OILY WASTE TREATMENT
- An Solid Waste Management -

17 March 2004

Japan International Cooperation Agency

Hazardous Wastes from the Oil and Gas Industry

The Oil and Gas Industry is a significant generator of “hazardous wastes” that include Oily sludge, Waste oils, Emulsions, Waste drilling mud, Produced waters, Mercury, Spent catalyst, Heavy metal contaminated sludge, Washings and Oil-contaminated soil.

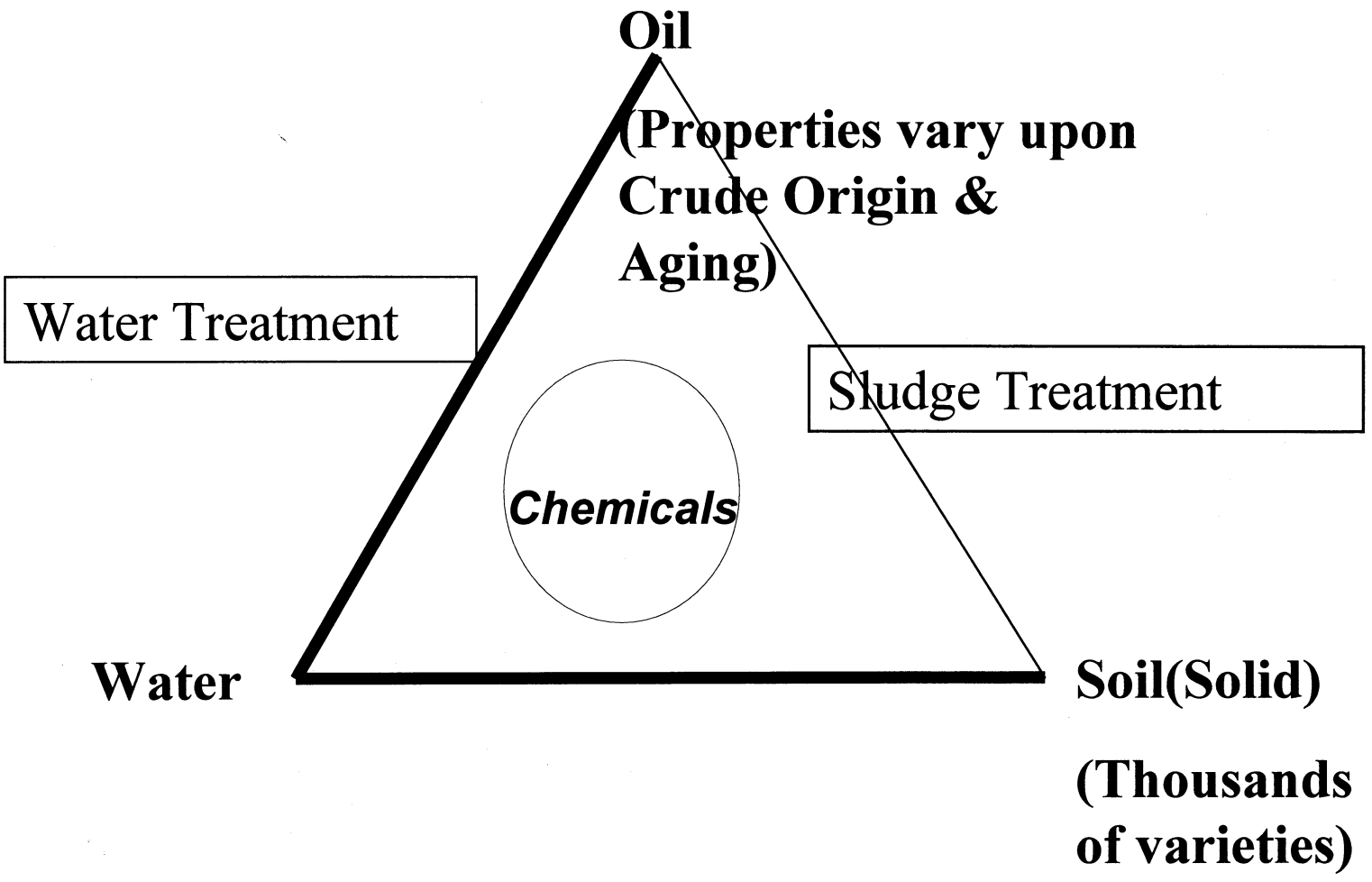
What is Oily Wastes?

Oily sludge

Waste drilling mud

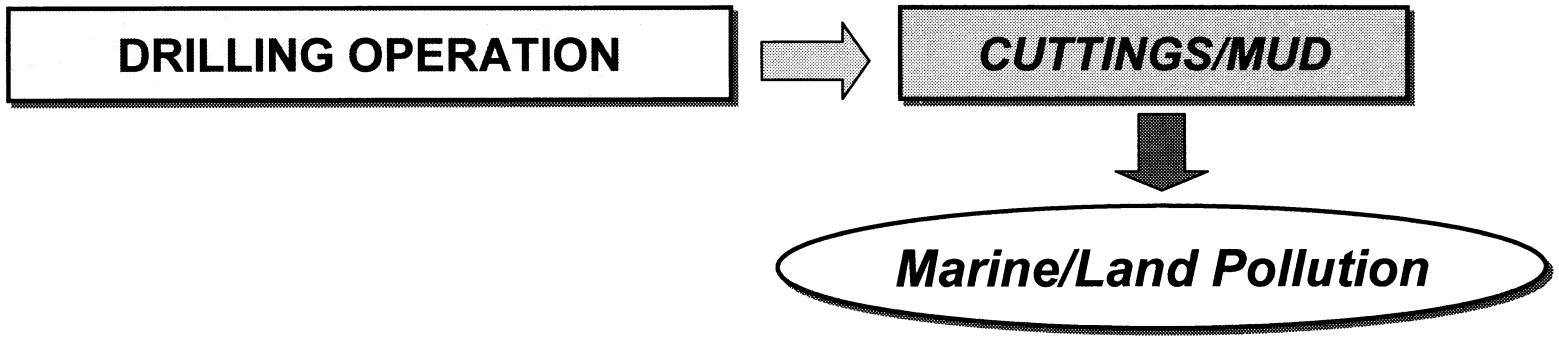
Oil-contaminated soil

INFINITELY VARIOUS OILY WASTE

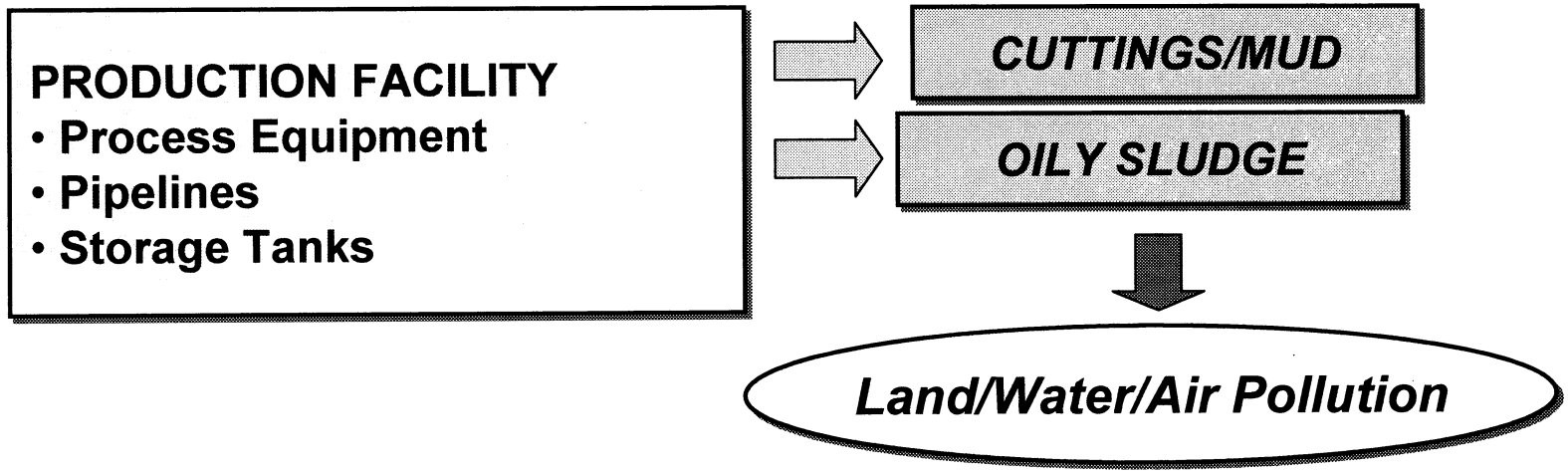


OILY WASTES GENERATION IN UPSTREAM OF OIL INDUSTRY

1. EXPLORATION

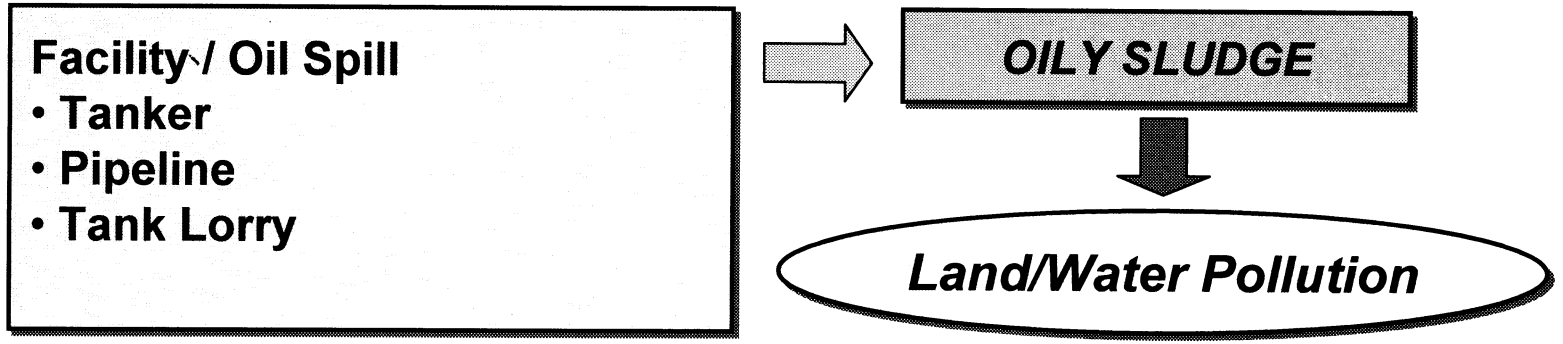


2. DEVELOPMENT/PRODUCTION

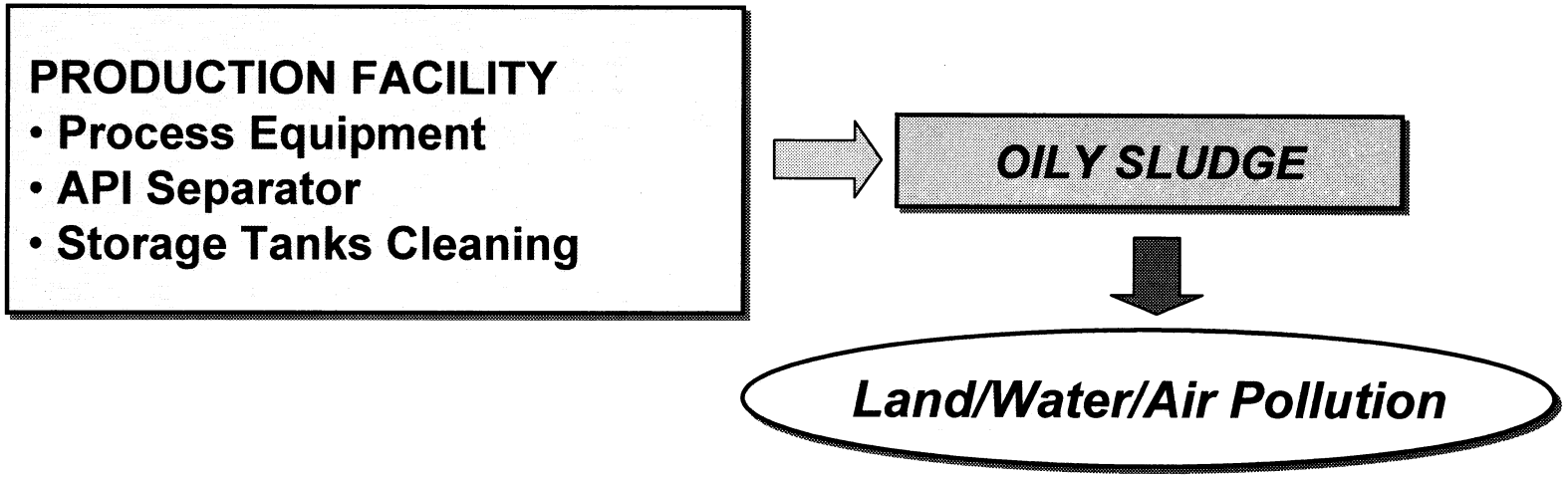


OILY WASTES GENERATION IN DOWNSTREAM OF OIL INDUSTRY

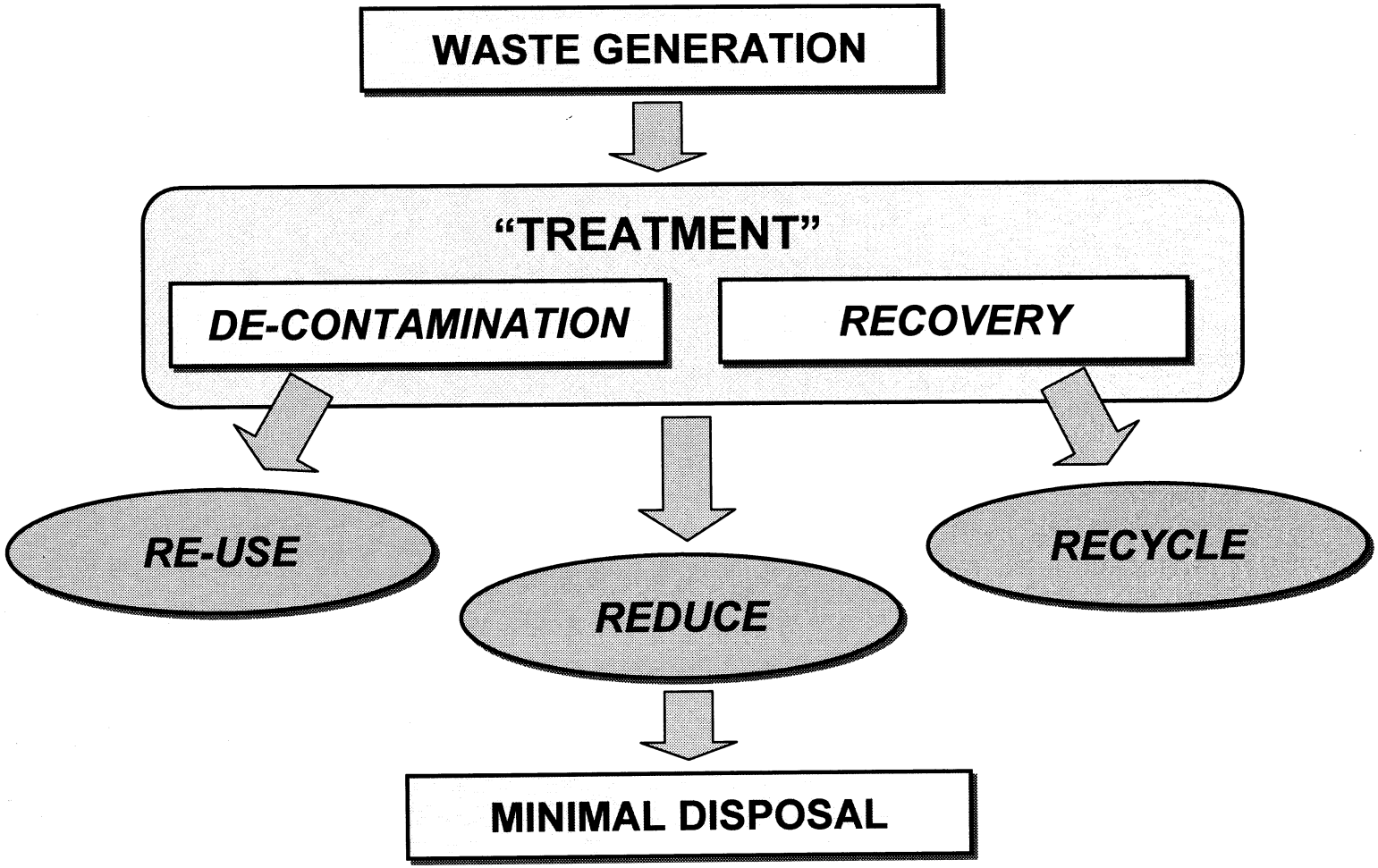
1. TRANSPORTATION



2. REFINERY /OIL TERMINAL



BASIC PHILOSOPHY FOR WASTE CONTROL



各種処理法

- 生物処理法
- 地表散布法、コンポスト(堆肥)法、人工促進法
- 熱処理法
- 熱分離法、蒸留法、焼却法
- 化学処理法
- 分離法、抽出法、中和法
- 物理的分離法:
- 洗浄法、沈降分離法、ろ過法、遠心分離法
- 固形・安定化処理法
- セメント、アスファルト、カルシウム固化/安定化法

TREATMENT/DISPOSAL METHODS

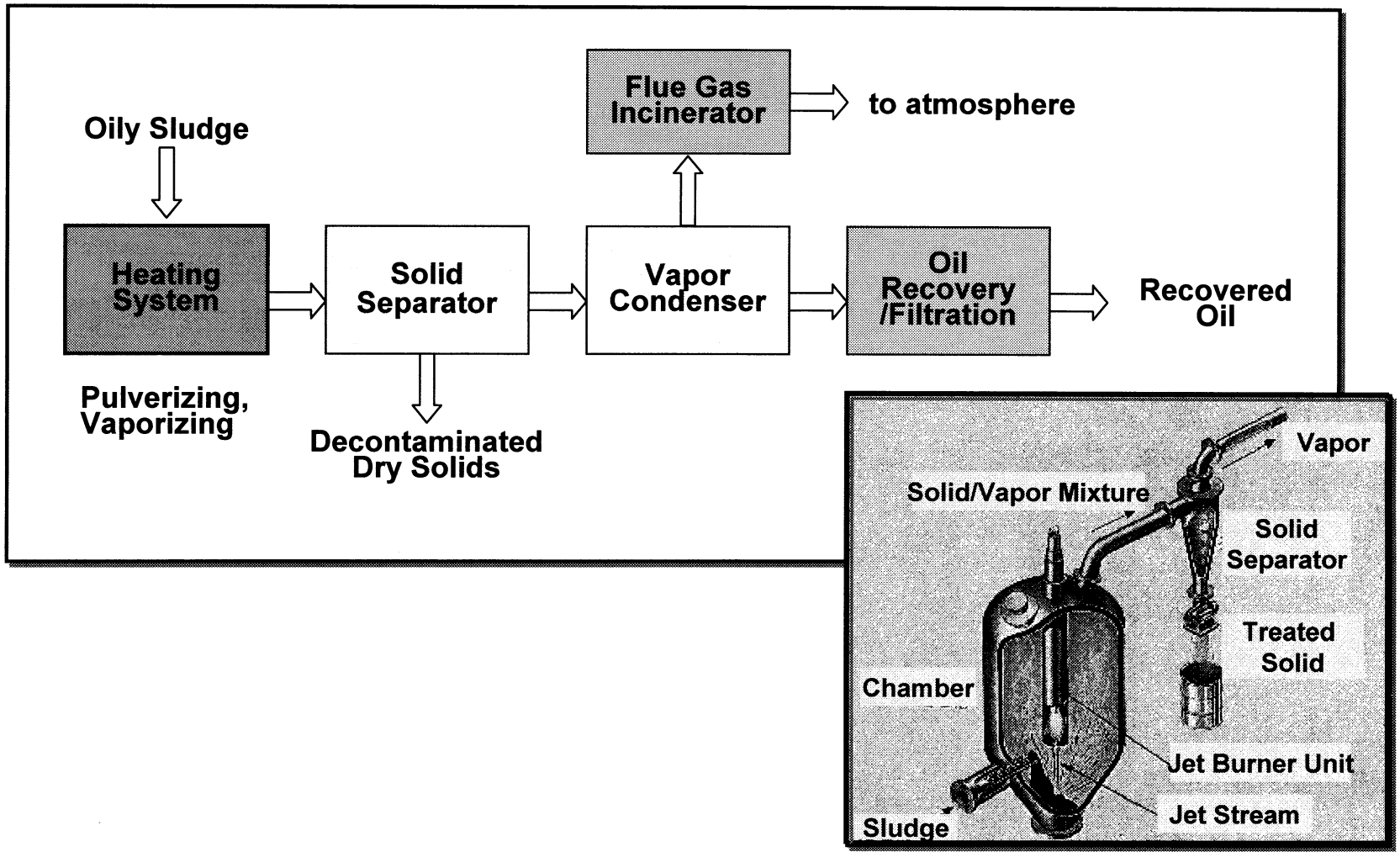
TREATMENT METHODS

- ***PHYSICAL / CHEMICAL WASHING***
- ***THERMAL TREATMENT***
- ***BIOLOGICAL TREATMENT***
- ***SOLIDIFICATION / STABILIZATION***

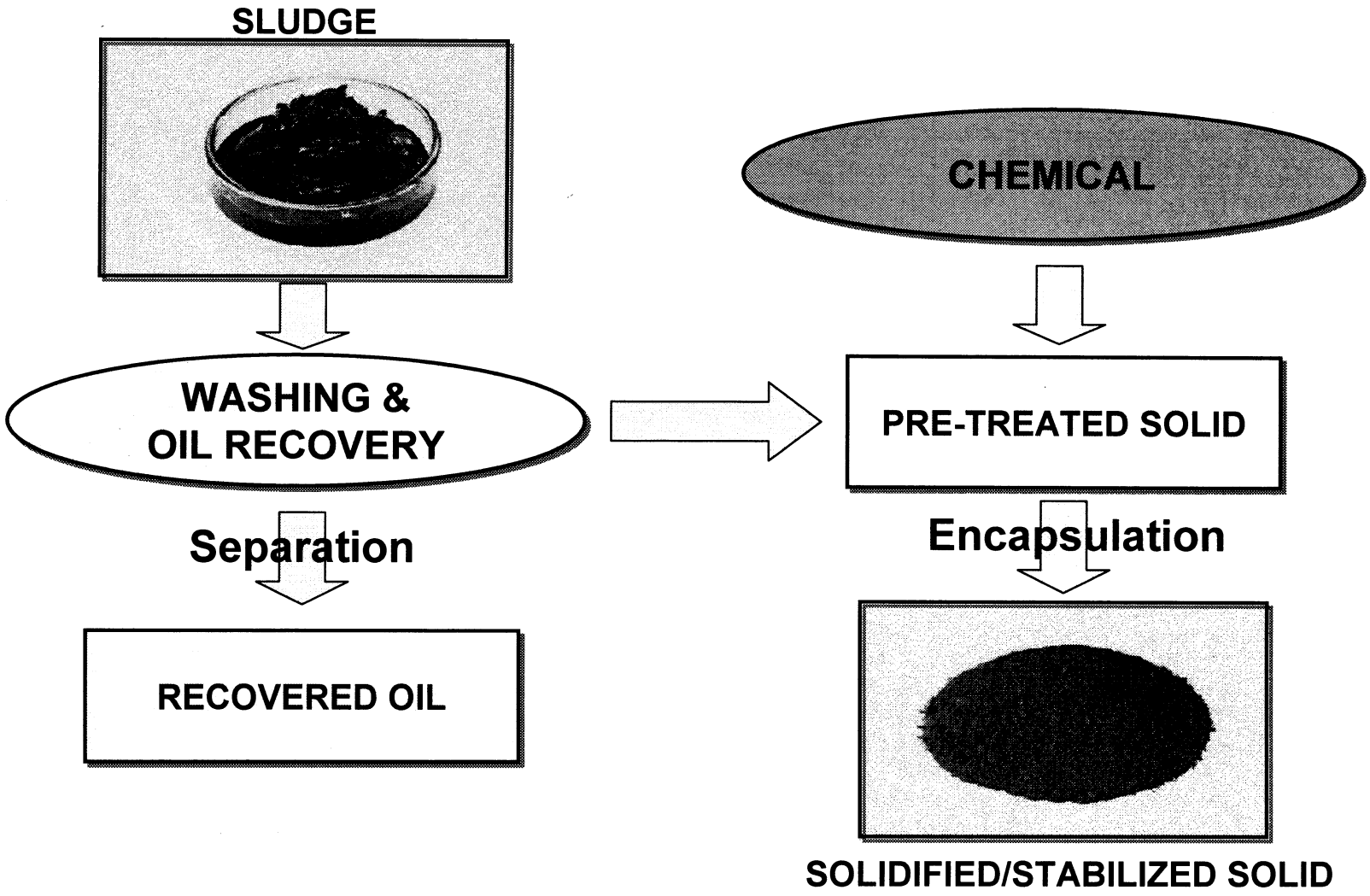
DISPOSAL

- ***UNDERGROUND RE-INJECTION***
- ***LAND FILLING***
- ***RE-USE (FOR CONSTRUCTION MATERIALS)***
- ***RAW MATERIAL/FUEL FOR CEMENT FACTORY***

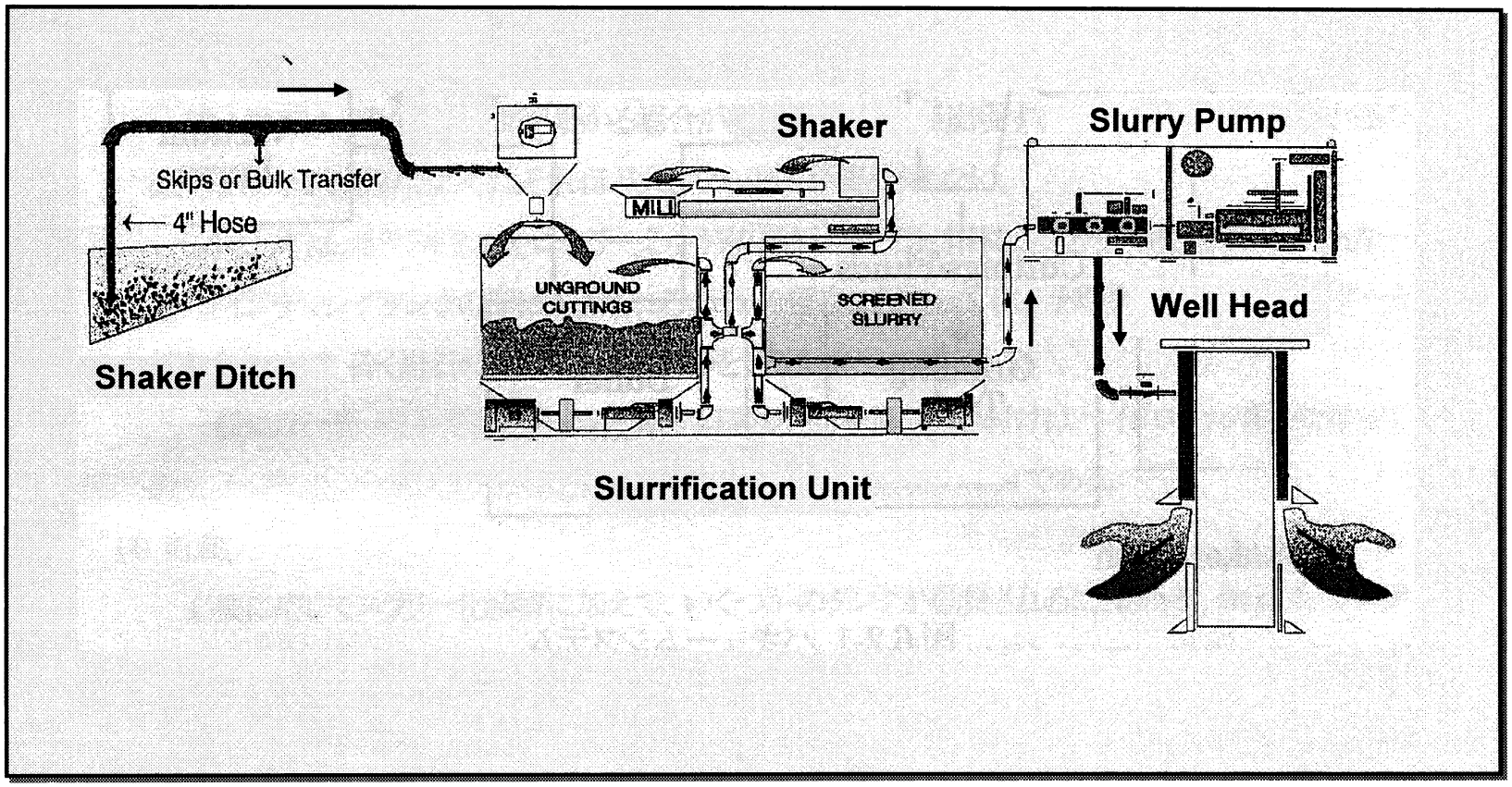
THERMAL TREATMENT SYSTEM



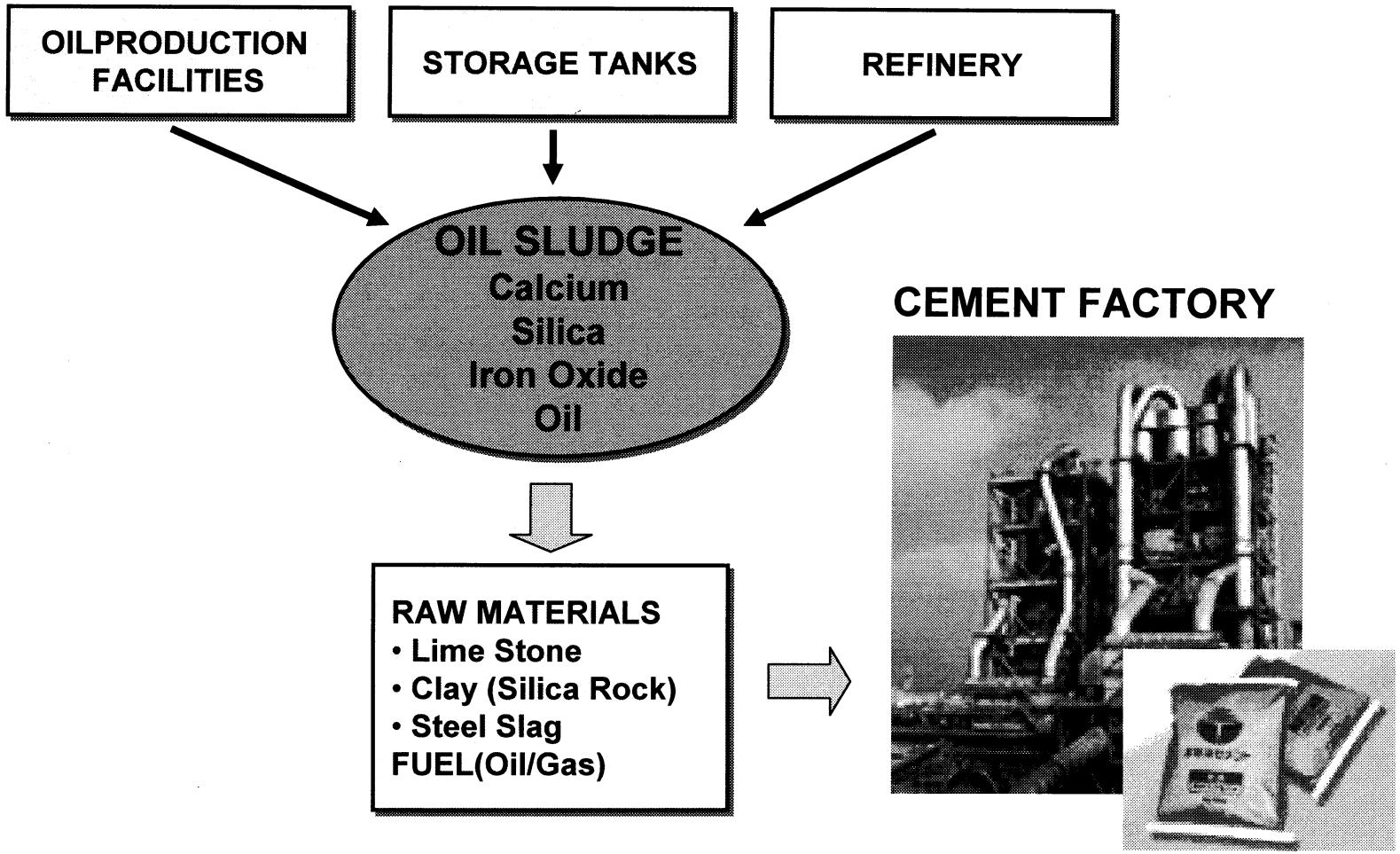
SOLIDIFICATION/STABILIZATION



CUTTINGS RE-INJECTION SYSTEM



REUSE FOR RAW MATERIAL & FUEL OF CEMENT FACTORY

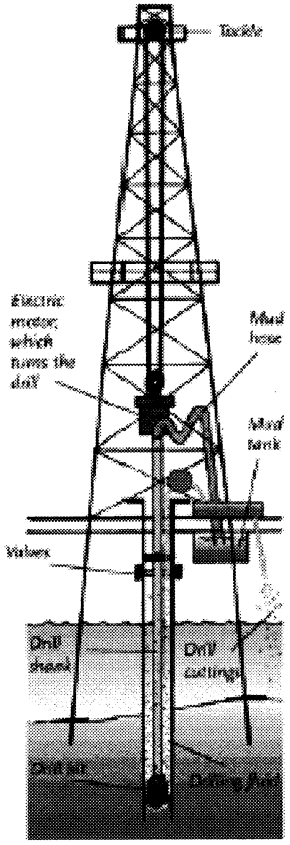


CRITERIA FOR SELECTION OF TREATMENT/DISPOSAL METHODS

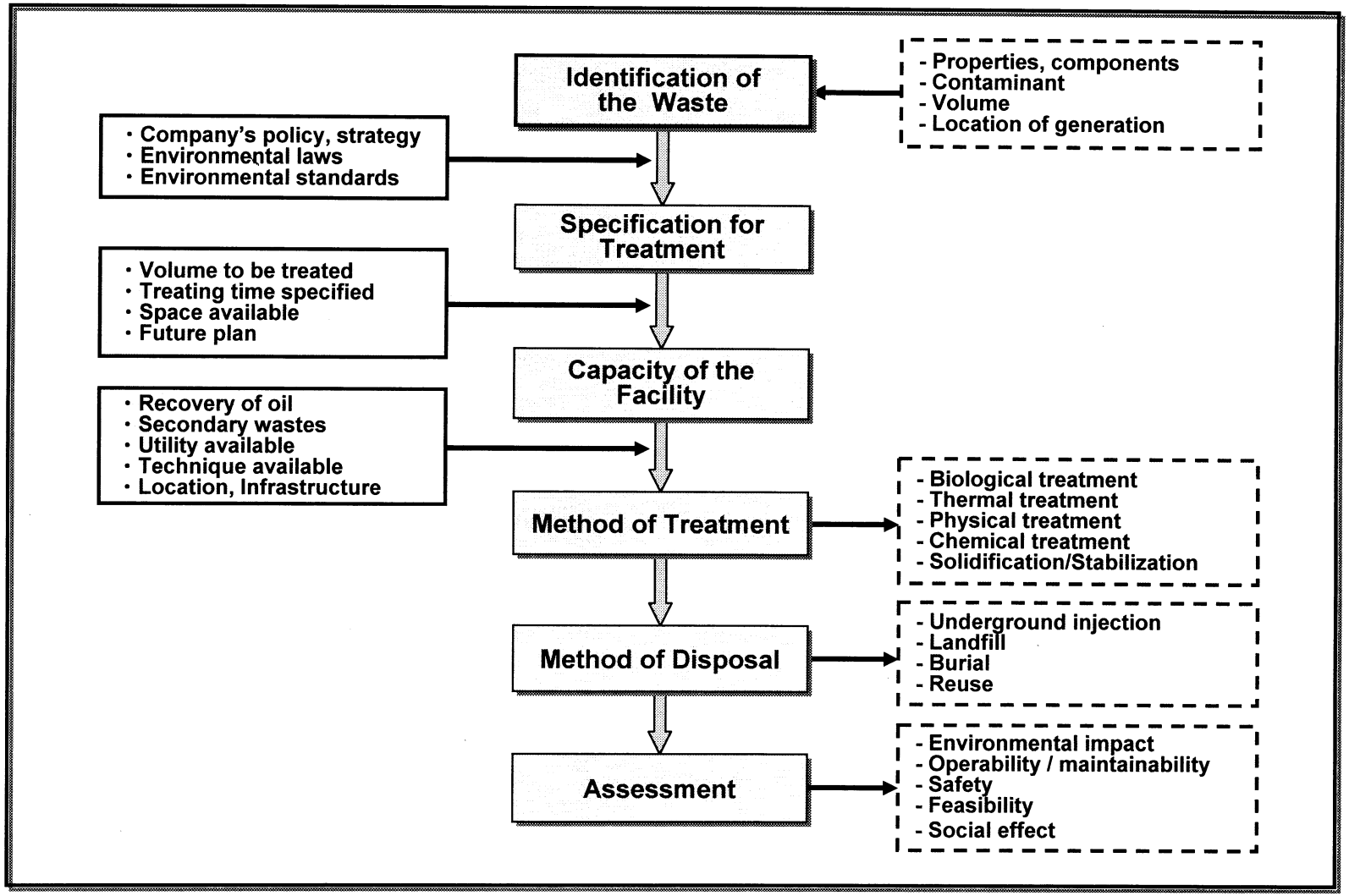
- *ENVIRONMENTAL REGULATION AND STANDARDS*
- *GOVERNMENT POLICY*
- *CORPORATE POLICY*
- *PROPERTIES AND VOLUME OF THE WASTES*
- *TECHNIQUES AVAILABLE*
  > OPERABILITY AND MAINTAINABILITY
- *TIME LIMITATION FOR TREATMENT*
- *SECONDARY WASTE DISCHARGE*
- *LOCATION AND SPACE AVAILABLE*
- *FINACIAL CONDITIONS*
- *COMPETITIVENESS AND ECONOMICS*
  > FEASIBILITY

Preliminary Survey in Kazakhstan

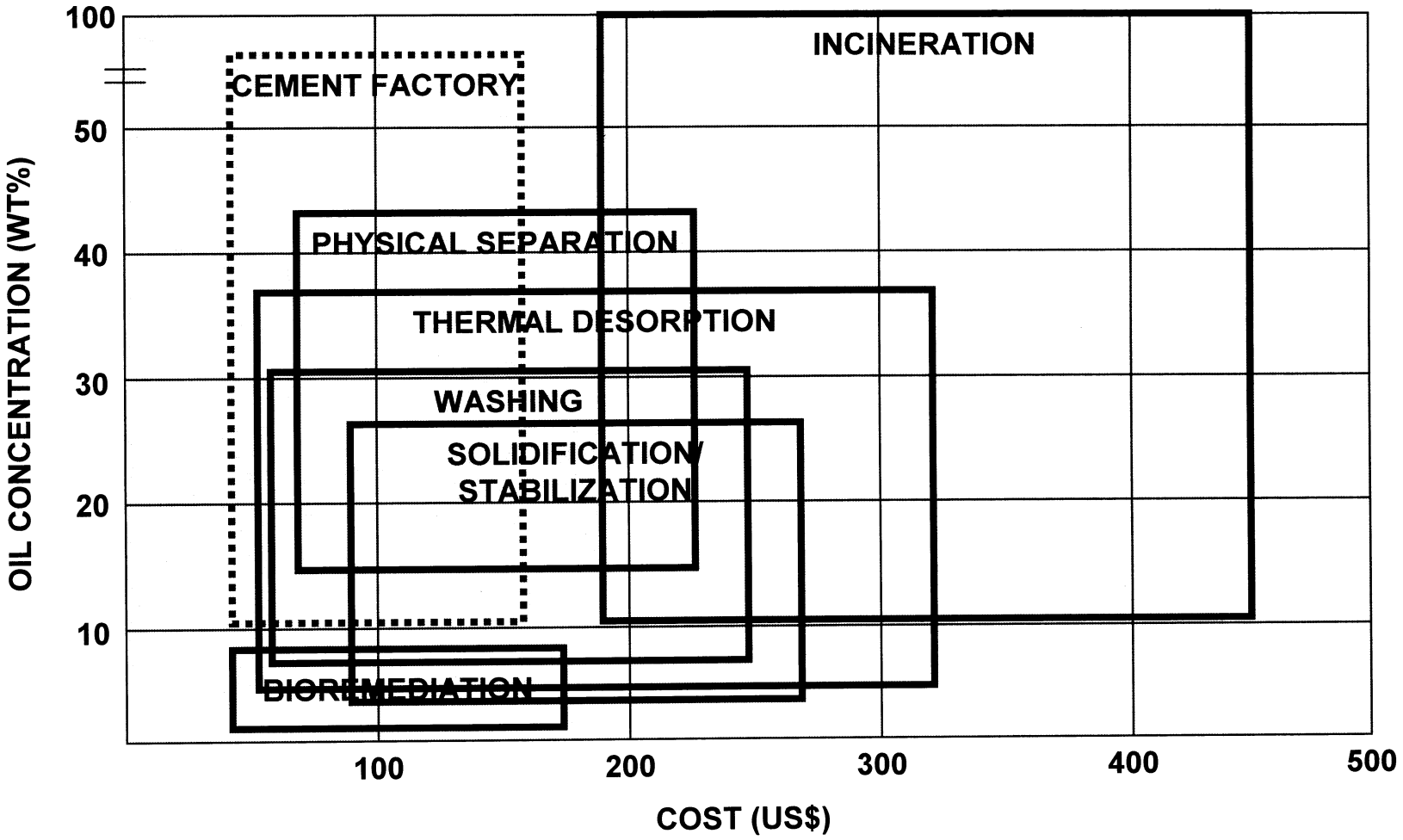
1. *PRESENT STATUS OF OILY WASTES AND THEIR TREATMENT/DISPOSAL MEASURES*
2. *ENVIRONMENTAL REGULATION AND STANDARDS*
3. *INTENTIONS AND/OR PLANS OF THE GOVERNMENT*
4. *INTENTIONS AND/OR PLANS OF THE OPERATING COMPANIES*
5. *PRESENT ENVIRONMENTAL, ECONOMICAL,SOCIAL IMPACTS*



PROCEDURE OF STUDY FOR TREATMENT/DISPOSAL METHODDS

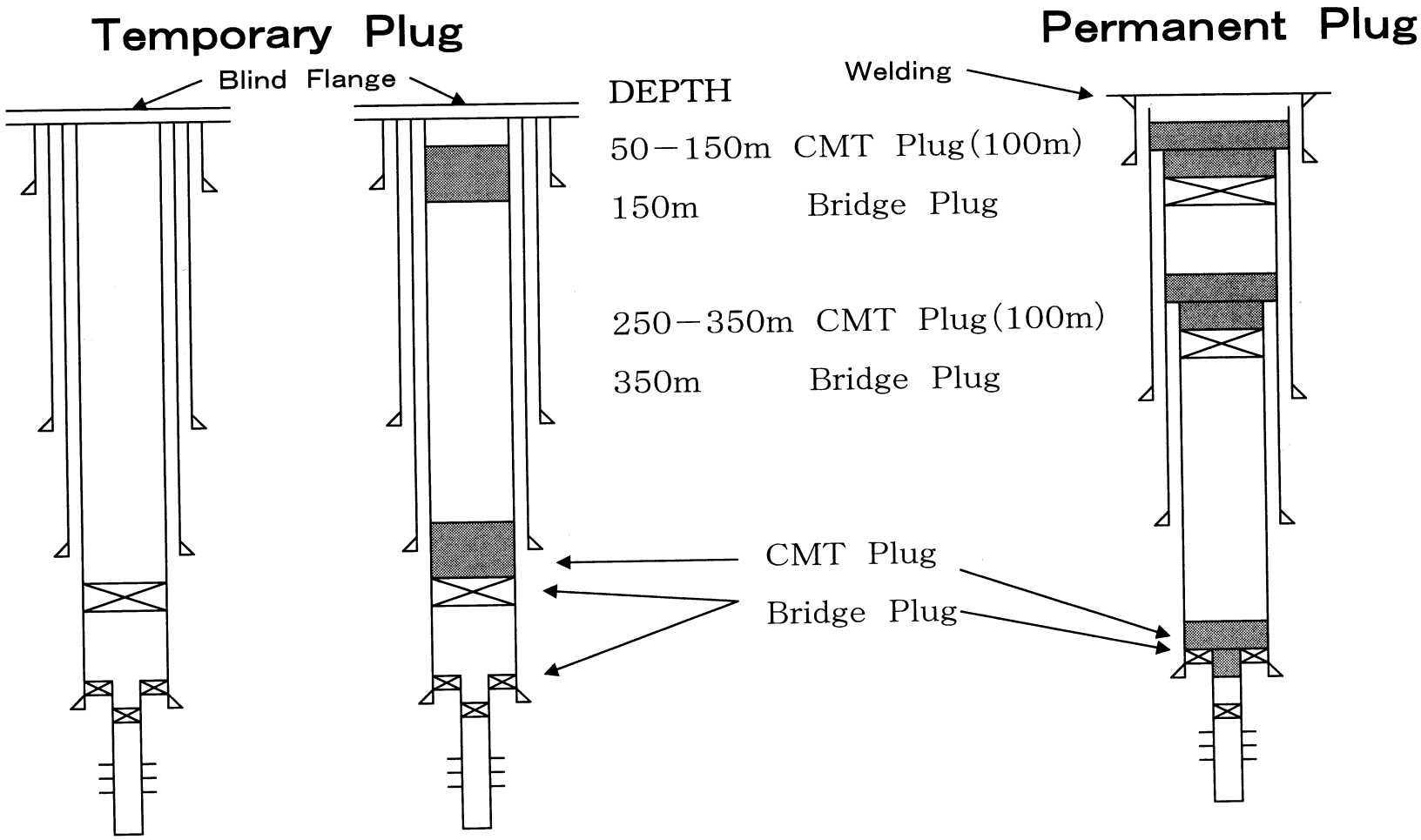


COMPARISON OF CLEANUP METHODS
- CONCEPT OF COSTS -

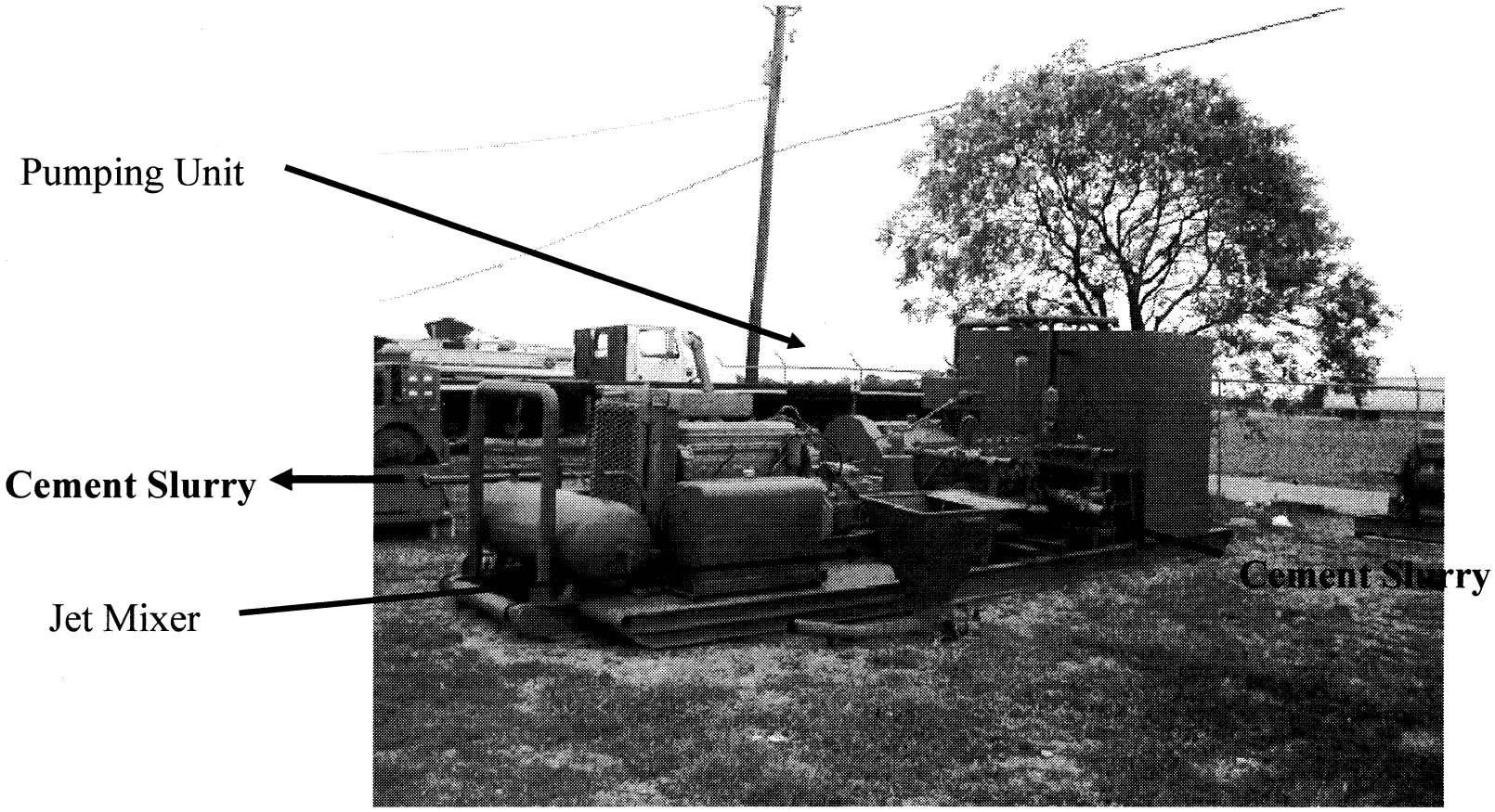


WELL ABANDONMENT

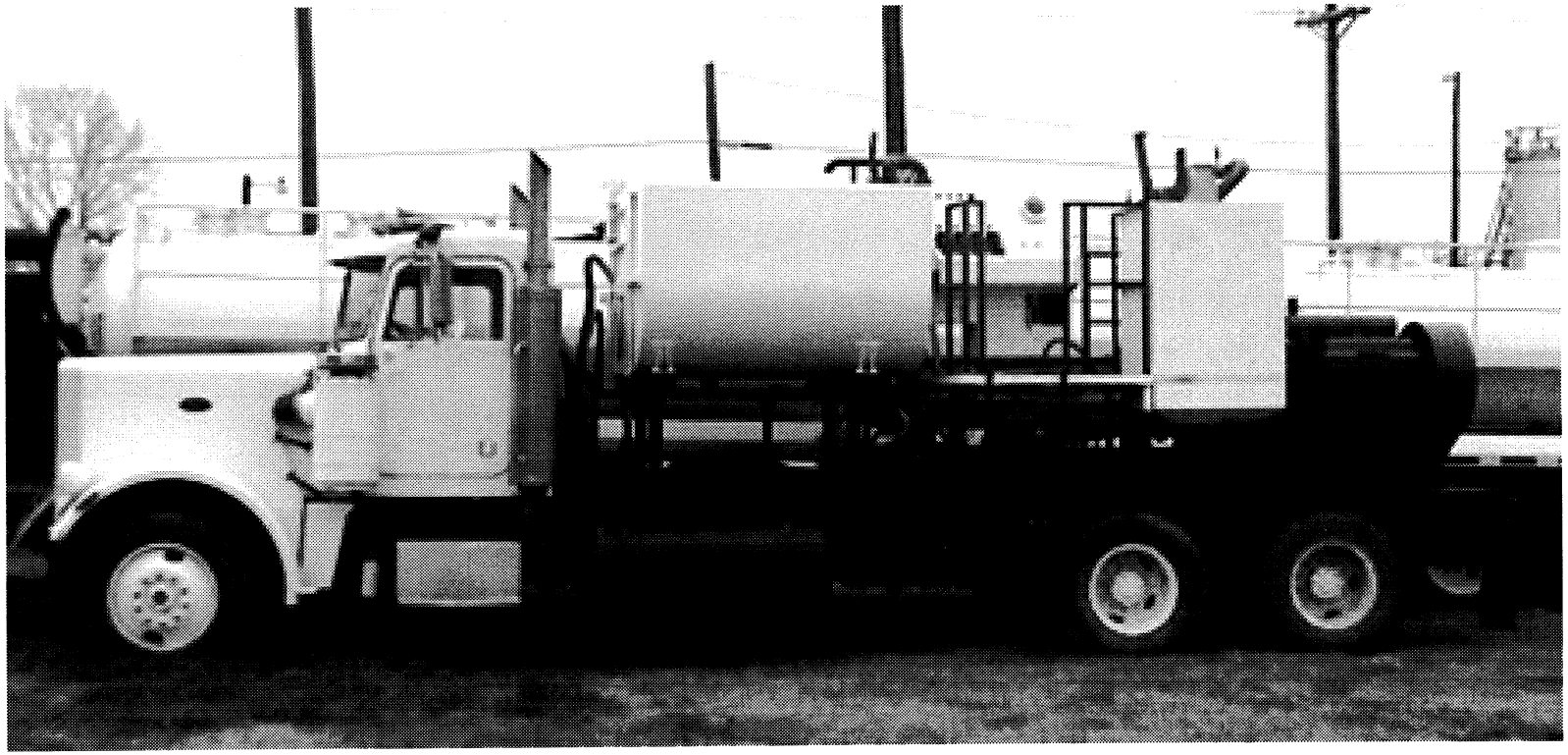
WELL PLUG SCHEMES



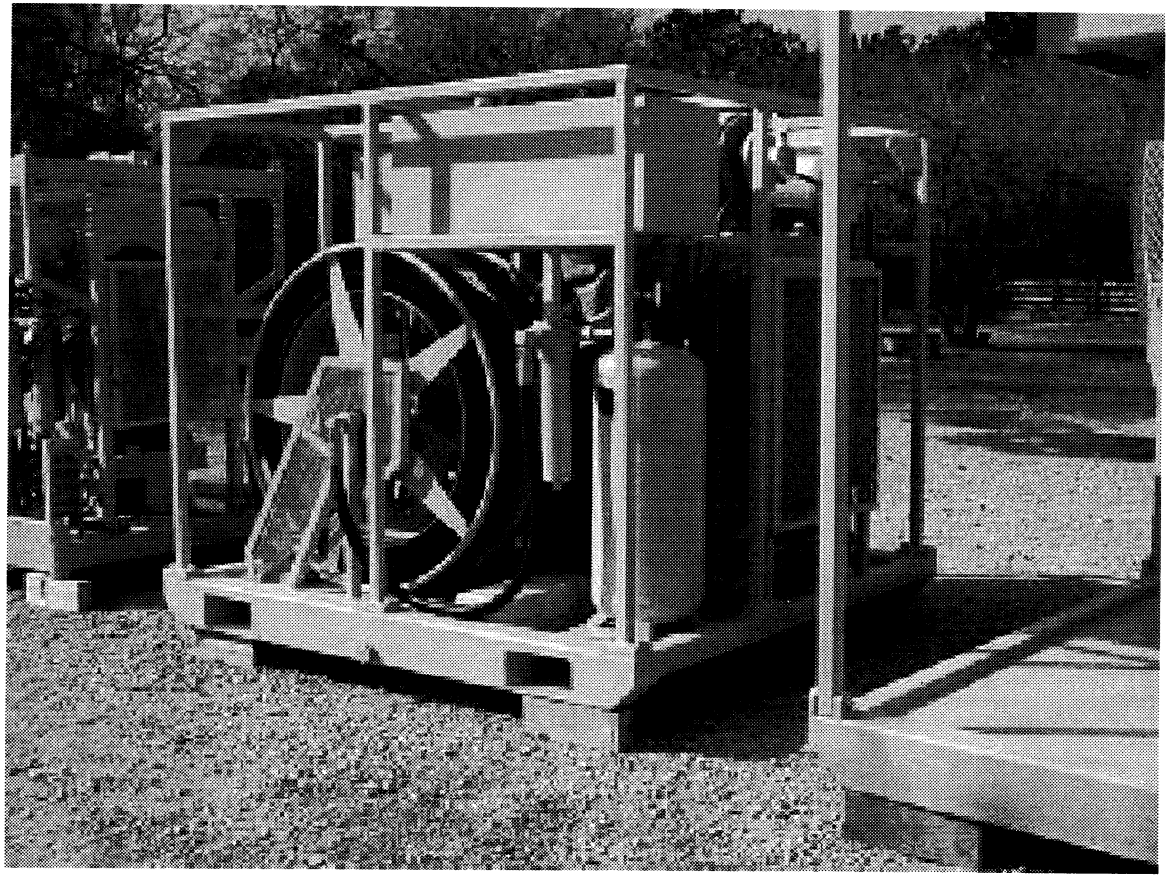
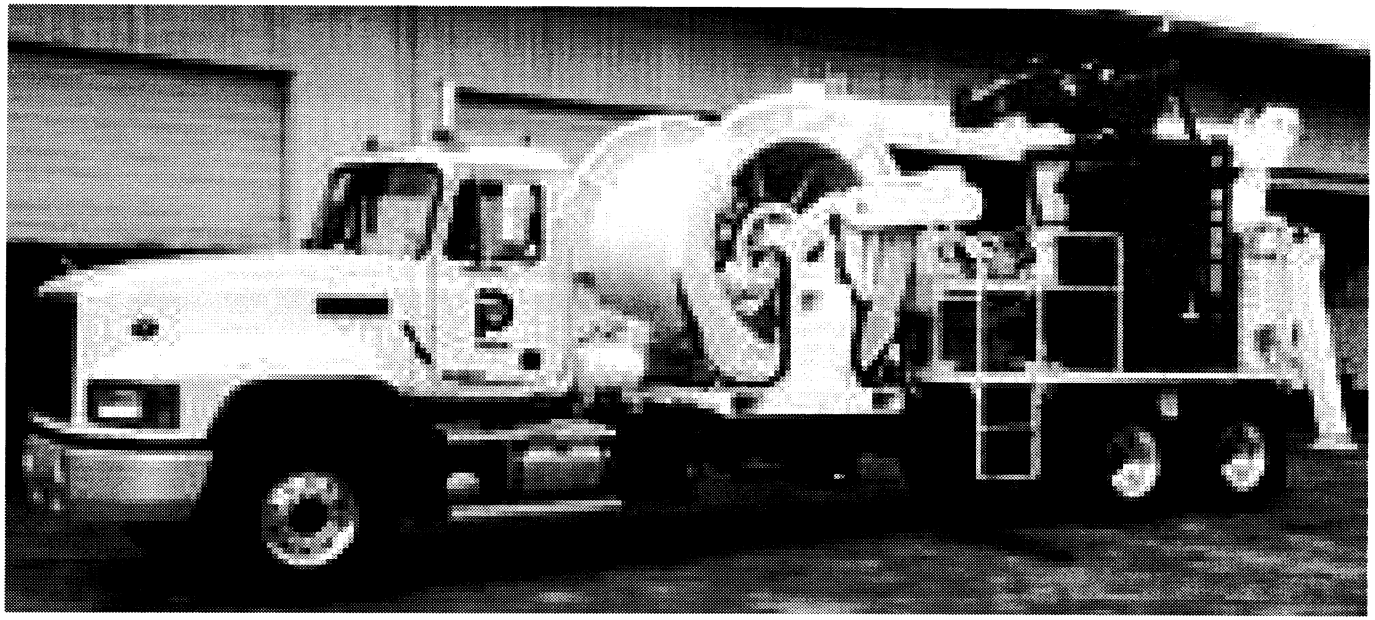
CEMENTING SKID



SIGLE TRUCK CEMENTER



COILED TUBE



TRUCK MOUNTED COILED TUBE