Appendix A
Glossary

Aerobic bacteria: Any bacteria requiring free oxygen for growth and cell division.

Aliphatic **compound: Any** organic compound of hydrogen and carbon characterized by a linear or branched chain of carbon atoms. Three subgroups of such compounds are alkanes, alkenes, and alkynes.

Anaerobic bacteria: Any bacteria that can grow and divide in the partial or complete absence of oxygen.

Aromatic: Organic cyclic compounds that contain one or more benzene rings. These can be monocyclic, bicyclic, or polycyclic hydrocarbons and their substituted derivatives. In aromatic ring structures, every ring carbon atom possesses one double bond.

Assay: Qualitative or (more usually) quantitative determination of the components of a material or system.

Biodegradation: The natural process whereby bacteria or other microorganisms chemically alter and break down organic molecules.

bioremediation: A treatment technology that uses biological activity to reduce the concentration or toxicity of contaminants: materials are added to contaminated environments to accelerate natural biodegradation.

Catalyst: A substance that alters the rate of a chemical reaction and may be recovered essentially unaltered in form or amount at the end of the reaction.

Cometabolism: The process by which compounds in petroleum may be enzymatically attacked by microorganisms without furnishing carbon for cell growth and division.

Culture: The growth of cells or microorganisms in a controlled artificial environment.

Dispersant: Solvents and agents for reducing surface tension used to remove oil slicks from the water surface.

Emulsification: The process of intimately dispersing one liquid in a second immiscible liquid (e.g., mayonnaise is an example of an emulsified product).

Enzyme: Any of a group of catalytic proteins that are produced by cells and that mediate or promote the chemical processes of life without themselves being altered or destroyed.

Fraction: One of the portions of a chemical mixture separated by chemical or physical means from the remainder.

Gas chromatography: A separation technique involving passage of a gaseous moving phase through a column containing a fixed liquid phase; it is used principally as a quantitative analytical technique for compounds that are volatile or can be converted to volatile forms.

Gravimetric analysis: A technique of quantitative analytical chemistry in which a desired constituent is efficiently recovered and weighed.

Hydrocarbon: One of a very large and diverse group of chemical compounds composed only of carbon and hydrogen; the largest source of hydrocarbons is petroleum crude oil.

Inoculum: A small amount of material (either liquid or solid) containing bacteria removed from a culture in order to start a new culture.

Inorganic: Pertaining to, or composed of, chemical compounds that are not organic, that is, contain no carbon-hydrogen bonds. Examples include chemicals with no carbon and those with carbon in non-hydrogen-linked forms.

Metabolism: The physical and chemical processes by which foodstuffs are synthesized into complex elements, complex substances are transformed into simple ones, and energy is made available for use by an organism; thus all biochemical reactions of a cell or tissue, both synthetic and degradative, are included.

Metabolize: A product of metabolism.

Microorganism: Microscopic organisms including bacteria, yeasts, filamentous fungi, algae, and protozoa.

Mineralization: The biological process of complete breakdown of organic compounds, whereby organic materials are converted to inorganic products (e.g., the conversion of hydrocarbons to carbon dioxide and water).

Oleophilic: Oil seeking (e.g., nutrients that stick to or dissolve in oil).

Organic: Chemical compounds based on carbon that also contain hydrogen, with or without oxygen, nitrogen, and other elements.

Pathogen: An organism that causes disease (e.g., some bacteria or viruses).

Saturated hydrocarbon: A saturated carbon-hydrogen compound with all carbon bonds filled; that is, there are no double or triple bonds, as in olefins or acetylenes.

Soluble: Capable of being dissolved.

Surface-active agent: A compound that reduces the surface tension of liquids, or reduces interracial tension between two liquids or a liquid and a solid; also known as surfactant, wetting agent, or detergent.

Volatile: Readily dissipating by evaporation.