

**Supporting information for Diagnosis of odor issues in water and sediments
of a shallow water reservoir: odor fingerprints, odor-causing algae and microbial
communities**

Shuwei Chen ^{1,2}, Wanqing Liu ², Chunmiao Wang ^{2,3*}, Xinying Chang ⁴, Anqi Jia ²,
Jianwei Yu ^{3,5}, Min Yang ^{2,3**}

¹ Henan Institute of Advanced Technology, Zhengzhou University, Zhengzhou
450052, China;

² National Engineering Research Center of Industrial Wastewater Detoxication and
Resource Recovery, Research Center for Eco-Environmental Sciences, Chinese
Academy of Sciences, Beijing 100085, China;

³ University of Chinese Academy of Sciences, Beijing, 100049, China;

⁴ Beijing Drainage Group Co. Ltd (BDG), Beijing, 100124, China;

⁵ Key Laboratory of Environmental Aquatic Chemistry, State Key Laboratory of
Regional Environment and Sustainability, Research Center for Eco-Environmental
Sciences, Chinese Academy of Sciences, Beijing, 100085, China.

Contact information:

*Corresponding author, E-mail: cmwang@rcees.ac.cn (Chunmiao Wang); Tel: 010-
62849149; Fax: 86-10-62923541.

**Corresponding author, E-mail: yangmin@rcees.ac.cn (Min Yang); Tel: 86-10-
62923475; Fax: 86-10-62923541.

Table A.1 Method parameters for multi-ion reaction monitoring of odorant standards.

| Compounds | IUPAC name | OTC ^a | CAS | Target ion Ch ₁ m/z | Ch ₁ ^b CE ^c | Reference ion 1 m/z | Ch ₂ CE | Reference ion 2 m/z | Ch ₃ CE |
|--------------------------|-----------------------------------|------------------|-----------|-----------------------------------|---|------------------------|-----------------------|------------------------|-----------------------|
| Diethyl sulfide | ethylsulfanylethane | ng/L | 352-93-2 | 90.00>75.10 | 12 | 90.00>62.00 | 9 | 90.00>47.10 | 18 |
| Dimethyl disulfide | methyldisulfanyl)methane | N/A | 624-92-0 | 94.00>79.00 | 15 | 94.00>61.00 | 9 | 94.00>64.00 | 27 |
| Isopropyl sulfide | 2-propan-2-ylsulfanylpropane | 30 | 625-80-9 | 103.00>61.00 | 6 | 118.00>103.10 | 9 | 118.00>43.10 | 18 |
| Dipropyl sulfide | 1-propylsulfanylpropane | 51 | 111-47-7 | 76.00>42.10 | 6 | 118.00>76.10 | 6 | 89.00>61.00 | 6 |
| Diethyl disulfide | (ethylsulfanyl)ethane | 67 | 110-81-6 | 122.00>94.00 | 9 | 122.00>66.00 | 18 | 94.00>66.00 | 6 |
| Dimethyl trisulfide | (methyltrisulfanyl)methane | 70 | 3658-80-8 | 126.00>79.00 | 18 | 79.00>64.00 | 18 | 126.00>61.10 | 6 |
| Dibutyl sulfide | 1-butylsulfanylbutane | 10 | 544-40-1 | 90.00>56.10 | 6 | 146.00>56.10 | 18 | 146.00>90.10 | 9 |
| Propyl disulfide | 1-(propylsulfanyl)propane | 67 | 629-19-6 | 150.00>43.10 | 18 | 108.00>43.10 | 12 | 150.00>108.10 | 6 |
| Amyl sulphide | 1-pentylsulfanylpentane | 12 | 872-10-6 | 70.00>55.10 | 9 | 103.00>69.10 | 9 | 103.00>41.10 | 18 |
| n-butyl disulfide | 1-(butylsulfanyl)butane | 1.1 | 629-45-8 | 178.00>57.20 | 18 | 122.00>57.10 | 6 | 178.00>122.10 | 6 |
| Diamyl disulfide | 1-(pentylsulfanyl)pentane | 0.04 | 112-51-6 | 206.00>43.10 | 21 | 136.00>43.10 | 18 | 103.00>69.10 | 12 |
| Diphenyl sulfide | phenylsulfanylbenzene | N/A | 139-66-2 | 186.00>184.10 | 27 | 186.00>77.10 | 27 | 185.00>152.10 | 27 |
| Isopropyl propyl sulfide | 1-propan-2-ylsulfanylpropane | N/A | 5008-73-1 | 118.00>76.10 | 9 | 103.00>61.00 | 6 | 118.00>103.10 | 9 |
| Diisopropyl disulfide | 2-(propan-2-ylsulfanyl)propane | N/A | 4253-89-8 | 150.00>108.00 | 6 | 108.00>66.00 | 6 | 66.00>64.00 | 21 |
| Diisopropyl trisulfide | 2-(propan-2-yltrisulfanyl)propane | 1.89 | 5943-34-0 | 182.00>140.00 | 6 | 182.00>75.10 | 12 | 98.00>64.00 | 12 |
| Hexanal | hexanal | N/A | 66-25-1 | 56.00>41.10 | 12 | 82.00>67.10 | 6 | 72.00>57.10 | 12 |
| Heptaldehyde | heptanal | 4500 | 111-71-7 | 70.00>55.10 | 9 | 70.00>42.00 | 6 | 81.00>41.10 | 18 |
| Benzaldehyde | benzaldehyde | 3000 | 100-52-7 | 105.00>77.10 | 12 | 106.00>77.10 | 18 | 77.00>51.10 | 18 |

| | | | | | | | | | |
|--------------------------------|---|---------|------------|---------------|----|---------------|----|---------------|----|
| 2,4-Heptadienal | (2E,4E)-hepta-2,4-dienal | 4500 | 4313-3-5 | 81.00>53.10 | 18 | 110.00>81.00 | 6 | 79.00>77.10 | 12 |
| 2-Octenal | (E)-oct-2-enal | 2500 | 2548-87-0 | 83.00>55.10 | 9 | 70.00>42.00 | 6 | 70.00>55.10 | 9 |
| Nonanal | nonanal | 3000 | 124-19-6 | 82.00>67.10 | 6 | 70.00>55.10 | 9 | 98.00>56.10 | 6 |
| 2,6-Nonadienal | (2E,6Z)-nona-2,6-dienal | 2530 | 557-48-2 | 69.00>41.00 | 6 | 70.00>42.10 | 9 | 69.00>39.00 | 21 |
| Decanal | decanal | 10 | 112-31-2 | 82.00>67.10 | 6 | 71.00>43.10 | 6 | 82.00>41.10 | 24 |
| 2,4-Decadienal | (2E,4E)-deca-2,4-dienal | 230 | 2363-88-4 | 81.00>53.10 | 18 | 67.00>41.10 | 12 | 95.00>67.10 | 9 |
| β-Cyclocitral | 2,6,6-trimethylcyclohexene-1-carbaldehyde | 29 | 432-25-7 | 137.00>109.20 | 6 | 152.00>137.20 | 9 | 152.00>123.10 | 6 |
| Vanillin | 4-hydroxy-3-methoxybenzaldehyde | 2200 | 121-33-5 | 151.00>123.00 | 9 | 152.00>123.10 | 18 | 151.00>108.00 | 18 |
| 2,4-Octadienal | (2E,4E)-octa-2,4-dienal | 133 | 5577-44-6 | 81.00>53.10 | 18 | 124.10>81.10 | 6 | 67.05>41.10 | 9 |
| 2,3,5,6-Tetramethylpyrazine | 2,3,5,6-tetramethylpyrazine | N/A | 1124-11-4 | 136.00>54.10 | 12 | 136.00>95.10 | 9 | 136.00>121.10 | 12 |
| Pyrazine | pyrazine | 771000 | 290-37-9 | 80.00>53.10 | 12 | 81.00>54.10 | 12 | 80.00>78.00 | 45 |
| 2-isopropyl-3-methoxy pyrazine | 2-methoxy-3-propan-2-ylpyrazine | 1600000 | 25773-40-4 | 152.00>137.10 | 9 | 137.00>109.10 | 9 | 152.00>124.10 | 6 |
| 2-isobutyl-3-methoxy pyrazine | 2-methoxy-3-(2-methylpropyl)pyrazine | 7000 | 24683-00-9 | 124.00>94.10 | 12 | 124.00>81.10 | 9 | 124.00>42.10 | 24 |
| Dimethylpyrazine | 2,6-dimethylpyrazine | 2000 | 108-50-9 | 108.00>42.10 | 15 | 108.00>40.10 | 21 | 108.00>81.10 | 9 |
| 2-Ethyl-5-methylpyrazine | 2-ethyl-5-methylpyrazine;2-ethyl-6-methylpyrazine | 2540 | 13360-64-0 | 122.00>94.10 | 15 | 122.00>66.10 | 27 | 122.00>53.10 | 27 |
| 2,3,5- | 2,3,5-trimethylpyrazine | 100000 | 14667-55-1 | 122.00>42.10 | 15 | 122.00>81.10 | 9 | 81.05>42.10 | 6 |

| | | | | | | | | | |
|----------------------------------|--|---------|----------|---------------|----|---------------|----|---------------|----|
| Trimethylpyrazine | | | | | | | | | |
| Ethylbenzene | ethylbenzene | 385 | 100-41-4 | 106.00>91.10 | 12 | 91.00>65.10 | 18 | 91.00>39.10 | 27 |
| Para-xylene | 1,4-xylene | 150000 | 106-42-3 | 106.00>91.10 | 12 | 91.00>65.10 | 18 | 91.00>39.10 | 27 |
| 1,4-dichlorobenzene | 1,4-dichlorobenzene | 100000 | 106-46-7 | 146.00>111.00 | 18 | 146.00>75.10 | 24 | 111.00>75.00 | 12 |
| Indane | 2,3-dihydro-1H-indene | 440 | 496-11-7 | 118.00>115.10 | 24 | 115.00>89.10 | 18 | 118.00>91.10 | 24 |
| Isopropylbenzene | cumene | 1860 | 98-82-8 | 105.00>77.10 | 18 | 120.00>105.10 | 9 | 105.00>79.10 | 9 |
| Biphenyl | 1,1'-biphenyl | 197 | 92-52-4 | 154.00>152.10 | 27 | 153.00>151.10 | 30 | 154.00>115.10 | 27 |
| Nitrobenzene | nitrobenzene | 190 | 98-95-3 | 77.00>51.00 | 15 | 123.00>77.10 | 15 | 123.00>93.10 | 6 |
| 1-Methylnaphthalene | phenylsulfanylbenzene | 3000 | 90-12-0 | 141.00>115.10 | 21 | 142.00>115.10 | 27 | 115.00>89.10 | 18 |
| 3-Methylstyrene | 1-ethenyl-3-methylbenzene | 25300 | 100-80-1 | 117.00>115.10 | 15 | 117.00>91.10 | 21 | 118.00>91.10 | 27 |
| o-Cresol | 2-methylphenol | 1937000 | 95-48-7 | 108.00>77.10 | 24 | 108.00>79.10 | 18 | 107.00>79.10 | 9 |
| 4-Bromophenol | 4-bromophenol | 14700 | 106-41-2 | 172.00>65.10 | 21 | 174.00>65.10 | 24 | 93.00>65.10 | 9 |
| m-Cresol | 4(3)-methylphenol | 2330 | 108-39-4 | 108.00>77.10 | 27 | 108.00>79.10 | 18 | 107.00>51.10 | 27 |
| o-Nitrophenol | 2-nitrophenol | 12800 | 88-75-5 | 139.00>81.10 | 18 | 139.00>109.10 | 9 | 139.00>65.10 | 21 |
| 2,6-Dimethylphenol | 2,6-dimethylphenol | 1000 | 576-26-1 | 107.00>77.10 | 18 | 122.00>107.10 | 12 | 122.00>77.10 | 27 |
| 2-chlorophenol | 2-chlorophenol | 220 | 95-57-8 | 128.00>64.10 | 18 | 130.00>64.10 | 18 | 128.00>92.10 | 9 |
| Indole | 1H-indole | 510 | 120-72-9 | 117.00>90.10 | 18 | 89.00>63.00 | 18 | 90.00>63.10 | 24 |
| 3-Methylindole | 3-methyl-1H-indole | 1000 | 83-34-1 | 130.00>77.10 | 24 | 130.00>103.10 | 15 | 103.00>77.10 | 12 |
| bis(2-Chloro-1-methylethyl)ether | 1-chloro-2-(1-chloropropan-2-yloxy)propane | 1020 | 108-60-1 | 107.00>41.10 | 18 | 121.00>45.00 | 6 | 121.00>41.10 | 18 |
| bis(2-Chloroethyl)ether | 1-chloro-2-(2-chloroethoxy)ethane | 143 | 111-44-4 | 93.00>63.00 | 6 | 95.00>65.00 | 6 | 63.00>61.00 | 24 |

| | | | | | | | | | |
|-----------------------------|--|---------|------------|---------------|----|---------------|----|---------------|----|
| 2,4,6-Tribromoanisole | 1,3,5-tribromo-2-methoxybenzene | 360000 | 607-99-8 | 344.00>328.50 | 21 | 329.00>300.50 | 24 | 344.00>300.40 | 33 |
| 2,3,4-Trichloroanisole | 1,2,3-trichloro-4-methoxybenzene | 82 | 54135-80-7 | 195.00>167.00 | 12 | 197.00>168.90 | 12 | 210.00>167.00 | 21 |
| 2,3,6-Trichloroanisole | 1,2,4-trichloro-3-methoxybenzene | 0.1-2 | 50375-10-5 | 210.00>166.90 | 21 | 212.00>168.90 | 21 | 210.00>194.90 | 12 |
| 2,4,6-Trichloroanisole | 1,3,5-trichloro-2-methoxybenzene | 0.2-2 | 87-40-1 | 195.00>166.90 | 18 | 197.00>169.00 | 18 | 210.00>194.90 | 12 |
| Pentachloroanisole | 1,2,3,4,5-pentachloro-6-methoxybenzene | 130 | 1825-21-4 | 265.00>236.80 | 18 | 280.00>236.80 | 24 | 280.00>264.80 | 12 |
| Diphenyl ether | phenoxybenzene | 240-400 | 101-84-8 | 170.00>141.10 | 18 | 141.00>115.10 | 18 | 170.00>77.10 | 21 |
| Ethyl-tert-butylether | 2-ethoxy-2-methylpropane | 32 | 637-92-3 | 87.00>59.10 | 9 | 59.00>43.00 | 21 | 59.00>41.00 | 9 |
| Methyl-tert-amylether | 2-methoxy-2-methylbutane | 31 | 994-05-8 | 73.00>43.00 | 18 | 43.00>41.10 | 6 | 73.00>45.10 | 9 |
| Ethylene glycol butyl ether | 2-butoxyethanol | 66 | 111-76-2 | 57.00>41.00 | 6 | 57.00>39.00 | 21 | 41.00>39.00 | 9 |
| 1-Penten-3-one | pent-1-en-3-one | N/A | 1629-58-9 | 84.00>55.00 | 6 | 83.00>55.10 | 15 | 84.00>41.10 | 12 |
| Cyclohexanone | cyclohexanone | 1250 | 108-94-1 | 98.00>55.10 | 18 | 98.00>80.10 | 6 | 98.00>69.10 | 9 |
| 1-Octen-3-one | oct-1-en-3-one | 8300000 | 4312-99-6 | 70.00>55.00 | 6 | 70.00>43.00 | 9 | 70.00>41.10 | 18 |
| 6-Methyl-5-hepten-2-one | 6-methylhept-5-en-2-one | 60-130 | 110-93-0 | 41.00>39.00 | 9 | 55.00>39.00 | 18 | 43.00>41.10 | 6 |
| cis-3-hexenyl acetate | [(Z)-hex-3-enyl] acetate | 500 | 3681-71-8 | 82.00>67.10 | 9 | 67.00>41.10 | 15 | 82.00>41.10 | 21 |

| | | | | | | | | | |
|--------------------|--|---------|------------|---------------|----|---------------|----|--------------|----|
| Butyl butyrate | butyl butanoate | 1000 | 109-21-7 | 71.00>43.10 | 6 | 89.00>43.10 | 12 | 71.00>41.00 | 18 |
| cis-3-Hexenol | (Z)-hex-3-en-1-ol | 250000 | 928-96-1 | 82.00>67.10 | 6 | 67.00>41.10 | 12 | 41.00>39.00 | 9 |
| n-Propyl butyrate | propyl butanoate | 70 | 105-66-8 | 71.00>43.10 | 9 | 89.00>43.10 | 12 | 71.00>41.10 | 18 |
| 2-methylisoborneol | 1,2,7,7-tetramethylbicyclo[2.2.1]heptan-2-ol | 800 | 2371-42-8 | 95.00>67.10 | 15 | 95.00>55.10 | 18 | 108.00>93.10 | 12 |
| Geosmin | (4S,4aS,8aR)-4,8a-dimethyl-1,2,3,4,5,6,7,8-octahydronaphthalen-4a-ol | 10 | 19700-21-1 | 112.00>97.10 | 12 | 112.00>83.10 | 12 | 112.00>69.10 | 21 |
| Linalool | 3,7-dimethylocta-1,6-dien-3-ol | 4 | 78-70-6 | 71.00>43.00 | 9 | 93.00>77.10 | 12 | 93.00>91.10 | 9 |
| (±)-Camphor | 1,7,7-trimethylbicyclo[2.2.1]heptan-2-one | 6000 | 76-22-2 | 95.00>55.10 | 18 | 95.00>67.10 | 12 | 81.00>41.10 | 18 |
| L-Menthol | (1R,2S,5R)-5-methyl-2-propan-2-ylcyclohexan-1-ol | 1000000 | 2216-51-5 | 81.00>41.00 | 18 | 71.00>43.00 | 6 | 95.00>67.10 | 9 |
| Geraniol | (2E)-3,7-dimethylocta-2,6-dien-1-ol | 2280000 | 106-24-1 | 69.00>41.00 | 6 | 69.00>39.00 | 21 | 41.00>39.00 | 9 |
| Nerol | (2Z)-3,7-dimethylocta-2,6-dien-1-ol | 75000 | 106-25-2 | 69.00>41.00 | 6 | 93.00>77.00 | 12 | 69.00>39.00 | 21 |
| (E)-β-Ionone | (E)-4-(2,6,6-trimethylcyclohexen-1-yl)but-3-en-2-one | 300000 | 79-77-6 | 177.00>147.10 | 24 | 177.00>162.20 | 18 | 91.00>65.10 | 18 |
| 1,8-Cineole | 1,3,3-trimethyl-2- | 7 | 470-82-6 | 108.00>93.10 | 9 | 93.00>77.10 | 18 | 81.00>41.10 | 18 |

| | | | | | | | | | |
|---------------------------------------|---|--------|------------|--------------|----|-------------|----|--------------|----|
| | oxabicyclo[2.2.2]octane | | | | | | | | |
| Bornyl acetate | [(1S,2R,4S)-1,7,7-trimethyl-2-bicyclo[2.2.1]heptanyl] acetate | 260 | 76-49-3 | 93.00>77.10 | 15 | 95.00>67.10 | 12 | 95.00>55.10 | 18 |
| Cinene | 1-methyl-4-prop-1-en-2-ylcyclohexene | 6200 | 138-86-3 | 68.00>53.00 | 12 | 67.00>65.10 | 12 | 68.00>65.20 | 15 |
| Pyridine | pyridine | 4000 | 110-86-1 | 79.00>52.00 | 18 | 79.00>50.10 | 24 | 78.00>51.00 | 12 |
| 2-Methylpyridine | 2-methylpyridine | N/A | 109-06-8 | 93.00>66.10 | 12 | 93.00>78.10 | 18 | 66.00>40.10 | 12 |
| 2,4,6-Trimethylpyridine | 2,4,6-trimethylpyridine | N/A | 108-75-8 | 121.00>79.10 | 18 | 79.00>77.10 | 12 | 121.00>77.10 | 21 |
| Thiazole | 1,3-thiazole | N/A | 288-47-1 | 85.00>58.00 | 12 | 87.00>60.00 | 18 | 58.00>45.00 | 24 |
| 2-Acetylthiazole | 1-(1,3-thiazol-2-yl)ethanone | 2330 | 24295-03-2 | 99.00>59.00 | 21 | 99.00>54.10 | 15 | 99.00>72.10 | 9 |
| 1,4-Dioxane | 1,4-dioxane | 3000 | 123-91-1 | 88.00>58.00 | 9 | 88.00>44.10 | 6 | 88.00>43.00 | 18 |
| 1,3-Dioxane | 1,3-dioxane | 785000 | 505-22-6 | 87.00>59.10 | 9 | 87.00>41.10 | 18 | 59.00>41.00 | 6 |
| 2-Ethyl-2-methyl-1,3-dioxolane | 2-ethyl-2-methyl-1,3-dioxolane | 189000 | 126-39-6 | 87.00>43.00 | 18 | 57.00>42.00 | 27 | 43.00>41.00 | 6 |
| 1,3-Dioxolane | 1,3-dioxolane | 30 | 646-06-0 | 73.00>45.00 | 12 | 73.00>43.10 | 21 | 45.00>43.00 | 18 |
| 2,2-Dimethyl-1,3-dioxolane | 2,2-dimethyl-1,3-dioxolane | 248000 | 2916-31-6 | 87.00>43.00 | 18 | 42.00>40.00 | 9 | 43.00>41.10 | 9 |
| 2-Methyl-1,3-dioxolane | 2-methyl-1,3-dioxolane | N/A | 497-26-7 | 73.00>45.00 | 12 | 73.00>43.00 | 24 | 45.00>43.00 | 12 |
| 2-ethyl-4-methyl-1-3-dioxolane(2-EMD) | 2-ethyl-4-methyl-1,3-dioxolane | 220000 | 4359-46-0 | 87.00>59.10 | 9 | 59.00>41.10 | 6 | 87.00>41.00 | 15 |

| | | | | | | | | | |
|--|--|--------|------------|---------------|----|---------------|----|---------------|----|
| 2-ethyl-5-5-dimethyl-1-3-dioxane (2-EDD) | 2-ethyl-5,5-dimethyl-1,3-dioxane | 5-884 | 768-58-1 | 56.00>41.00 | 9 | 69.00>41.00 | 9 | 56.00>39.00 | 21 |
| Cyclohexene | cyclohexene | 10 | 110-83-8 | 67.00>65.10 | 12 | 67.00>51.00 | 24 | 54.00>51.10 | 24 |
| 1-Octene | oct-1-ene | 390 | 111-66-0 | 43.00>41.10 | 6 | 41.00>39.00 | 9 | 55.00>39.00 | 18 |
| Phenylethylene | styrene | 358 | 100-42-5 | 104.00>78.10 | 15 | 78.00>52.10 | 21 | 104.00>52.10 | 27 |
| 3-Methyl-1-cyclohexene | 3-methylcyclohexene | 65000 | 591-48-0 | 81.00>79.10 | 12 | 81.00>53.10 | 15 | 67.00>65.00 | 12 |
| Dicyclopentadiene | tricyclo[5.2.1.0 _{2,6}]deca-3,8-diene | 690000 | 77-73-6 | 66.00>51.00 | 21 | 66.00>63.10 | 27 | 66.00>62.00 | 45 |
| Tonalide | 1-(3,5,5,6,8,8-hexamethyl-6,7-dihydronaphthalen-2-yl)ethanone | 25 | 21145-77-7 | 258.00>243.20 | 9 | 243.00>187.20 | 9 | 243.00>57.20 | 21 |
| Galaxolide (HHCB) | 4,6,6,7,8,8-hexamethyl-1,3,4,7-tetrahydrocyclopenta[<i>g</i>]isochromene | N/A | 1222-05-5 | 243.00>213.20 | 9 | 258.00>243.20 | 9 | 243.00>143.20 | 21 |
| Tetrahydrofuran | oxolane | 30 | 109-99-9 | 42.00>40.00 | 6 | 72.00>42.00 | 9 | 41.00>39.00 | 9 |

Note:

^a The Odor threshold concentrations are cited from Li et al. (2022)¹, Wang et al. (2019)², Lubran et al. (2005)³, Khiari et al. (1995)⁴, Fráter et al. (1999)⁵, Sesha Pochiraju et al. (2021)⁶, Wang et al.(2021)⁷;

^b channel;

^c collision energy at the corresponding channel, V.

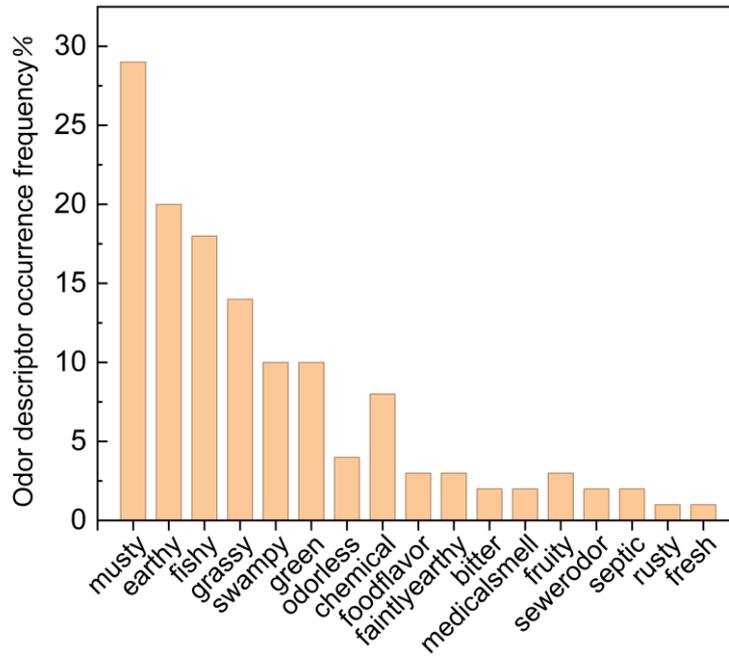
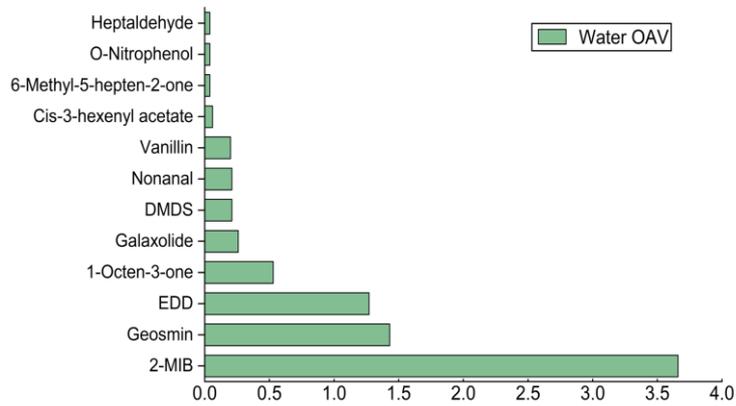
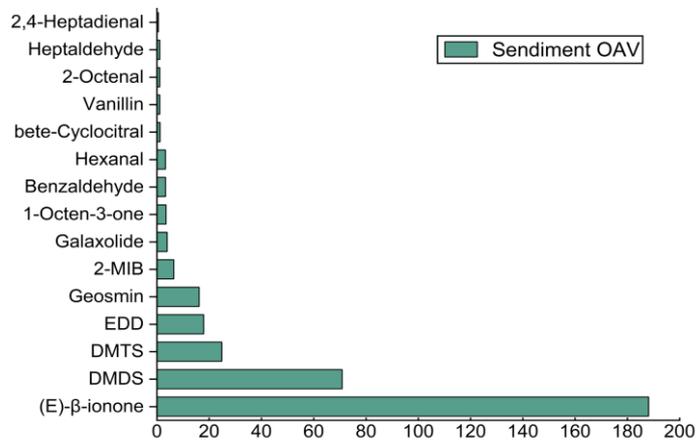


Fig.A.1 Odor descriptor occurrence frequency in samples.



(a)



(b)

Fig.A.2 Maximum odor activity value (OAV) ranking of odorants detected in (a) water and (b) sediment sample.

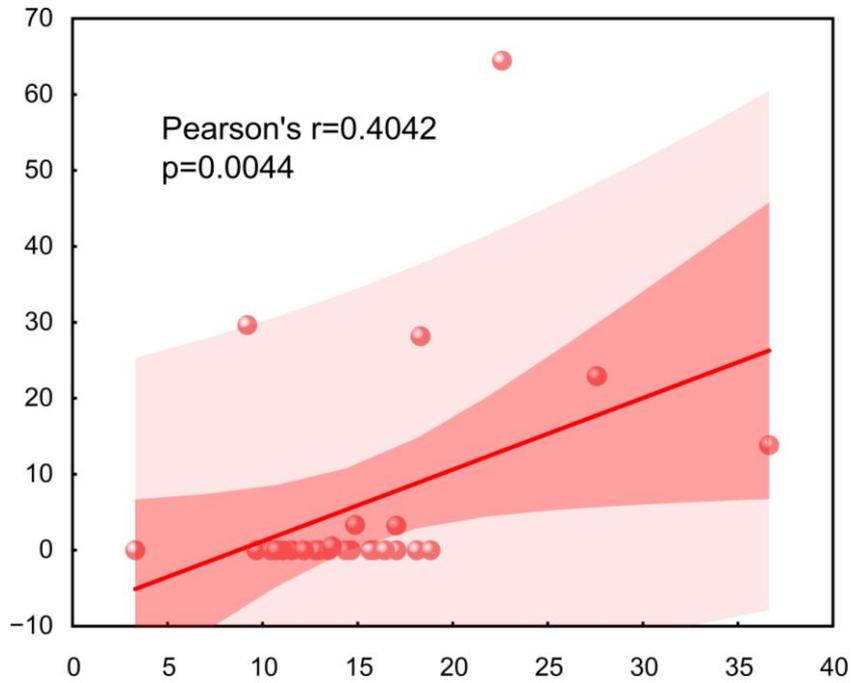


Fig.A.3. Correlation analysis of 2-MIB concentrations in water and sediment.

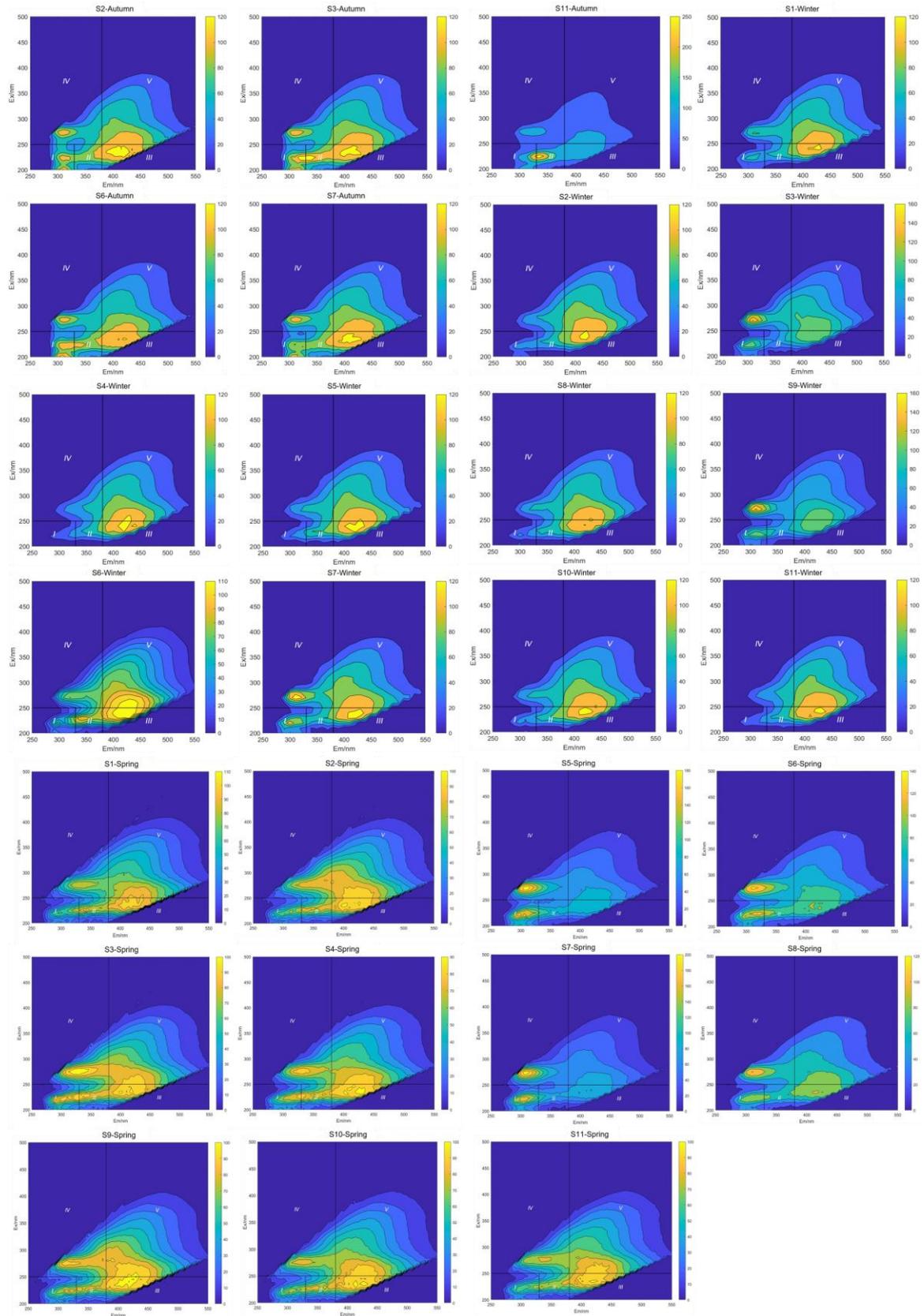


Fig.A.4 Three-dimensional fluorescence spectrum of water sampling points.

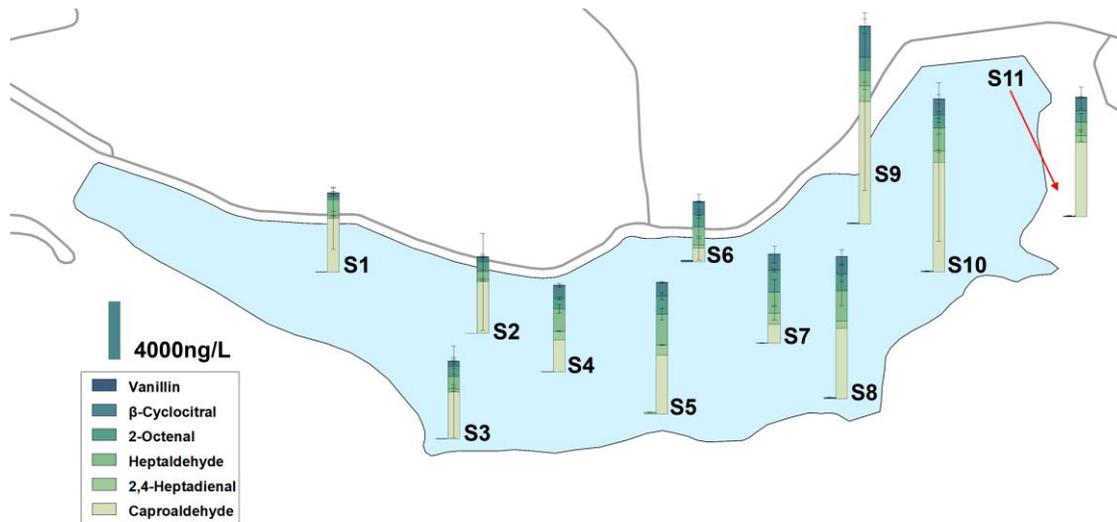


Fig.A.5 Detection of fishy/septic odorants in the reservoir (water samples in the left column, sediment samples in the right column).

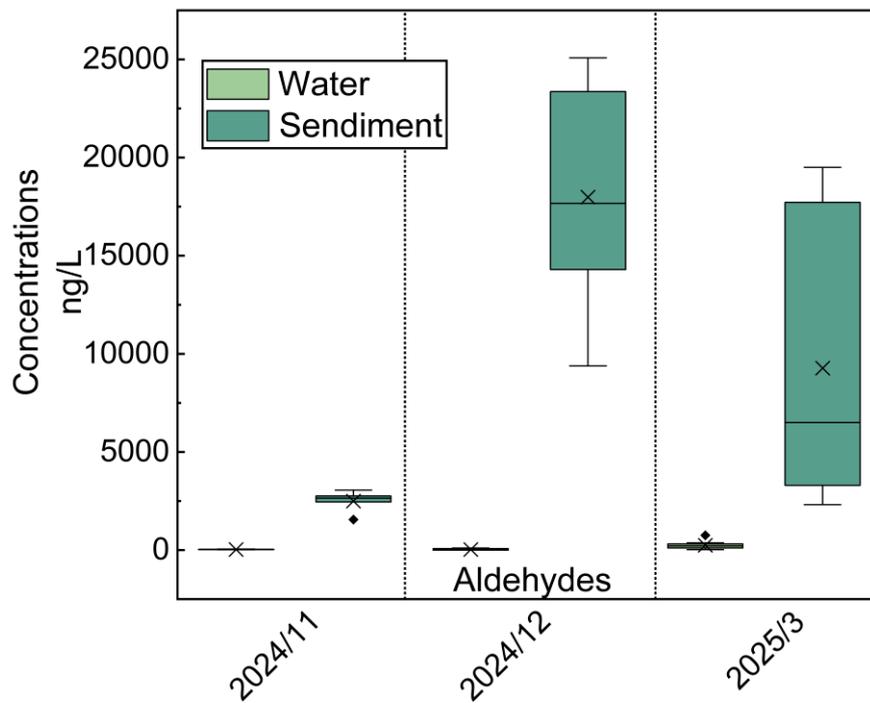


Fig.A.6 Temporal variation of fishy/septic odorants.

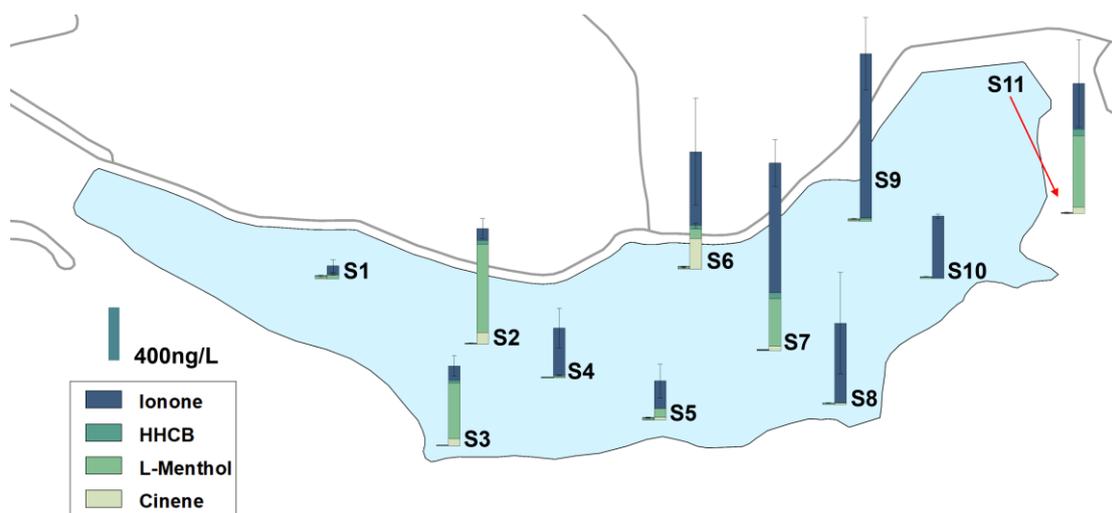


Fig.A.7 Detection of floral/fruity odorants in the reservoir (water samples in the left column, sediment samples in the right column).

Referance

1. H. Li, X. Gu, H. Chen, Z. Mao, R. Shen, Q. Zeng and Y. Ge, Co-occurrence of multiple cyanotoxins and taste-and-odor compounds in the large eutrophic Lake Taihu, China: Dynamics, driving factors, and challenges for risk assessment, *Environmental Pollution*, 2022, **294**, 118594.
2. C. Wang, J. Yu, Q. Guo, D. Sun, M. Su, W. An, Y. Zhang and M. Yang, Occurrence of swampy/septic odor and possible odorants in source and finished drinking water of major cities across China, *Environmental pollution*, 2019, **249**, 305-310.
3. M. B. Lubran, H. T. Lawless, E. Lavin and T. E. Acree, Identification of Metallic-Smelling 1-Octen-3-one and 1-Nonen-3-one from Solutions of Ferrous Sulfate, *Journal of Agricultural and Food Chemistry*, 2005, **53**, 8325-8327.
4. D. Khiari, I. H. Suffet and S. E. Barrett, Extraction and identification of chemicals causing grassy odors in Flavor Profile Analysis (FPA) reference standards, *Water Science and Technology*, 1995, **31**, 93-98.
5. G. Fráter, U. Müller and P. Kraft, Preparation and Olfactory Characterization of the Enantiomerically Pure Isomers of the Perfumery Synthetic Galaxolide®, *Helvetica Chimica Acta*, 1999, **82**, 1656-1665.
6. S. Sesha Pochiraju, C. Hoppe-Jones, C. Adams and L. Weinrich, Development and optimization of analytical methods for the detection of 18 taste and odor compounds in drinking water utilities, *Water Res X*, 2021, **11**, 100099.
7. C. Wang, D. L. Gallagher, A. M. Dietrich, M. Su, Q. Wang, Q. Guo, J. Zhang, W. An, J. Yu and M. Yang, Data Analytics Determines Co-occurrence of Odorants in Raw Water and Evaluates Drinking Water Treatment Removal Strategies, *Environmental Science & Technology*, 2021, **55**, 16770-16782.