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PRODUCTION PROBLEMS OF MERCURY IN KYRGYZSTAN

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Short history of mercury mining in the territory of Kyrgyzstan

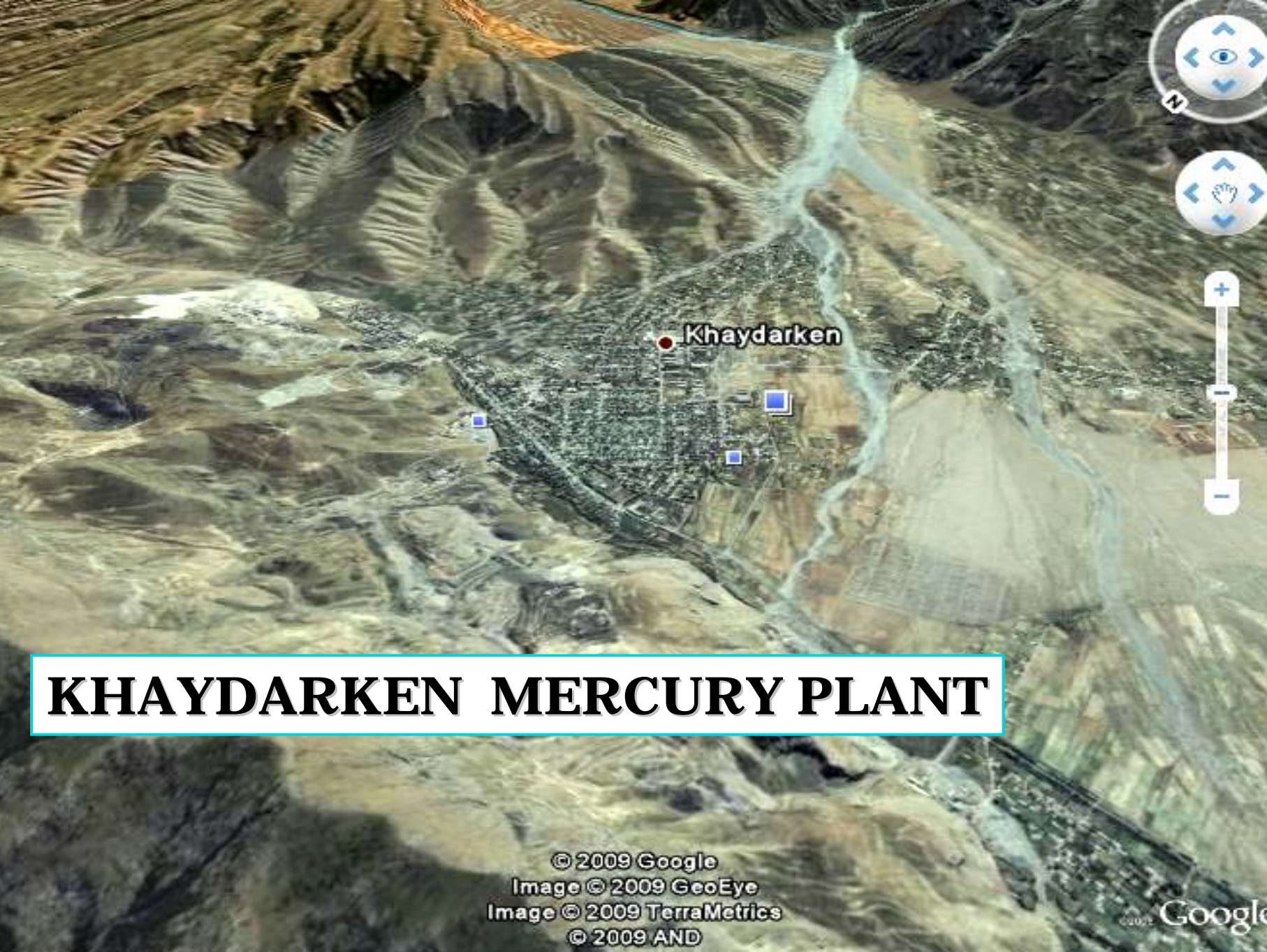
- Mercury was extracted in the territory, concluded in the current borders of the Kyrgyz Republic, in I-II millennia before of our era.
- Blossom of mercury extraction falls on VIII-XI centuries of our era. Practically all known mercury deposits of Kyrgyzstan were found out by traces of ancient miners. In total in the territory of Kyrgyzstan over 2000 ancient developments (not only mercury) are fixed. Extraction stopped at the turn of XII-XIII century, in connection with the Mongolian conquest.

Mercury ores

- Mercury deposits located in the territory of Kyrgyzstan are a component of the Central Asian mercury and antimony provinces.
- The central position is occupied by the South Fergana (Kyrgyzstan) and Zeravshano-Gissarsky (Tajikistan) mercury and antimony ore belts.
- The general extent of mercury ore belt exceeds 1000 km, with the from 50 to 100 km.

Mercury ores

- The largest deposits of mercury ores and complex mercury-antimony and fluorite ores are located in the territory of Kyrgyzstan.
 - Khaydarken deposits;
 - Ulu-Too deposits;
 - Chauvai deposits;
 - Symap deposits, etc.
- Their active development started since 1941 by Khaydarken mercury plant other enterprises in a primitive way.



KHAYDARKEN MERCURY PLANT

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Location of Khaydarken Mercury Plant

- The enterprise is located in a high-mountainous city type settlement of Khaydarken on Alay ridge of Tian-Shan (≥ 1900 m asl)
- Khaydarken settlement:
 - Population – 11 thousand people;
 - 3 comprehensive high schools, a hospital, preschool institutions and, branches of state post service and telecommunication, the enterprises of utility and other auxiliary services.
- The settlement functions in a close connection with industrial activity of the mine. There are several villages located nearby, population of which is also closely connected with the mine's activity.



Metallurgical plant



Metallurgical plant

- The enterprise conducts underground extraction of mono metal (mercury) and complex (mercury-antimony-fluorite) ores.
- It produces metal mercury with the purity of 99,99 % and 99,999 %, and fluorite concentrate for welding materials.
- It processes mercury-antimony concentrate.



Storage of cinder

A photograph showing a tailings discharge into a body of water. A large, dark, curved pipe or chute is positioned on a sandy beach, discharging a thick, brown, slurry-like substance into a shallow pool of water. The background features a large, steep mountain with green vegetation and rocky outcrops. The sky is clear and blue. The word "Tailings" is overlaid in large, bold, black text on the left side of the image.

Tailings

- The wastes from processing of mercury ores, basically are stored near to manufacture (places of extraction, manufacture of metal mercury). These are dumps of dead rocks, empty ores, cinder, sludge and tails.
- The greatest percent among the wastes is made by waste of stripping, empty ores and cinder.
 - Cinder is stored in immediate proximity from the factories of metal mercury production (the volume of cinder of Khaydarken plant makes approximately 12-15 million m³)



Mine

Plant

Cinder

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Storage of cinder (wastes of mercury production)

- All of the products of the enterprise are exported.
- The quality of the produced mercury corresponds to the world standards.
- For internal republican needs mercury is not used, all products of Khaydarken GAO is exported to various countries.
- Mercury is sold, basically, up to 90 % from its production to the USA and Europe through European northern ports, and China. It is possible, that some of them act in a role of intermediaries.

- In connection with an increase of the number of small gold digger groups, cases of illegal trade of mercury now have become frequent. Often the origin of mercury involved in illegal circulation is unknown.

Acting production
mine of mercury ore



Researches on mercury impacts

- Studies carried out by the Ministry of Health of KR on impacts of mercury and mercury compounds on human body in the areas where mercury manufactures operate were not regular.
- The researches concerned mercury accumulation in various fabrics and human body parts (hair, blood, urine), depending on age, place of residing and work.
- High levels were registered in the bodies of workers occupied in production of metal mercury. The rest of the groups did not show mercury concentration beyond the limits of physiological norm.
- Some increase in blood of children has been fixed and it is explained by a higher capability of lungs aeration. Increase of the content of mercury in milk of nursing mothers has been noted as well.

- Concentration of mercury in the air of Khaydarkan settlement, in its various parts, depends on remoteness of factory and a daily fluctuation of the wind rose.
- The maximum concentrations were fixed on production site of metal plant, directly in places of pour of mercury products and of its purification. Some dependence was established of the concentration of mercury in the body from the profession, experience of work and a season of the year.

- Researches of influence of mercury and mercury connections on human health were conducted extremely irregularly and in various directions, with the main stress on sanitary-and-hygienic inspection.
- Impact of anthropogenic influence of places of production of metal mercury on the population of medical, ecological, biochemical character in republic was not researched. Mercury receipt by human body with food was not studied also.

- Realizing in full the growing threat for the health of people and the environment, as a result of growth of production and consumption of dangerous materials, we fully understand the concern of the problem discussed at this conference.
- Therefore, if the issue will be about shutting down mercury sales by Khaidarkan Mercury Plant, it will be necessary to consider and resolve a complex of problems arising from this subject.



THANK YOU
FOR ATTENTION !