



Participants of the XXIX Curso Latinoamericano de Metalogenia UNESCO-SEG-SGA
 “Sustentabilidad en la Minería: desde el yacimiento, vía el proceso de extracción, hasta la gestión de los desechos mineros” Del 11 al 22 de Octubre de 2010, Concepción, Chile



Dr. Kirk Nordstrom (USGS) teaching about thermodynamics and geochemical modeling in environmental geochemistry and acid mine drainage.



Participants preparing their final presentation on a case study on sustainability in mining.



Final presentations of the participants.

Field trip to Chañaral (contamination by marine shore tailings) –Chuquicamata (supergene enrichment and mining process)-Salar de Atacama (Lithium mining)- El Tatio (geothermal field):



BBQ at late night arrival at the beach lodge of the Pan de Azúcar national park.



Early morning boat trip to the Pan de Azucar Island (before breakfast), to visit the receiving ecosystem of the contamination of Chañaral.



Breeding Humboldt penguins on the Pan de Azúcar Island.



Visit of the tailings deposit in the Chañaral Bay with the participation of technical personal from the Ministry of Health explaining the relationship between ministry and the community of Chañaral affected by the contamination.



Visit of the heap leaching operation for oxide ores Osvaldo Martinez Carvajal, El Salado (ENAMI) close to Chañaral.



Study of the supergene enrichment in the Ramiro Tomic mine (CODELCO norte)



In the open pit of Chuquicamta (CODELCO Norte)



José Rojas explaining the ore geology of the Exotica deposit at Chuquicamata (CODELCO Norte).



Sampling in the open pit of Exotica (CODELCO Norte)



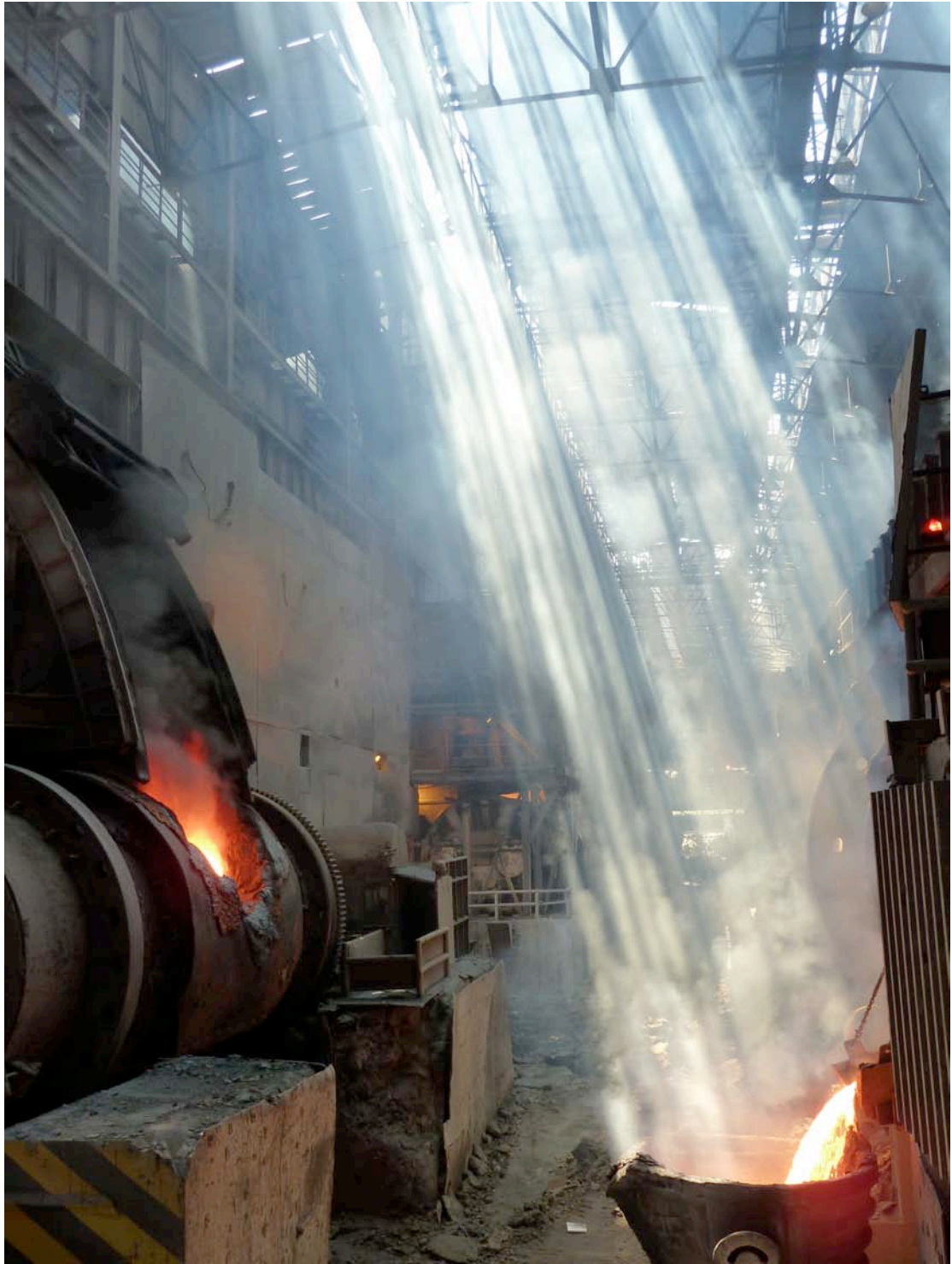
SAC milling at the Chuquicamata benefaction plant (CODELCO Norte)



Flotation cells at Chuquicamata (CODELCO Norte)



The tailings impoundment El Talabre (Chuquicamata; CODELCO Norte); 51 km² surface area.



Visit of the smelter of CODELCO Norte at Chuquicamata



Copper blisters as final product of the smelter.



Heap (run of mine) bioleaching operation of low-grade ore at Chuquicamata (CODELCO Norte)



Visit of the lithium mine of SQM in the Salar de Atacama.



Visit of the national park of the Salar de Atacama as potentially affected ecosystem of lithium mining due to groundwater level changes.



Waiting for the sunset in the Valle de la Luna of the Salt Mountains close to San Pedro de Atacama.



Kirk Nordstrom explaining the geochimistry of the geothermal field of el Tatio and comparing it to the Yellowstone park (USA).



Geysers at sunrise at El Tatio.



Final bath of the „hardest“ participants in the hot spring of el Tatio.