection systems. IWMD is also responsible for the determination and collection of industrial waste fees to recover the City's costs in providing the required level of service, and wastewater treatment and control associated with the discharge of industrial wastewater. IWMD requires industrial facilities discharging wastewater to the City's wastewater collection system to obtain an IW Discharge Permit. All permitted facilities are subject to industrial waste fees. The fee schedule is listed in the Los Angeles Municipal Code (LAMC) Section 64.30 D (Industrial Wastewater Disposal - Fees and Charges).

The craft brewery industry has been growing rapidly in the past few years in the US. From 2011 to 2016, the craft beer production has grown from 11.5 million beer barrels (1 beer barrel, bbl = 31 US gallons) to 24.6 million bbl, a 114% increase, nationwide. During the same period, the number of craft breweries in California has increased 130% from 270 to 623, ranking 1st nationwide in 2016. The City of San Diego was the "Microbrew Capital of the United States"¹ until this April 2017 when it was repositioned to second place by the City of Santa Rosa, also in California.

The North American Industry Classification System (NAICS) manual lists classifications and descriptions of business establishments. Breweries with NAICS Code 312120 are described as the industry that includes "*establishments primarily engaged in brewing beer, ale, malt liquors, and nonalcoholic beer*". NAICS classification of all types of brewer establishments are covered in one class and used for reference by IWMD.

The Brewers Association (BA) is a nonprofit trade organization of brewery members and members of the allied trades, beer wholesalers, retailers, and individuals. BA classifies the breweries to either a (1) large brewery, a brewery with beer production of over 6,000,000 beer barrels (bbl) or (2) craft brewery. The craft breweries are further classified to "*four distinct craft beer industry market segments*": brewpubs, microbreweries, regional breweries, and contract breweries.

¹ Published in "The Pudding", an online journal, by researcher and editor Russell Goldenberg using data from RateBeer (a database of beers rated by beer enthusiasts), analyzing 1,600+ breweries in 800+ U.S. cities.

1. Brewpubs are brewing facilities that sell at least 25% of their beer products on-site.
2. Microbreweries are brewing facilities producing less than 15,000 bbl per year with at least 75 % of the production sold off-site.
3. Regional Craft Breweries are brewing facilities with a beer production of 15,000 to 6,000,000 bbl per year.
4. Contract Brewing Companies or Contract Brewers have other brewing facilities produce their beers.

III. Breweries in the City of Los Angeles

The City of Los Angeles currently has 19 breweries consisting of 15 microbreweries, 2 brewpubs, 1 regional and 1 large based on the Brewers Association’s classification. A joint visit was conducted by IWMD personnel from both inspection and engineering groups to review the processes and beer production of selected city breweries. The following table lists the names of the breweries, the type based on Brewers Association classification, reported wastewater discharge, and yearly production. Breweries that are highlighted have been visited for this study.

Table 1 – LA Breweries

Brewery	Type	Wastewater Discharge Reported, gpd	Beer Produced in 2016, bbl	Projected 2017 Beer Production, bbl
8 One 8 Brewery, LLC	Microbrewery	0	250	250
Angel City Brewing Company	Microbrewery	588	5,000	5,000
Anheuser-Busch, LLC - LA Brewery	Large	943,945	12,000,000	12,000,000
Art District Brewing Company	Brewpub	300	2,100	2,100
Boomtown Brewery	Microbrewery	19	2,200	2,200
Brouwerij West	Microbrewery	476	1,100	3,000
Cellador Ales	Microbrewery	200	Started in 2016	250
Dry River Brewing	Microbrewery	200	52	52
Eagle Rock Brewery	Microbrewery	862	2,500	2,500
Firestone Walker Brewing Company	Microbrewery	200	Started in 2016	1,000
Golden Road Brewing	Regional	15,337	47,000	85,000
Hand Brewed Beer	Microbrewery	3	120	160
Highland Park Brewery	Regional	90	20,000	20,000
Indie Brewing Company	Microbrewery	450	360	360
Iron Triangle Brewing Company	Microbrewery	1,003	2,100	2,100
Karl Strauss Brewing Company	Brewpub	200	360	360
Macleod Ale Brewing Company, LLC	Microbrewery	300	920	1,200
Mumford Brewing Operations LLC	Microbrewery	550	1,200	1,200
Ohana Brewing Company	Microbrewery	132	273	300

Figure 1 - No of Breweries in

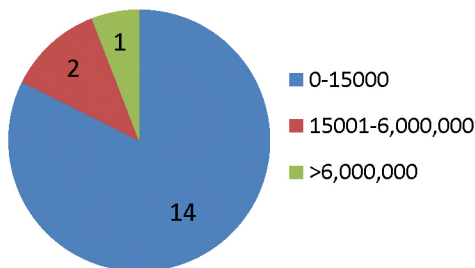
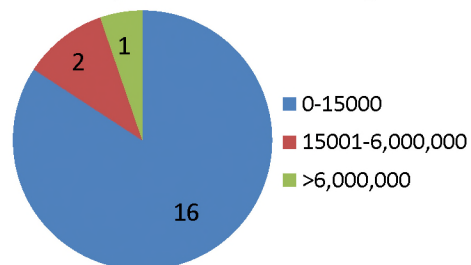
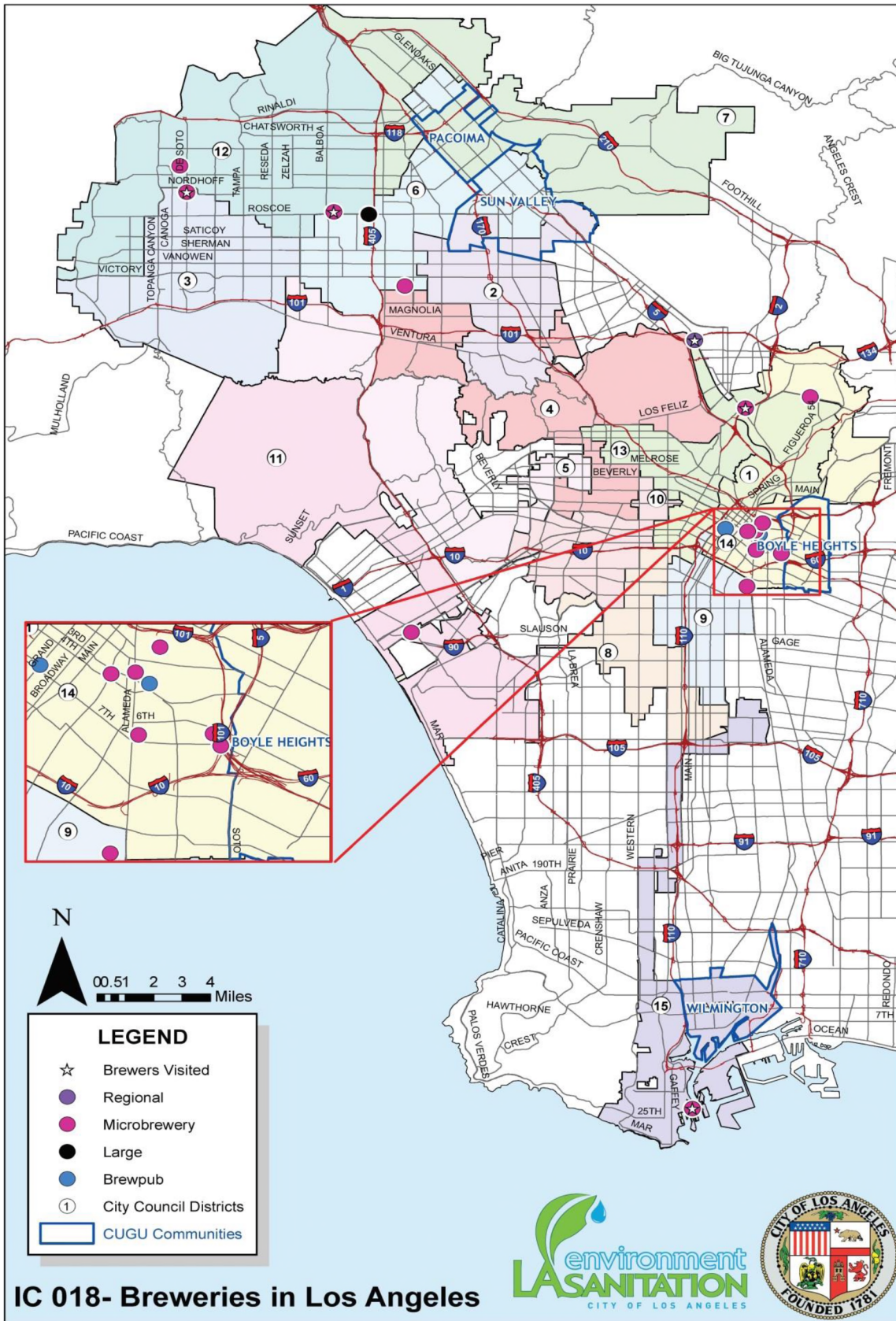


Figure 2 - No of Breweries in 2017 per Production Range





IV. Industrial Waste Fees of Brewing Facilities

IWMD issued IW Discharge permits to the 19 breweries in the City of Los Angeles with Industrial Classification IC018 – Breweries to allow the discharge of wastewater to the City’s wastewater collection system. The typical unit operations in breweries include grinding, brewing, fermentation, and filtration, but not all breweries employ all these unit operations. Industrial wastewater is usually generated from general cleaning/washing of equipment, floors washing/cleaning, cooling tower bleed off, boiler blow-down and spills, or occasionally, disposal of wasted product.

Currently, all IW Discharge permits with Industry Class IC018-Breweries are classified under I&C Fee Class 5.

V. Benchmarking of Brewery Industrial Water Fees with other Cities

The City conducted a benchmarking study with the Contract Cities and the City of San Diego. The City charges Quality Surcharge Fee (QSF) only for the large brewery. The QSF is determined using the Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS) results in the brewery’s self-monitoring report (SMR). For microbreweries, the industry-wide average values of the BOD and TSS for IC018-Breweries have not been established. LA Sanitation will undertake an effort, in the future, to determine the strength of the wastewater discharged from microbreweries. This is to establish if there should be additional fees applicable to the treatment and removal of these pollutants. IWMD’s proactive projects include the review of all industry classifications (ICs), including microbreweries, and the ICs’ designated industry-wide average values of BOD and SS.

The following table shows the IW fee rates for breweries.

Table 3 – Contract City Agencies and City of San Diego IW Fees for Breweries

	City of LA	Glendale	Burbank	El Segundo	Santa Monica	San Fernando	San Diego
No of Permitted Breweries	19	1	1	1	1	1	100+
Annual Permit Fees	App Fee	\$510	\$197	\$50.50	\$450	\$75.32	Permit Fee: \$25-\$500/year based on the wastewater flow discharge
	I&C Fee	\$1749	\$405	\$415		\$930.30	
Quality Surcharge Fees	Only For Large Brewery	No	No	Yes	No	No	Yes Flow: \$3.7672/HCF ¹ Base Fee: \$15.33/mo COD ² : \$0.2242/lb TSS ³ : \$0.5517/lb
BBL/Year	50 – 12 M	250	3,000-3,500	Not sure, but flow is small	At least 4,000	5,000 to 7,000	

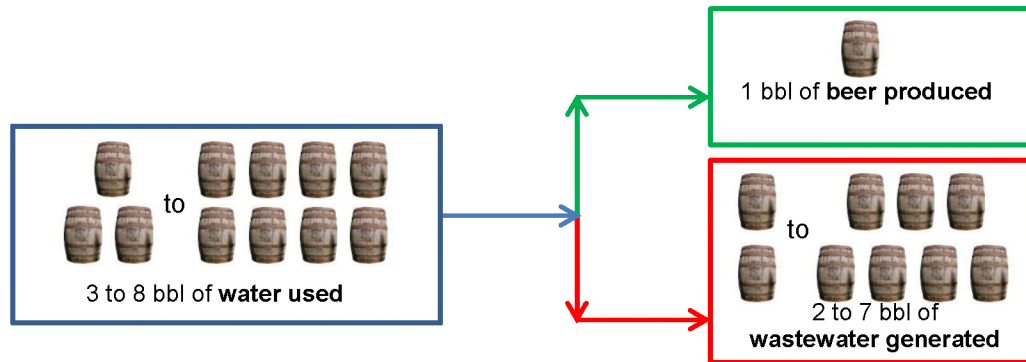
¹ HCF is Hundred Cubic Foot; ² COD is Chemical Oxygen Demand; ³ TSS is Total Suspended Solids

VI. Brewery Industrial Wastewater Discharge Quality Study

“The Brewers Association Water and Wastewater: Treatment/Volume Reduction Manual” published that for most breweries, 70% of incoming water is discharged as wastewater. Another

article by Fleis & Vandenbrink on “Small Breweries Have Big Impact on Treatment Plants” states that the ratio is 2 to 7 bbl of wastewater per bbl of finished product, that is 67% to 87% of water usage discharged to the collection system.

Figure 3 – Ratio of WW Discharged per Beer Produced



VII. Current Workload Indicator

Inspections of the breweries (IC 018) differ for large breweries and microbreweries. Listed below is a comparison of the inspection activities between Anheuser Busch and microbreweries. Anheuser Busch inspection activities are based on I&C Fee Class 5, Non-Categorical Significant Industrial User (NCSIU) and required Self Monitoring Report (SMR) for industrial wastewater discharge flow equal to or greater than 250,000 gpd. Currently, the pretreatment methods of Anheuser Busch include clarification, screening, biological treatment, and neutralization.

Table 7 – Comparison of Inspection Activities between Large and Microbreweries

Activity	Anheuser Busch	Microbrewery
Inspection Per Year	4+	2
Sampling Per Year	4 composite ¹ & 2 grab ²	pH Test
Permitting	Renew every 3 years	No Renewal
Flow Update Per Year	4	1
Self-Monitoring Report Per Year	12	None
Laboratory Analyses ³	Yes	No

¹ Composite sample is a sample that is collected over time, formed either by continuous sampling or by mixing discrete samples.

² Grab Sample is a sample that is taken from a wastewater discharge on a onetime basis without regard to the volume of flow in the discharge.

³ Laboratory analyses for wastewater discharge from Breweries may include the following: arsenic, biochemical oxygen demand (BOD), cadmium, chromium, copper, lead, nickel, silver, zinc, chemical oxygen demand (COD), cyanide, sulfides, total suspended solids (TSS), oil and grease, and pH.

VIII. Recommendation

The team recommends the following based on the above study:

1. Establish new subclassification for breweries based on the amount of industrial wastewater discharged from the facility.

a. Large Brewery

- i. IC018 A –breweries with industrial wastewater discharges of equal to or greater than 25,000 gpd

b. Microbrewery

- i. IC018 B –breweries with industrial wastewater discharges of less than 25,000 gpd that can demonstrate the application of Pollution Prevention Practices.

Beer distributors that do not perform any unit operation in their facility may be classified as IC074A: Wholesale Food Distribution.

2. Establish a new I&C Fee classification for breweries.

Table 8 – Recommended I&C Classification for Microbreweries

IC Classification	I&C Fee Class
IC018 A – breweries with IW discharges of \geq 25,000 gpd	IP05
IC018 B – microbreweries with IW discharges $<$ 25,000 gpd that can demonstrate the application of Pollution Prevention Practices	IP02

The recommendation of reclassifying IC018B-Microbreweries that practice Pollution Prevention to I&C Fee Class (IP02) is consistent with the complexity and extent of the unit operations in these brewing facilities.

3. Establish Pollution Prevention Practices for microbreweries. This may include installation of screens in the floor drains, settling tanks, grease traps; reuse/recycle of spent grains/malt and yeasts; reduce, reuse, and recycle of water.

The microbreweries shall then be required to demonstrate the application of the Pollution Prevention Practice in order to be classified under IC018B-Microbreweries.

IX. Financial Impact of Reclassification of Inspection and Control (I&C) Fee

Microbreweries contribute 0.15% in the total revenue of the IW fees and reclassification of the I&C Class Fees for the 18 permitted microbreweries will have a very minor impact. The following table shows the Inspection and Control Fees billed to the large and microbreweries.

Table 9 – Comparison of Current I&C Fees and New I&C Fees for Proposed Sub-Class

Effective Date	ANNUAL FEE RATES		TOTAL ANNUAL FEES For All 19 Permits	
	I&C Class 5 Fees	I&C Class 2 Fees	CURRENT	PROPOSED
July 1, 2017	\$1,749.00	\$700.00	\$33,231.00	\$14,349.00
July 1, 2018	\$1,863.00	\$745.00	\$35,397.00	\$15,273.00
July 1, 2019	\$1,984.00	\$793.00	\$37,696.00	\$16,258.00
July 1, 2020	\$2,113.00	\$845.00	\$40,147.00	\$17,323.00

X. References

Water and Wastewater: Treatment/Volume Reduction Manual, Brewers Association
Wastewater Management Guidance Manual, Brewers Association
Small Breweries Have Big Impact on Treatment Plants, Fleis & Vandenbrink, September 2016

XI. Web Links

Brewers Association: <https://www.brewersassociation.org/>
The Pudding, an online journal: <https://pudding.cool/2017/04/beer/>

XII. Attachment

Circular Economy; Golden Road Brewing Spend Yeast Reus Options, LASAN/IWMD