

## ENVIRONMENTAL SCIENCE STUDY SHEET 3

### *Important Terms To Know*

|                        |                         |                      |                         |
|------------------------|-------------------------|----------------------|-------------------------|
| solid wastes           | storm sewers            | urban concentration  | migration               |
| carcinogenic           | combination sewer       | factor               | diagenesis              |
| leachate               | grit chamber            | fission              | source rock             |
| reactivity             | aeration tank           | fusion               | primary migration       |
| inert                  | settling tank           | U <sup>235</sup>     | secondary migration     |
| soluble                | sludge                  | neutron              | oil seep                |
| reactive               | primary treatment       | carnotite            | tar pit                 |
| biodegradable          | secondary treatment     | uranite              | volatiles               |
| compostable            | tertiary treatment      | pitchblende          | roof rock               |
| combustible            | acid drainage           | radon gas            | oil pool                |
| non-biodegradable      | hazardous liquid        | tailings             | oil trap                |
| recyclable             | wastes                  | enrichment plants    | reservoir rock          |
| non-recyclable         | ignitable liquid wastes | breeder reactor      | gas cap                 |
| secondary use          | corrosive liquid wastes | thorium              | rotary drill            |
| aerobic                | reactive liquid wastes  | plutonium            | drill bit               |
| anoxic                 | PCB                     | converter reactor    | derrick                 |
| anaerobic              | polychlorinated         | burner reactor       | drill stem              |
| dump                   | biphenyls               | fuel rods            | swivel                  |
| landfill (open-air)    | midnight dumping        | control rods         | drive bushing           |
| sanitary landfill      | injection wells         | moderator            | gusher                  |
| cell                   | secure landfill         | reactor core         | casing                  |
| improved sanitary      | radioactive wastes      | coolant              | drilling mud            |
| landfill               | low level radioactive   | meltdown             | natural flow            |
| monitoring well        | wastes                  | containment reactor  | gas lift                |
| sewage                 | high level radioactive  | China syndrome       | pumping                 |
| eutrophication         | wastes                  | spent fuel           | secondary recovery      |
| BOD                    | short-term exposure     | hydrogen bomb        | injection well          |
| OD                     | long-term exposure      | fossil fuel          | recovery well           |
| dysoxic                | bioaccumulation         | petroleum            | refining                |
| depauperate fauna      | biomagnification        | crude oil            | fractional distillation |
| effluent               | food chain              | natural gas          | cracking                |
| outfall                | autotrophs              | bitumens             | catalyst                |
| slurry                 | herbivores              | saturated            | oil shale               |
| privy                  | omnivores               | hydrocarbons         | in situ processing      |
| outhouse               | carnivores              | unsaturated          | tar sands               |
| septic tank            | biomass pyramid         | hydrocarbons         | coal gassification      |
| digester tank          | ecological efficiency   | isomers              | geothermal energy       |
| drainage field         | resource                | kerogen              | dry steam               |
| leaching field         | renewable resource      | bitumen kerogen      | binary cycle            |
| sewage treatment plant | non-renewable           | oleumiferous kerogen |                         |
| sanitary sewers        | resource                | crude oil windows    |                         |

### *Concepts to Understand and Explain*

Solid wastes, categories into which are divided and characteristics of each  
Major goal of solid wastes management  
Conditions necessary for material to be recyclable  
Why composting does not usually occur in a landfill  
Handling of solid wastes in modern incinerators so as to generate minimal pollution and reduce volume of waste disposal  
Compare and contrast various types of landfill operations: open-air, sanitary, improved sanitary  
Major potential for pollution and hazards from various types of landfills  
Geologic factors that should be considered in locating a landfill  
Difference between toxic and nontoxic wastes  
Difference between the various methods of managing sewage  
Factors controlling DO and BOD  
Functioning of a privy and a private septic system  
Functioning of a sewage treatment facility  
Difference among primary, secondary and tertiary treatment  
Reasons why drainage from mines is hazardous  
Classes of hazardous liquids  
Methods of toxic liquid disposal  
Design of a secure landfill  
Classes of radioactive wastes  
Unique problems of radioactive wastes  
Organism's response to various levels of exposure to contaminants  
Difference between long and short term exposure  
Difference between bioaccumulation and biomagnification  
influence of biomass pyramid in biomagnification  
Problems posed by increasing human population  
Difference between renewable and nonrenewable resources  
Relationship between population and pollution  
Approaches to hazard management  
Difference between fission and fusion  
How fission operates and can create a self-sustaining reaction  
Various types of reactors and how they function  
Parts of reactor core and how to control rate of fission  
Parts of a reactor facility used to produce electricity  
Assets and problems of nuclear reactions  
Possibility of explosion at a reactor facility

Difference between reactors and nuclear weapons  
Why the composition of petroleum is so diverse  
Origin of petroleum  
Difference between kerogen that becomes coal and that which becomes petroleum  
Relationship between crude oil window and diagenesis  
Why crude oil is not expected to occur deep in the Earth  
Migration of petroleum  
Accumulation of oil  
How a rotary frill operates  
How crude oil is recovered  
Types of secondary recovery  
Refining of petroleum  
Oil shale and how crude oil is produced from it  
Tar sands and how tars are recovered  
Types of geothermal energy