

KaizenLAB

Analytical Division of Kaizen Environmental Services (Trinidad) Ltd.



ANALYTICAL EXPERTS PROVIDING ENVIRONMENTAL SOLUTIONS!

“IMPLEMENTATION OF WATER POLLUTION RULES”

(Daily Express, Mon. 12th March, 2007)

ARE YOU READY??

WATER POLLUTANT SOURCES TARGETED:

“ A person or enterprise engaged in any activity which discharges water pollutants into the environment. These activities include: commercial facilities, agricultural facilities, institutions and sewerage facilities.”

THE KaizenLAB ADVANTAGE:

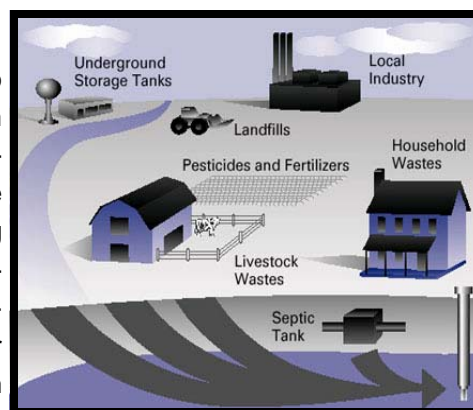
- √ Commitment to Customer Service
- √ Competent Technical Personnel
- √ Prompt and Reliable Services
- √ Rigorous QA / QC Protocol
- √ State of the Art Instrumentation
- √ International Technical Support

Tourism and Hospitality Industry (TTS 547:1998)

Parameters	Sources
Temperature	Heated wastewater from boilers, kitchen activity and dishwashers. Thermal pollution is caused when industries use water as a coolant. In this industrial use of water the water absorbs heat and then is returned to a pond, stream, river, or lake before it is cooled. If this continues for prolonged periods of time the hot water can actually harm and kill fish, wildlife, and aquatic plants. A major side effect of thermal pollution is that it also reduces oxygen in the water and thus harms plant and animal life by starving them for air.
pH	Acetic acid (vinegar), dish-washing liquid, soaps, scoring powders, citrus products and their by-products, other cooking ingredients
Five Day Biological Oxygen Demand	Decaying food stuff, plant and kitchen wash down and gray water from toilets
Total Suspended Solids	Solid Matter from kitchen and plant waste, insoluble matter from related activities
Total Oil and Grease	Cooking ingredients- such as oils and fats and greases from machinery and gray water from toilets
Total Residual Chlorine (<i>in situ</i> measurement)	Water disinfection- by most city drinking water treatments plants
Faecal Coliforms, MPN /100mL	Animal & human waste, septic fields, sewage, farming

WHAT'S THE RELATION OF WATER CYCLE AND POLLUTION?

According to the water cycle, naturally, water around us will be absorbed to the land (soil) and rivers will stream from the upstream to the downstream and released to the sea. In normal situation organic pollutants are biodegraded by microbes and converted to a form that brings benefits to the aquatic life. And for the inorganic pollutants, in the same situation, don't bring to much hazards because they are widely dispersed and have almost no effect to the environment, which they are released to. In a small scale, both inorganic and organic pollutants safely decompose throughout the stream, their concentration decrease in the sea, and they don't harm the sea ecosystem and its distribution. But in an excessive scale, communities in beach and es-



General Sources of Waste

KaizenLAB

Analytical Division of Kaizen Environmental Services (Trinidad) Limited

18 Casuarina Avenue, Pointe-a-Pierre, Trinidad, W.I.

Phone.: (868) 658-0085 / 4531 Fax.: (868) 658-0059

Website: www.kaizen-tt.com

WATER POLLUTION RULES REFERENCE GUIDE

All analyses will be conducted in accordance with standard test procedures listed below. These procedures are based on methods approved by the EMA¹.

Permissible Levels- Receiving Environments

No.	Parameter	Inland surface water	Coastal Nearshore	Marine Offshore	Environmentally Sensitive Areas and/or Groundwater	Units
1	Temperature (in situ measurement)	35	40	40	No increase Above Ambient	°C
2	Dissolved Oxygen (in situ measurement)	> 4	> 4	> 4	> 4	mg/L
3	Hydrogen Ion (pH) (in situ measurement)	6-9	6-9	6-9	6-9	pH units
4	Five Day Biological Oxygen Demand	30	50	100	10	mg/L
5	Chemical Oxygen Demand	250	250	250	60	mg/L
6	Total Suspended Solids	50	150	200	15	mg/L
7	Total Oil and Grease	10	15	100	No release	mg/L
8	Ammoniacal Nitrogen (as NH ₃ -N)	10	10	10	0.1	mg/L
9	Total Phosphorus	5	5	5	0.1	mg/L
10	Sulphide (as H ₂ S)	1	1	1	0.2	mg/L
11	Chloride	250	No increase Above Ambient			mg/L
12	Total Residual Chlorine (in situ measurement)	1	1	2	0.2	mg/L
13	Dissolved Hexavalent Chromium	0.1	0.1	0.1	0.01	mg/L
14	Total Chromium	0.5	0.5	0.5	0.1	mg/L
15	Dissolved Iron	3.5	3.5	3.5	1	mg/L
16	Total Petroleum Hydrocarbons	25	40	80	No release	mg/L
17	Total Nickel	0.5	0.5	0.5	0.5	mg/L
18	Total Copper	0.5	0.5	0.5	0.01	mg/L
19	Total Zinc	2	2	2	0.1	mg/L
20	Total Arsenic	0.1	0.1	0.1	0.01	mg/L
21	Total Cadmium	0.1	0.1	0.1	0.01	mg/L
22	Total Mercury	0.01	0.01	0.01	0.005	mg/L
23	Total Lead	0.1	0.1	0.1	0.05	mg/L
24	Total Cyanide	0.1	0.1	0.1	0.01	mg/L
25	Phenolic Compounds	0.5	0.5	0.5	0.1	mg/L
26	Toxicity, LC ₅₀	No Acute Toxic Effect				toxic units
27	Faecal Coliforms, MPN /100mL	400	400	400	400	counts per 100ml
28	Solid Waste	No Solid Debris				

Parameters specific to the Tourism and Hospitality Industry (TTS 547:1998)

Water and Wastewater...

What is Wastewater

Wastewater is defined as water that has been adversely affected in quality by anthropogenic influence. It comprises liquid waste discharged by domestic residences, commercial properties, industry, and/or agriculture and can encompass a wide range of potential contaminants.

Why is it so Important to Monitor Wastewater Levels

Quite simply, wastewater goes into the environment, which ultimately will commingle with various bodies of water.

Depending on the nature of the wastewater and the constituents it can have a negative impact on the environment. For example a sample of wastewater containing high COD (chemical oxygen demand) and BOD (biochemical oxygen demand) levels, will in turn affect the oxygen level in the receiving body.

If the oxygen level in the receiving body is affected to the point where the wastewater absorbs all the oxygen, an environment will be created that can no longer sustain life.



The Water Pollution Rules

The Water Pollution Rules came into effect on 27th February, 2007 and applies to activities which can affect inland surface waters, groundwater, coastal and marine environment and environmentally sensitive areas as any activity not properly managed can have a serious effect on the quality and future supply of our water.

Liabilities

If you release wastewater containing water pollutants and you do not register with the EMA, you would be breaking the law.

It is an environmental requirement to register as a source of water pollutants. If you fail to comply with the Water Pollution Rules, the penalties could be significant.

The Solution



KaizenLAB, Analytical Division of **Kaizen Environmental Services (Trinidad) Limited** is a well-established environmental laboratory with over 10 years of analytical experience. **KaizenLAB** specializes in analytical techniques applied to environmental chemistry for Water and Wastewater analysis, enhanced data interpretation and superior customer service. Following are some of the services offered with respect to Water and Wastewater: