

# Group – 3

## The Impacts of Mining and Drilling on Environment

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## MINING

- **Mining** is the extraction of valuable minerals or other geological materials from the earth from an ore body, lode, vein, seam, reef or placer deposits.
- **Mining** is required to obtain some of the valuable material that cannot be grown through agricultural processes, or created artificially in a laboratory or a factory, but is naturally present in the earth's crust.
- Mining of stones and metal has been a human activity since pre-historic times.
- Modern mining processes involve prospecting for ore bodies, analysis of the profit potential of a proposed mine, extraction of the desired materials, and final reclamation of the land after the mine is closed, in order to restore the ecosystem that was destroyed or to prevent any further ecosystems from destruction.



## IMPACTS

- Some of the impacts include erosion, deforestation, formation of sinkholes, loss of biodiversity, and contamination of soil, groundwater and surface water by chemicals from mining processes.
- Bad mining practices in a coal mine can ignite coal fires, which can burn for decades, release fly ash and smoke laden with greenhouse gasses and toxic chemicals, one major cause for air pollution.
- Water-pollution problems caused by mining include acid mine drainage, metal contamination, and increased sediment levels in streams.
- Mining can cause physical disturbances to the landscape, such as waste-rock piles and open pits. it is also possible that many of the premining surface features cannot be replaced after mining ceases.

## OIL AND GAS DRILLING

- **Oil and Gas drilling** is the process by which tubing is bored through the Earth's surface and a well is established, from which petroleum and natural gas are extracted.
- Oil was used primarily for lighting, as a lubricant, for caulking ships (making them watertight), and for jointing masonry (for building). Natural gas is used as a source of energy for heating, cooking, and electricity generation. It is also used as fuel for vehicles.
- The first oil drilling occurred in China during the 4th century. Then it expanded throughout Asia and the Middle East by the 8th century.
- Oil was usually found bubbling up to Earth's surface at what are called oil seeps, but even by early 1850's crude oil was still obtained by skimming it off the tops of ponds.
- Natural gas was usually obtained as a by-product of producing oil, it was first used by the Chinese in about 500 BCE.



## IMPACTS

- Drilling causes deforestation as trees are felled to make roads, allow for oil rigs and make room for camps.
- If an oil spill occurs, it leaches thousands of gallons of crude oil into the waterways, which contaminate waterways and the air putting Indigenous communities at risk.
- Increased oil extraction brings more CO<sub>2</sub> into our atmosphere increasing climate change which in turn results in global warming.
- Construction activities associated with oil and gas drilling leave behind radical impacts to the landscape which increase erosion leading to landslides, flooding and the opportunity for weed infestation.



## SOME CASE STUDIES

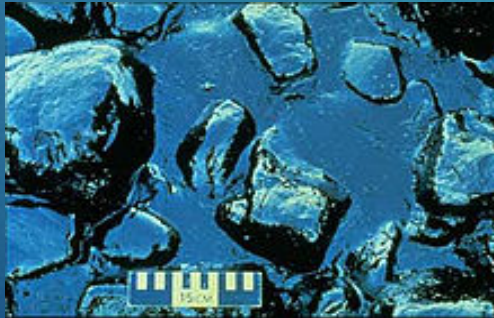
Ok Tedi Mine



Acid mine drainage, Rio Tinto River



Exxon Valdez oil spill



The Piper Alpha disaster

