EWCE 105
Environmental Chemistry

Lecture 1

Instructor

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Lecture Details

Topics	References
• **Introduction on aquatic chemistry** • **Scope and possible application of aquatic chemistry**	1. **Chemistry for Environmental Engineering** Authors: **Clair N. Sawyer, Perry L. McCarty and Gene F. Parkin** 4th ed., McGraw Hill Inc.

Aquatic Chemistry

Definition:

- Concerned with the chemical processes affecting the distribution and circulation of chemical compounds in natural waters (as well as in water/ waste treatment processes)

- Is based primarily on fundamental of chemistry, but is also influenced by other science, especially geology and biology.

Aquatic Chemistry

Aim:
Formulation of a theoretical basis for –

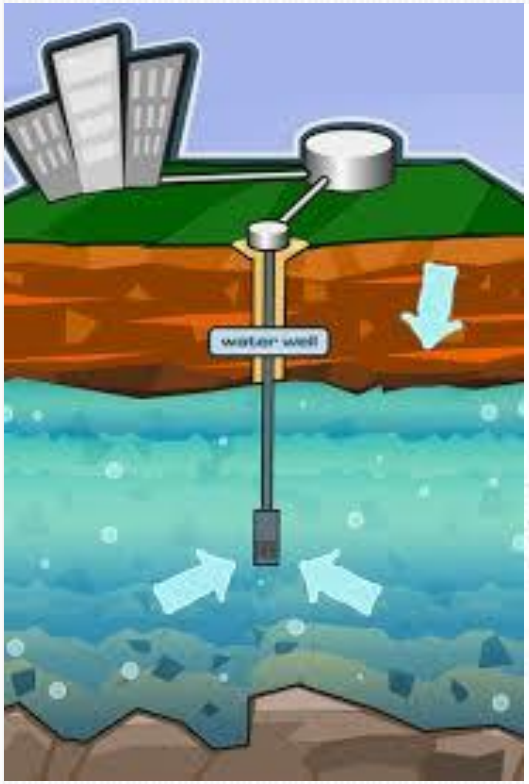
- chemical behavior of *ocean water, estuaries, rivers, lakes, ground water and soil-water systems*, as well as
- the description of processes involved in water treatment.

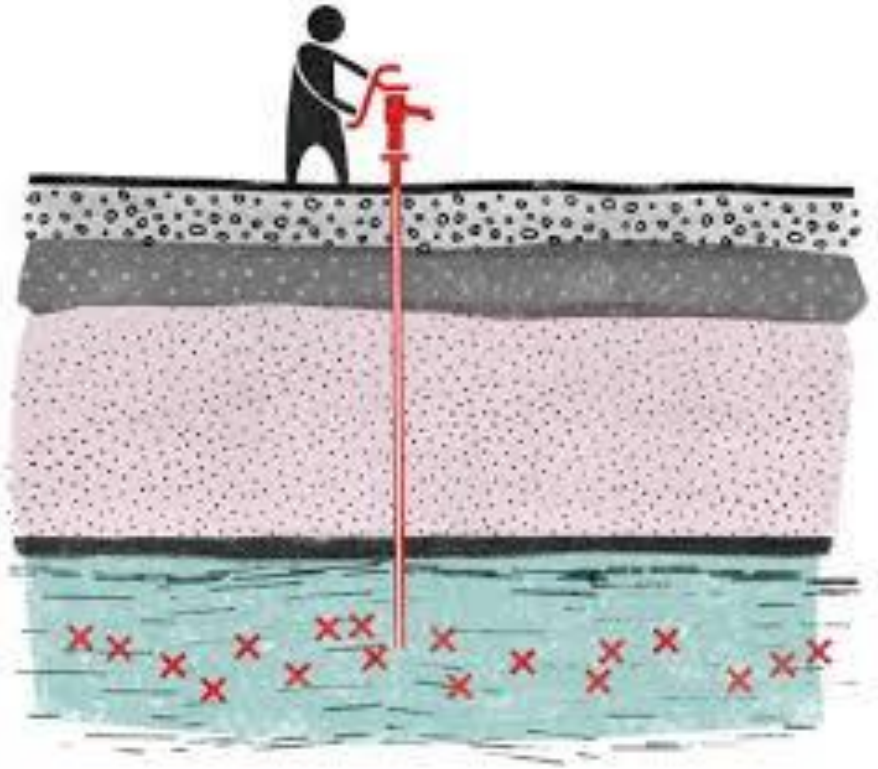
Application of Aquatic Chemistry

Arsenic contamination of groundwater

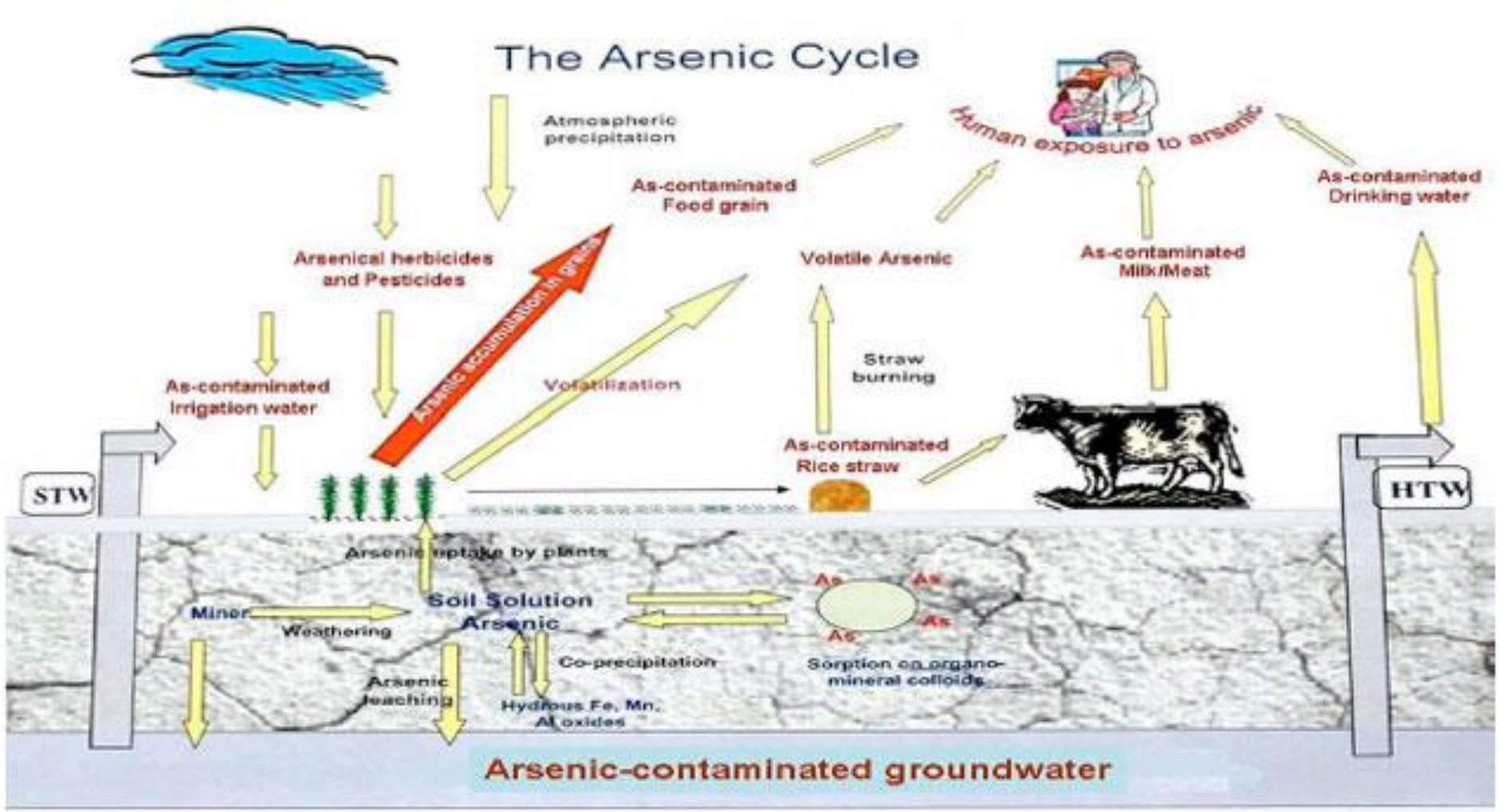
- Understanding the processes affecting mobilization of Arsenic in the sub-surface.

- To know whether the unaffected shallow or deep tube wells would become affected in the future.





Application of Aquatic Chemistry



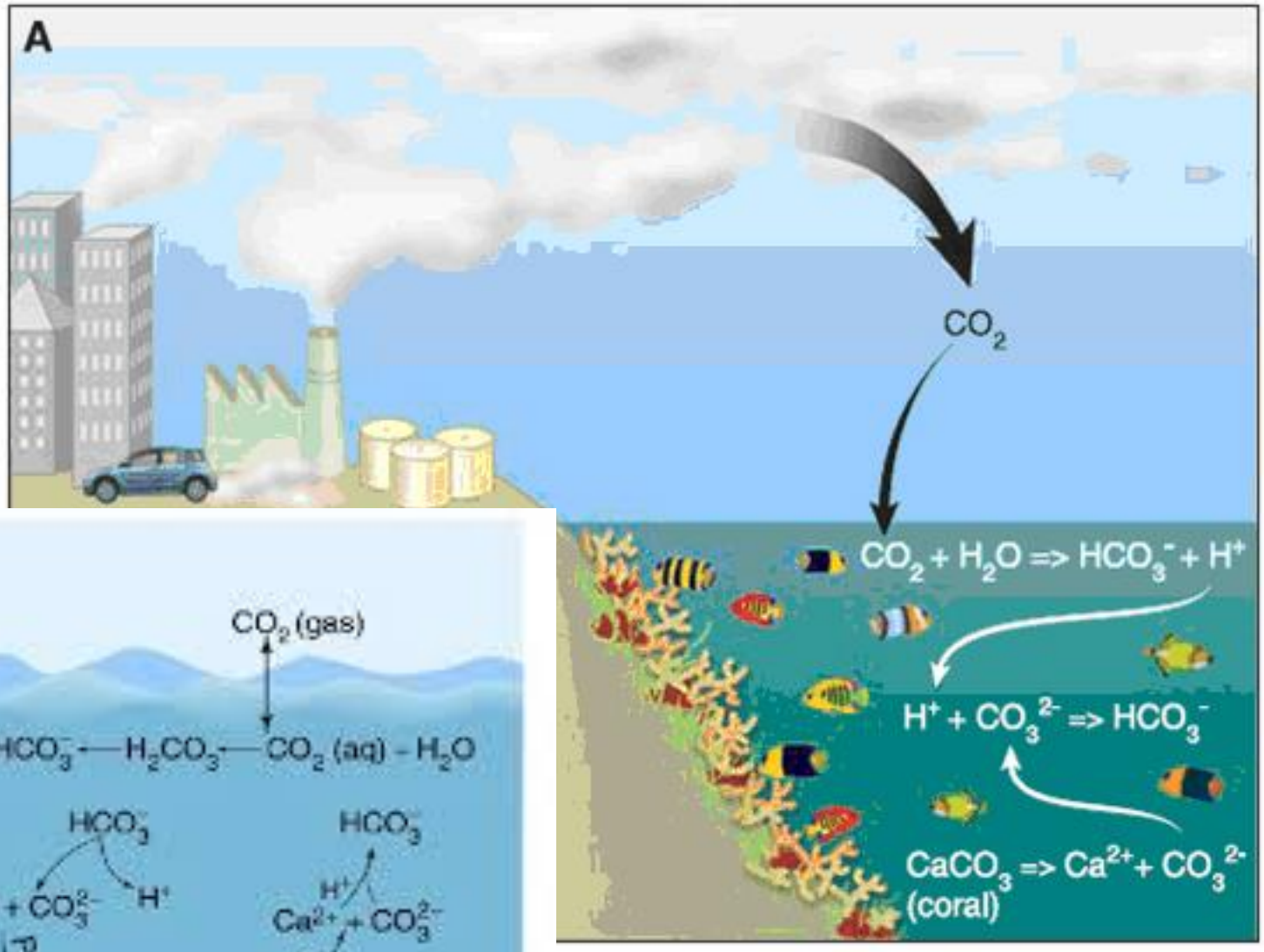
Application of Aquatic Chemistry

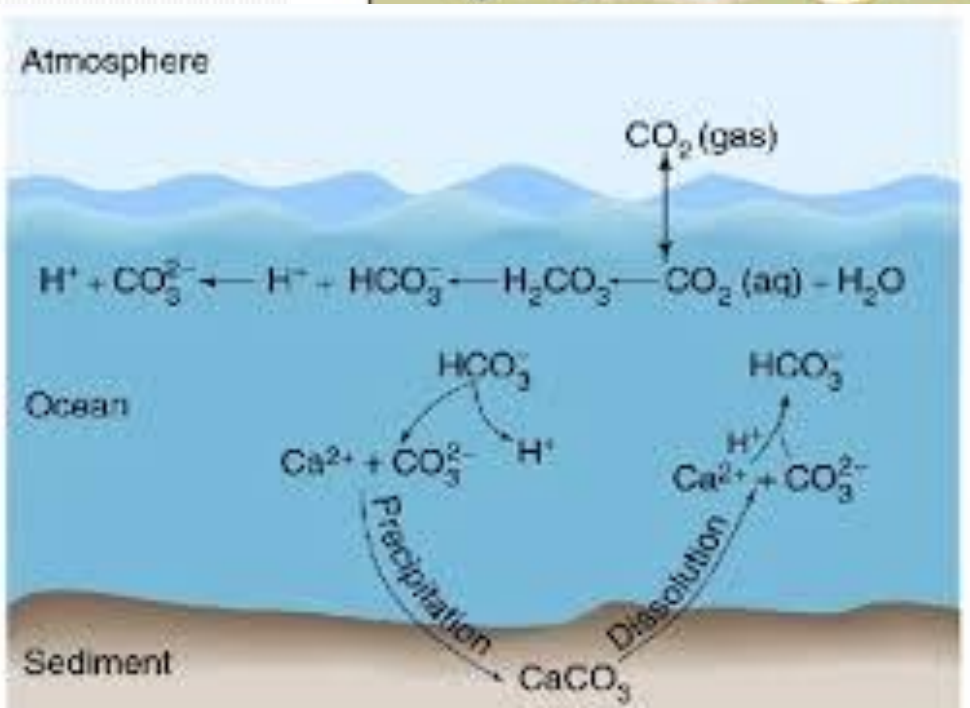
2. Ocean-atmosphere interaction

- To understand how emission of CO_2 is likely to affect ocean water chemistry/ composition.

- To know how it is going to affect ocean ecosystem.

Application of Aquatic Chemistry





Application of Aquatic Chemistry

3. Industrial waste and ground water contamination

- Discharge of Chromium bearing waste from tannery poses serious threat to ground water.

- This course will develop understanding about the processes affecting fate and transport of chemical (Cr) in the subsurface.

- Remediation of Cr contaminated site/protection of ground water.

Application of Aquatic Chemistry

