

Student Sheet 2.1- Test Descriptions



Water Quality Test	What is it?	Sources of Pollution
<i>Ammonia</i>	<ul style="list-style-type: none"> • All animals produce ammonia as a by-product of normal daily metabolism which gets oxidized by bacteria in water • At relatively low levels it starts to irritate the skin and gills of fish • At higher levels it is extremely toxic to fish 	<ul style="list-style-type: none"> • Sewage • Manure • Disinfectants • Fertilizer
<i>Chlorine</i>	<ul style="list-style-type: none"> • A greenish-yellow gas which combines with nearly all elements • Used as a disinfectant in drinking and wastewater treatment • Affects fish gills at low levels and causes death by asphyxiation 	<ul style="list-style-type: none"> • Wastewater treatment plants • Swimming pools • Drinking water • Bleach (paper and cloth companies, disinfectants)
<i>Dioxins</i>	<ul style="list-style-type: none"> • Formed as by-products of many industrial processes, incomplete combustion and various chemical production processes • Extremely long-lived in the environment • Accumulates in fish and other animal tissues 	<ul style="list-style-type: none"> • Herbicides • Burning of household and industrial waste • Manufacture of certain chlorinated compounds
<i>Metals</i>	<ul style="list-style-type: none"> • Iron, copper and zinc are necessary in small quantities for life • Mercury, lead, cadmium and other metals are poisonous to humans, animals, fish and plants 	<ul style="list-style-type: none"> • Lead and copper pipes • Batteries • Paints • Scrap metal



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<p><i>Nitrate</i></p>	<ul style="list-style-type: none"> • Nutrient that helps plants to grow • Nitrogen in soil converts to nitrate (NO_3^-) • High levels can cause increase in algae growth which can eventually lead to decreases in dissolved oxygen and subsequent fish kills 	<ul style="list-style-type: none"> • Human and animal waste • Industrial pollutants • Fertilizers
<p><i>PAHs</i> <i>(Polycyclic Aromatic Hydrocarbons)</i></p>	<ul style="list-style-type: none"> • Complex organic compounds, some of which are persistent and carcinogenic (cause cancer) • Found everywhere in the environment • Causes fin erosion, liver abnormalities, cataracts, and immune system impairments leading to increased susceptibility to disease in fish 	<ul style="list-style-type: none"> • Oil spills • Asphalt • Roofing tar • Burning wood and coal
<p><i>Pesticides</i></p>	<ul style="list-style-type: none"> • A chemical substance used to kill pests such as rodents and insects • Most organochlorine pesticides (DDT, Chlordane, Toxaphene) are now banned in the U.S., but persist and bioaccumulate in the environment • Toxic to fish and other aquatic life 	<ul style="list-style-type: none"> • Treated yards and farms • Improper disposal and storage of products