water; and

one or more additional volatile organic compounds (VOCs), wherein the one or more additional VOCs comprise at least one VOC selected from the group consisting of 1-para-menthene-8-thiol, 2-isopropyl-4-methyl thiazole, 3-phenylpropanal, 4,5,6,7-tetrahydro-3,6-dimethylbenzofuran, 5-methyl-2-phenyl-2-hexenal, allyl hexanoate, cis-3-hexenyl valerate, methionyl butyrate, methyl-2-pyrrolyl ketone, omega-pentadecalactone, and phenethyl tiglate.

In another aspect, the present disclosure refers to a method of making an alcoholic beverage replica, the method comprising:

combining ingredients comprising:

water;

ethanol; and

one or more additional volatile organic compounds (VOCs),

wherein the one or more additional VOCs comprise at least one VOC selected from the group consisting of 1-para-menthene-8-thiol, 2-isopropyl-4-methyl thiazole, 3-phenylpropanal, 4,5,6,7-tetrahydro-3,6-dimethylbenzofuran, 5-methyl-2-phenyl-2-hexenal, allyl hexanoate, cis-3-hexenyl valerate, methionyl butyrate, methyl-2-pyrrolyl ketone, omega-pentadecalactone, and phenethyl tiglate.

In yet another example, the present disclosure refers to a method of making a spirit or wine replica concentrate, the method comprising combining:

ethanol;

water; and

one or more additional VOCs, wherein at least one of the one or more additional VOCs is present in a concentration of at least about 2-fold the concentration of the same VOC in a corresponding traditional spirit or wine.

In a further example, the present disclosure refers to spirit or wine replica concentrate comprising:

ethanol;

water; and

one or more additional VOCs, wherein at least one of the one or more additional VOCs is present in a concentration of at least about 2-fold the concentration of the same VOC in a corresponding traditional spirit or wine.

WHAT IS CLAIMED IS:

1. An alcoholic beverage replica comprising:

ethanol;

water; and

one or more additional volatile organic compounds (VOCs), wherein the one or more additional VOCs comprise at least one VOC selected from the group consisting of 1-para-menthene-8-thiol, 2-isopropyl-4-methyl thiazole, 3-phenylpropanal, 4,5,6,7-tetrahydro-3,6-dimethylbenzofuran, 5-methyl-2-phenyl-2-hexenal, allyl hexanoate, cis-3-hexenyl valerate, methionyl butyrate, methyl-2-pyrrolyl ketone, omega-pentadecalactone, and phenethyl tiglate.

2. The alcoholic beverage replica of claim 1, wherein the one or more VOCs comprise at least one compound selected from the group consisting of 2-isopropyl-4-methyl thiazole, cis-3-hexenyl valerate, methionyl butyrate, and phenethyl tiglate.

3. The alcoholic beverage replica of claim 1 or claim 2, wherein the one or more VOCs comprise 4,5,6,7-tetrahydro-3,6-dimethylbenzofuran.

4. The alcoholic beverage replica of any one of claims 1 to 3, wherein the one or more VOCs comprise allyl hexanoate.

5. The alcoholic beverage replica of any one of claims 1 to 3, wherein the one or more VOCs comprise methyl-2-pyrrolyl ketone.

6. The alcoholic beverage replica of any one of claims 1 to 5, wherein the one or more VOCs do not comprise at least one VOC selected from the group consisting of 2,4,6-trimethylphenol (mesitol), 5-ethyl-3-hydroxy-4-methyl-2(5H)-furanone (maple furanone), 6-methyl-5-hepten-2-one, b-caryophellene, cis-2-hexenol, hexadecanol, methyl cyclopentenolone, nonanoic acid, and terpinolene.

7. The alcoholic beverage replica of any one of claims 1 to 6, wherein the one or more additional VOCs comprise:

an ester;

an alcohol in addition to the ethanol;

optionally, an acid;

optionally, an aldehyde, a ketone, or an aldehyde and a ketone;

optionally, a terpene, an isoprenoid, or a terpene and an isoprenoid;

optionally, a phenol;

optionally, a lactone;

optionally, an amine, a pyrazine, or an amine and a pyrazine;

optionally, a thiol, a thiazole, a sulfide, or any combination thereof;

optionally, an ether;

optionally, an acetal; and

optionally, a furan.

8. The alcoholic beverage replica of any one of claims 1 to 7, wherein the one or more additional VOCs comprise one or more esters.

9. The alcoholic beverage replica of claim 8, wherein the one or more esters are selected from the group consisting of 2-methylbutyl acetate, 2-methylbutyl isovalerate, 2-phenylethylacetate, amyl butyrate, benzyl acetate, butyl acetate, butyl formate, butyl isovalerate, cis-3-hexenyl acetate, diethyl malate, diethyl succinate, dimethyl anthranilate, ethyl 3-hydroxyhexanoate, ethyl acetate, ethyl anthranilate, ethyl benzoate, ethyl butanoate, ethyl cinnamate, ethyl decanoate, ethyl heptanoate, ethyl hexanoate, ethyl isobutyrate, ethyl isovalerate, ethyl lactate, ethyl laurate, ethyl levulinate, ethyl myristate, ethyl nonanoate, ethyl octanoate, ethyl palmitate, ethyl phenyl acetate, ethyl propionate, ethyl salicylate, ethyl undecanoate, ethyl valerate, ethyl(methylthio) acetate, ethyl-2-mercaptopropionate, ethyl-2-methylbutyrate, ethyl-3-hydroxybutyrate, ethyl-trans-2-butenoate, ethyl-trans-3-hexenoate, geranyl acetate, heptyl acetate, hexyl acetate, hexyl hexanoate, isoamyl acetate, isoamyl hexanoate, isoamyl isobutyrate, isoamyl isovalerate, isoamyl octanoate, isobutyl acetate, linalyl acetate, linalyl butyrate, linalyl formate, methyl acetate, methyl anthranilate, methyl decanoate, methyl dihydrojasmonate, methyl hexanoate, methyl laurate, methyl octanoate, methyl salicylate,

methyl vanillate, octyl acetate, phenethyl acetate, phenethyl butyrate, phenethyl formate, phenethyl isobutyrate, phenethyl octanoate, phenethyl propionate, propyl acetate, propyl butyrate, propyl hexanoate, and mixtures thereof.

10. The alcoholic beverage replica of claim 8 or claim 9, wherein the one or more esters are present in a total amount of 0.009 mg/L to 1.5 g/L.

11. The alcoholic beverage replica of any one of claims 1 to 10, wherein the one or more additional VOCs comprise one or more acids.

12. The alcoholic beverage replica of claim 11, wherein the one or more acids are selected from the group consisting of 3,7-dimethyl-6-octanoic acid, 3,7-dimethyl-6-octenoic acid, butyric acid, decanoic acid, hexanoic acid, isobutyric acid, isovaleric acid, nonanoic acid, octanoic acid, propanoic acid, and mixtures thereof.

13. The alcoholic beverage replica of claim 11 or claim 12, wherein the one or more acids are present in a total amount of 0.03 mg/L to 325 mg/L.

14. The alcoholic beverage replica of any one of claims 1 to 13, wherein the one or more additional VOCs comprise one or more alcohols in addition to the ethanol.

15. The alcoholic beverage replica of claim 14, wherein the one or more alcohols are selected from the group consisting of 1-decanol, 1-octanol, 1-octen-3-ol, 2-(methylthio)ethanol, 2-methyl-1-butanol, 2-phenylethanol, 3-(methylthio)-1-propanol, 3-methyl-1-pentanol, amyl alcohol, benzyl alcohol, butanol, cis-2-hexenol, cis-3-hexen-1-ol, DL-3-methyl-2-butanol, hexadecanol, hexanol, isoamyl alcohol, isobutanol, propanol, trans-2-hexen-1-ol, and mixtures thereof.

16. The alcoholic beverage replica of any one of claims 13 to 15, wherein the one or more alcohols are present in a total amount of 0.08 mg/L to 4.5 mg/L.

17. The alcoholic beverage replica of any one of claims 1 to 16, wherein the one or more additional VOCs comprise one or more aldehydes or ketones.

18. The alcoholic beverage replica of claim 17, wherein the one or more aldehydes or ketones are selected from the group consisting of 2,3-pentadione, 2-heptanone, 2-methylbutyraldehyde, 2-nonanone, 2-undecanone, 3-nonen-2-one, 5-ethyl-3-hydroxy-4-methyl-2(5H)-furanone (maple furanone), 5-methyl furfural, 6-methyl-5-hepten-2-one, acetaldehyde, acetoin, acetophenone, benzaldehyde, cinnamaldehyde, damascenone, diacetyl, furfural, isobutyraldehyde , isovaleraldehyde, maltol, methional, methyl cyclopentenolone, methyl β-naphthyl ketone, nonanal, p-anisaldehyde, phenylacetaldehyde, salicylaldehyde, trans-2-heptenal, trans-2-hexen-1-al, trans-2-pentenal, valeraldehyde, and mixtures thereof.

19. The alcoholic beverage replica of claim 17 or claim 18, wherein the one or more aldehydes or ketones are present in a total amount of 0.02 mg/L to 14 mg/L.

20. The alcoholic beverage replica of any one of claims 1 to 19, wherein the one or more additional VOCs comprise one or more terpenes or isoprenoids.

21. The alcoholic beverage of claim 20, wherein the one or more terpenes or isoprenoids are selected from the group consisting of (-)alpha-pinene, (-)cis-rose-oxide, 3-carene, 4-carvomenthenol, 4-ethylguaiacol, a-ionone, a-phellandrene, a-terpineol, b-caryophellene, beta pinene, beta-ionone, carvone, citral, citronellol, D-camphor, eucalyptol, farnesol, gamma-terpinene, geraniol, geranyl acetone, isoborneol, limonene, linalool, linalool oxide, myrcene, myrtenol, nerol, nerolidol, p,a-dimethylstyrene, p-cymene, terpinolene, and mixtures thereof.

22. The alcoholic beverage replica of claim 20 or claim 21, wherein the one or more terpenes or isoprenoids are present in a total amount of 0.0002 mg/L to 95 mg/L.

23. The alcoholic beverage replica of any one of claims 1 to 22, wherein the one or more additional VOCs comprise one or more phenols.

24. The alcoholic beverage replica of claim 23, wherein the one or more phenols are selected from the group consisting of 2,4,6-trimethylphenol (mesitol), 2-methoxy-4-

methylphenol, 2-methoxy-4-propyl-phenol, 4-ethylphenol, eugenol, guaiacol, p-cresol, and mixtures thereof.

25. The alcoholic beverage replica of claim 23 or claim 24, wherein the one or more phenols are present in a total amount of 0.00007 mg/L to 5 mg/L.

26. The alcoholic beverage replica of any one of claims 1 to 25, wherein the one or more additional VOCs comprise one or more lactones.

27. The alcoholic beverage replica of claim 26, wherein the one or more lactones are selected from the group consisting of delta-decalactone, gamma-decalactone, gamma-hexalactone, gamma-nonalactone, gamma-octalactone, gamma-undecalactone, Jasmine lactone, whiskey lactone, and mixtures thereof.

28. The alcoholic beverage replica of claim 26 or claim 27, wherein the one or more lactones are present in a total amount of 0.00007 mg/L to 10 mg/L.

29. The alcoholic beverage replica of any one of claims 1 to 28, wherein the one or more additional VOCs comprise one or more amines or pyrazines.

30. The alcoholic beverage replica of claim 29, wherein the one or more amines or pyrazines are selected from the group consisting of 2-acetylpyridine, 2-isobutyl-3-methoxypyrazine, 2-isopropyl-3-methoxypyrazine, and mixtures thereof.

31. The alcoholic beverage replica of claim 29 or claim 30, wherein the one or more amines or pyrazines are present in a total amount of 0.00007 mg/L to 0.09 mg/L.

32. The alcoholic beverage replica of any one of claims 1 to 31, wherein the one or more additional VOCs comprise one or more thiols, thiazoles, or sulfides.

33. The alcoholic beverage replica of claim 31 or claim 32, wherein the one or more thiols, thiazoles, or sulfides are selected from the group consisting of 3-mercaptohexylacetate, dimethyl sulfide, furfuryl mercaptan, and mixtures thereof.

34. The alcoholic beverage replica any one of claims 31 to 33, wherein the one or more thiols, thiazoles, or sulfides are present in a total amount of 0.00007 mg/L to 0.45 mg/L.

35. The alcoholic beverage replica of any one of claims 1 to 34, wherein the one or more additional VOCs comprise one or more ethers.

36. The alcoholic beverage replica of claim 35, wherein the one or more ethers comprise vanillyl ethyl ether.

37. The alcoholic beverage replica of claim 35 or claim 36, wherein the one or more ethers are present in a total amount of 0.01 to 0.05 mg/L.

38. The alcoholic beverage replica of any one of claims 1 to 37, wherein the one or more additional VOCs comprise one or more acetals.

39. The alcoholic beverage replica of claim 38, wherein the one or more acetals are selected from the group consisting of acetal, acetaldehyde diethyl acetal, phenethyl acetaldehyde dimethyl acetal, and mixtures thereof.

40. The alcoholic beverage replica of claim 38 or claim 39, wherein the one or more acetals are present in an amount of 0.15 mg/L to 28 mg/L.

41. The alcoholic beverage replica of any one of claims 1 to 40, wherein the one or more additional VOCs comprise one or more furans.

42. The alcoholic beverage replica of claim 41, wherein the one or more furans comprise 2-pentyl furan.

43. The alcoholic beverage replica of any one of claims 1 to 42, wherein the one or more additional VOCs comprise at least 5 compounds selected from the group consisting of 1-decanol, 1-octanol, 1-octen-3-ol, 2,3-pentadione, 2,4,6-trimethylphenol (mesitol), 2-heptanone, 2-isopropyl-3-methoxypyrazine, 2-methyl-1-butanol, 2-methylbutyl acetate, 2-methylbutyraldehyde, 2-undecanone, 3-(methylthio)-1-propanol, 3,7-dimethyl-6-

octanoic acid, 3,7-dimethyl-6-octenoic acid, 3-methyl-1-pentanol, 4-carvomenthenol, 4-ethylphenol, 5-ethyl-3-hydroxy-4-methyl-2(5H)-furanone (maple furanone), 5-methyl furfural, 6-methyl-5-hepten-2-one, acetal, diethyl acetal, acetophenone, amyl alcohol, a-phellandrene, a-terpineol, b-caryophellene, benzaldehyde, beta pinene, butanol, butyl acetate, butyl formate, cinnamaldehyde, cis-2-hexenol, citral, citronellol, D-camphor, delta-decalactone, diethyl malate, diethyl succinate, dimethyl anthranilate, DL-3-methyl-2-butanol, ethyl 3-hydroxyhexanoate, ethyl acetate, ethyl anthranilate, ethyl benzoate, ethyl butanoate, ethyl decanoate, ethyl heptanoate, ethyl lactate, ethyl laurate, ethyl levulinate, ethyl myristate, ethyl nonanoate, ethyl palmitate, ethyl phenyl acetate, ethyl propionate, ethyl undecanoate, ethyl valerate, ethyl-3-hydroxybutyrate, farnesol, furfural, gamma-decalactone, gamma-hexalactone, gamma-nonalactone, gamma-octalactone, geraniol, geranyl acetone, hexadecanol, hexanol, hexyl hexanoate, isoamyl acetate, isoamyl octanoate, isobutanol, isobutyl acetate, isobutyraldehyde, limonene, linalool oxide, linalyl acetate, maltol, methyl acetate, methyl anthranilate, methyl cyclopentenolone, methyl decanoate, methyl hexanoate, methyl laurate, methyl salicylate, methyl β-naphthyl ketone, myrtenol, nerol, nerolidol, nonanoic acid, octanoic acid, p,a-dimethylstyrene, p-cymene, phenethyl acetate, phenethyl formate, phenethyl isobutyrate, phenethyl octanoate, phenethyl propionate, phenylacetaldehyde, propanoic acid, propanol, propyl acetate, propyl butyrate, salicylaldehyde, terpinolene, trans-2-heptenal, trans-2-hexen-1-al, trans-2-hexen-1-ol, trans-2-pentenal, vanillyl ethyl ether, and whiskey lactone.

44. The alcoholic beverage replica of any one of claims 1 to 43, wherein the one or more additional VOCs comprise at least 1 compound selected from the group consisting of (-)alpha-pinene, (-)cis-rose-oxide, 2-(methylthio)ethanol, 2-acetylpyridine, 2-isobutyl-3-methoxypyrazine, 2-methoxy-4-methylphenol, 2-methoxy-4-propyl-phenol, 2-methylbutyl isovalerate, 2-nonanone, 3-carene, 3-mercaptohexylacetate, 3-nonen-2-one, acetoin, a-ionone, amyl butyrate, benzyl acetate, benzyl alcohol, beta-ionone, butyl isovalerate, carvone, cis-3-hexen-1-ol, cis-3-hexenyl acetate, ethyl salicylate, ethyl(methylthio) acetate, ethyl-2-mercaptopropionate, ethyl-trans-2-butenoate, ethyl-trans-3-hexenoate, eucalyptol, furfuryl mercaptan, gamma-terpinene, gamma-

undecalactone, geranyl acetate, heptyl acetate, hexanoic acid, hexyl acetate, isoamyl hexanoate, isoamyl isobutyrate, isoamyl isovalerate, isoborneol, jasmine lactone, linalyl butyrate, linalyl formate, methyl dihydrojasmonate, methyl octanoate, methyl vanillate, nonanal, octyl acetate, p-anisaldehyde, phenethyl acetaldehyde dimethyl acetal, phenethyl butyrate, propyl hexanoate, valeraldehyde.

45. The alcoholic beverage replica of any one of claims 1 to 44, further comprising one or more non-volatile compounds.

46. The alcoholic beverage replica of claim 45, wherein the one or more non-volatile compounds comprise one or more non-volatile compounds that are not present in a corresponding traditional alcoholic beverage.

47. The alcoholic beverage replica of claim 46, wherein the one or more non-volatile compounds that are not present in a traditional alcoholic beverage are selected from the group consisting of cysteine, cystine, epicatechin gallate, methyl 2-pyrrolyl ketone, and rutin.

48. The alcoholic beverage replica of any one of claims 45 to 47, wherein the one or more non-volatile compounds do not comprise one or more non-volatile compounds that are present in a corresponding traditional alcoholic beverage.

49. The alcoholic beverage replica of claim 48, wherein the one or more non-volatile compounds that are present in a corresponding traditional alcoholic beverage are selected from the group consisting of 4-guanidinobutyric acid, adenine, cytidine, cytosine, homoserine, and uracil.

50. The alcoholic beverage of any one of claims 45 to 49, wherein the one or more non-volatile compounds comprise at least 5 compounds selected from the group consisting of 2,3,5,6-tetramethylpyrazine, 2,3,5-trimethylpyrazine, 2,3-dimethylpyrazine, 2-isopropylmalic acid, 3,4-dihydroxybenzoic acid, 4-guanidinobutyric acid, acetic acid, acetovanillone, adenine, adipic acid, alanine, arabitol, arginine, aspartic acid, betaine, caffeic acid, camphoric acid, carnitine, catechin, choline, citric acid, citrulline, coumaric

acid, cytidine, cytosine, D-glucuronic acid, disodium 5' ribonucleotides (5'-guanylate & 5'-inosinate), ellagic acid, epicatechin, fructose, fucose, fumaric acid, GABA, galactose, gallic acid, glucose, glutamic acid, guanine, histidine, homoserine, kynurenic acid, lactic acid, lysine, malic acid, mannitol, methionine, methyl gallate, monosodium glutamate, inositol, phenylalanine, pipecolinic acid, proline, propyl gallate, pyridine, pyridoxine, pyruvic acid, quercetin, quinic acid, rhamnose, ribose, salicylic acid, serine, sorbitol, succinic acid, syringaldehyde, tartaric acid, trans-4-hydroxyproline, trans-ferulic acid, uracil, vanillic acid, and vanillin.

51. The alcoholic beverage replica of any one of claims 45 to 50, wherein the one or more non-volatile compounds comprise at least 1 compound selected from the group consisting of 2-furoic acid, asparagine, beta-alanine, carnosine, cinnamic acid, D-gluconolactone (gluconic acid), glucosamine, glutamine, glycerol, glycine, hesperetin, isoleucine, leucine, mannose, ornithine, pantothenic acid, piperine, polydatin, resveratrol, sinapinic acid, sorbic acid, a surfactant, syringic acid, threonine, tryptamine, tryptophan, tyramine, tyrosine, valine, and xylose.

52. The alcoholic beverage replica of any one of claims 45 to 51, wherein the non-volatile compounds comprise one or more compounds selected from the group consisting of a surfactant, gum arabic, and pectin.

53. A method of making an alcoholic beverage replica, the method comprising:

combining ingredients comprising:

water;

ethanol; and

one or more additional volatile organic compounds (VOCs),

wherein the one or more additional VOCs comprise at least one VOC selected from the group consisting of 1-para-menthene-8-thiol, 2-isopropyl-4-methyl thiazole, 3-phenylpropanal, 4,5,6,7-tetrahydro-3,6-dimethylbenzofuran, 5-methyl-2-phenyl-2-hexenal, allyl hexanoate, cis-3-hexenyl valerate, methionyl butyrate, methyl-2-pyrrolyl ketone, omega-pentadecalactone, and phenethyl tiglate.

54. The method of claim 53, wherein the one or more additional VOCs do not comprise at least one VOC selected from the group consisting of 2,4,6-trimethylphenol (mesitol), 5-ethyl-3-hydroxy-4-methyl-2(5H)-furanone (maple furanone), 6-methyl-5-hepten-2-one, b-caryophellene, cis-2-hexenol, hexadecanol, methyl cyclopentenolone, nonanoic acid, and terpinolene.

55. The method of claim 53 or claim 54, wherein the ingredients further comprise a non-volatile compound, and wherein the non-volatile compound is a sugar or a sugar alcohol, an acid, a pH-modifying salt, a nucleotide monophosphate, an amino acid, or a combination thereof.

56. The method of claim 55, wherein the acid comprises tartaric acid, malic acid, citric acid, succinic acid, lactic acid, acetic acid, or a combinations thereof.

57. The method of claim 55 or claim 56, wherein the sugar or sugar alcohol comprises glycerol, glucose, fructose, sorbitol, inositol, mannose, mannitol, or a combination thereof.