

June 9, 2026

Biobot Analytics Wastewater-Based Epidemiology Pricing

San Francisco Department of Public Health

Program Objectives

1. Estimate concentration of fentanyl, methamphetamine, methadone and buprenorphine.
2. Understand San Francisco's drug supply, especially new NPS such as medetomidine, cyclophosphamide, kratom or xylazine.

Program Design	Annual Cost
<p>ESTIMATE CONCENTRATION</p> <p>Sites: Two San Francisco WWTPs</p> <p>Assay: Targeted Panel described in Appendix A</p> <p>Frequency:</p> <ul style="list-style-type: none"> • One sample per week 	<p>\$58,860</p>
<p>UNDERSTAND SAN FRANCISCO'S DRUG SUPPLY</p> <p>Sites: Two San Francisco WWTPs (pooled into one sample) and one upstream municipal manhole</p> <p>Assay: NTA (Non-Targeted Analysis) Panel described in Appendix B, which provides qualitative detect / non-detect information.</p> <p>Frequency:</p> <p>First quarter:</p> <ul style="list-style-type: none"> • Every other week <p>Rest of the year:</p> <ul style="list-style-type: none"> • Once per month 	<p>\$28,140</p>



<p>Engineering Services (wastewater passive sampler and technician) are required to collect samples from the upstream municipal manhole.</p> <p>GIS Analysis of the municipal wastewater network is required to select the upstream municipal manhole. Biobot can support this work in collaboration with the SF DPW.</p>	
TOTAL	\$87,000 per year

Results for all participating sites will be delivered via Biobot's Wastewater Intelligence Platform, including downloadable flat files (.CSV) for all targets and standard trend analysis charts. Biobot will provide technical and programmatic support through regular communication and meetings.

Appendix A: Targeted Panel

Metabolites included where available

Illicit Opioids:

Fentanyl
Heroin
Acetyl fentanyl
Carfentanil
Sufentanil
Para-fluorofentanyl
Tianeptine

Stimulants, Psychoactives, and Other Drugs:

Cocaine
Methamphetamine
Xylazine
Ketamine
Medetomidine
THC
7-hydroxymitragynine (7-OH / Kratom)



Nicotine

LSD

PCP

Gabapentin

Zolpidem

Zopiclone

MDMA

Substance Use Disorder Treatments

Naloxone

Buprenorphine

Methadone

Prescription Opioids

Morphine

Oxycodone

Codeine

Dihydrocodeine

Hydromorphone

Hydrocodone

Oxymorphone

Tramadol

Benzodiazepines

Diazepam

Temazepam

Alprazolam

Lorazepam

Clonazepam

Oxazepam

Flunitrazepam

Nitrazepam

Nitazenes

Etodesnitazene (ETOD)

N-Pyrrolidino Etonitazene

Isotonitazene (ISOT) / Protonitazene (PROT) (isomers)
n-pyrrolidino protonitazene

Appendix B: NTA Panel - over 600 substances captured in the library

Opioids 127 compounds Fentanyl & analogs 71 Nitazenes 16 Morphine derivatives 12 Codeine derivatives 5 Methadone & related 4 Meperidine & related 4 Opium preparations 6 Other 9	Benzodiazepines 44 compounds 1,4-Benzodiazepines (-zepam) 23 Triazolobenzodiazepines (-zolam) 14 Other 7	Stimulants 43 compounds Amphetamines 12 Cathinones / bath salts 20 Cocaine & derivatives 3 Other 8	Cannabinoids 38 compounds PINACA / BINACA Indazoles 12 JWH series 9 Indole-based 10 Other 7	Hallucinogens 23 compounds Phenethylamines (2C & NBOMe) 13 Tryptamines 7 Other 3
Anabolic steroids 67 compounds Testosterone derivatives 24 Nandrolone / 19-nor derivatives 18 Other androstane derivatives 25	Dissociatives 11 compounds Ketamine & analogs 4 Phencyclidine & analogs 3 Other 4	Barbiturates 16 compounds Short-acting 5 Long-acting 4 Combination / suppository forms 7	Other/Abused pharm 7 compounds Gabapentin, Loperamide, DXM, Diphenhydramine, Promethazine, Quetiapine, Clonidine, Tianeptine	Sedative 1 compound Alprazolam
Other/Controlled 265 compounds	Opioid precursors & intermediates 61 Sedative-hypnotics & GHB 16 Orexin receptor antagonists 3	Novel psychoactive / designer 24 Anticonvulsants / newer scheduled agents 7 Other / miscellaneous 132	Appetite suppressants / anorectics 16 Wake-promoting / stimulant-adjacent 6	