

STUDY ON SEWAGE

Sewage is domestic, municipal, or industrial waste product disposed of or transported via a pipe or similar arrangement. The physical infrastructure, including pipes, pumps, screens, channels etc. used to convey sewage from its origin to the point of eventual treatment or disposal is termed sewerage, a term often mistakenly used to refer to sewage.

Composition of sewage

Sewage is a variable liquid mixture comprising material from some or all of the following sources:

- Human waste (faeces, paper, wipes and urine + other bodily fluids) also known as black water
- Washing water (personal, clothes, floors etc.) also known as grey water
- Rainfall collected on roofs, yards, hard-standing etc. (traces of oils and fuel but generally clean)
- Ground water infiltrated into sewage pipes
- Surplus manufactured liquids from domestic sources (drinks, cooking oil, pesticides, lubricating oil, paint, cleaning liquids etc.)
- General urban rainfall run-off from roads, car-parks, roofs, side-walks or pavements (contains oils, animal faeces, litter, fuel residues, rubber residues, metals from vehicle exhausts etc)
- Industrial cooling waters
- Industrial process waters

- Sea water ingress
- Direct ingress of river water
- Direct ingress of man-made liquids (illegal disposal of pesticides, used oils etc.)

The composition of each sewage stream varies widely, but sewage derived from a large city can be expected to contain (the examples given here represent only a small proportion of the range of materials actually encountered):

- Water (> 95%)
- Non pathogenic bacteria (> 100,000 / ml)
- Pathogens - (Bacteria, viruses, prions, parasitic worms).
- Organic particles (Faeces, hair, food, vomitus, paper fibres, plant material, humus etc.)
- Soluble organic material (Urea, fruit sugars, soluble proteins, drugs, pharmaceuticals etc.)
- Inorganic particles (sand, grit, metal particles, ceramics etc)
- Soluble inorganic material (ammonia, road-salt, sea-salt, cyanide, hydrogen sulphide, thiocyanates, thiosulphates)
- Animals (Protozoa, insects, arthropods, small fish, abandoned pets etc.)
- Macro-solids (sanitary towels, nappies/ diapers, condoms, needles, children's toys, body parts, etc.)
- Gases (hydrogen sulphide, carbon dioxide, methane)
- Emulsions (oils in emulsion, paints, adhesives, mayonnaise, hair colourants)
- Toxins (pesticides, poisons, herbicides)

Sewage disposal

(See also sewage treatment)

In some urban areas, sewage is carried separately in sanitary sewers while runoff from streets is carried in storm drains. Access to either of these is typically through a manhole.

Sewage may drain directly into major watersheds with minimal or no treatment.

When untreated, sewage can have serious impacts on the quality of an environment and on the health of people. Pathogens can cause a variety of illnesses. Some chemicals pose risks even at very low concentrations and can remain a threat for long periods of time because of bioaccumulation in animal or human tissue.

Source : <http://engineering.wikia.com/wiki/Sewage>