

NATO SPS Study "Prevention and Remediation Issues in Selected Industrial Sectors "

Ljubljana, 17 – 22 July 2007

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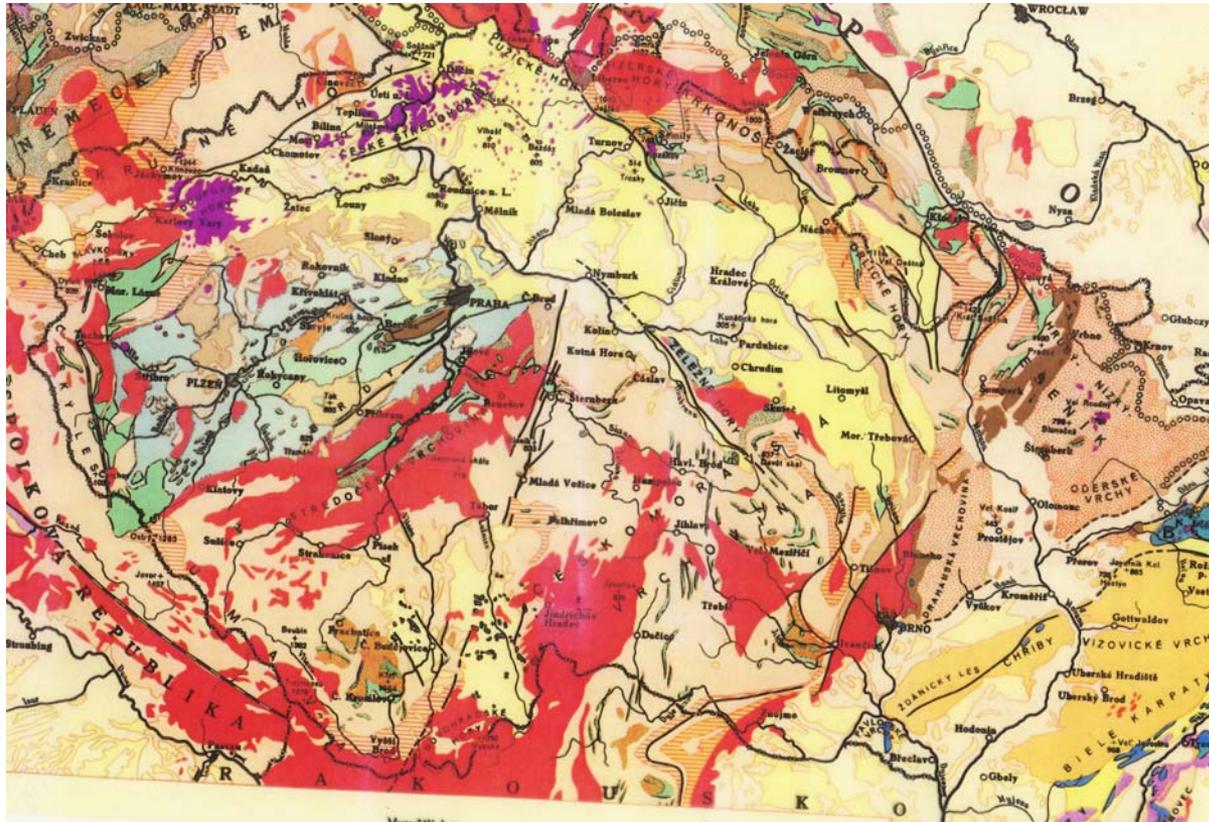
**North Bohemian Tertiary sedimentary basins
and negative impact of brown coal mining on the
environment**



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Geological map of the Czech Republic

Scale 1 : 1 000 000



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IMPACTS OF MINING ON THE GEOLOGICAL ENVIRONMENT

- **North Bohemian Sedimentary Tertiary Brown Coal Basins**
- **North Moravian Black Coal Basin**
- **ISL and underground Mining of Uranium Deposits**
- **Extensive Exploitation of Non-recoverable Mineral Resources**
- **Anthropogenic Pollution and Contamination of Environment**



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NEGATIVE IMPACTS OF OPENCAST BROWN COAL MINING

- **Long Term Occupation of Land**
- **Enormous Inner and Outer Waste Dumps**
- **Airborne Dust Pollution and Exhalation from Opencast Mining**
- **Extensive Excavation and Transfer of Overburdens**
- **Pollution from Selfburning Brown Coal Seams**



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NEGATIVE IMPACTS OF OPENCAST BROWN COAL MINING ON THE HEALTH OF INHABITANTS

a) in connection with mining quantities

**North Bohemian Basin – 329 000 inhabitants
181,3 ton per 1 inhabitant / 1 year**

b) in connection with transfer of oberburden

216,7 mil. m³ of overburden

c) in connection with extensive excavations

(airborne particulates, ash, air pollution)

3-5 bill. m³ of excavations

(cont.)



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**NEGATIVE IMPACTS OF OPENCAST BROWN COAL MINING
ON THE HEALTH OF INHABITANTS (cont.)**

- d) other criteria influencing life and health of inhabitants**
- **abnormal concentration of operating brown coal burning power plants**
 - **average contents of SO₂ deposition 50 – 80 µg/m³ in 1993**
 - **average contents of dust deposition 50 – 100 µg/m³ in 1993**
 - **average density of population was in 1999 about 250 inhabitants per 1 km²**
 - **production of about 30.000 tons of waste in each district**



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ENVIRONMENTAL REMEDIATION PROGRAM

- Environment Impact Assessment, evaluation and subsequent
- remediation programme design
- Remaining open pits (about 3 bil.m³) flooded forming lakes for rekreation
- Landscaping projects on outer and inner dumps – forests, orchards, vineyards, airports, horse-racing, golf course, etc.

(see following fotos)



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Fig 1. Open pit Ležáky (1970 and 1999)



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Fig 1. Open pit Ležáky (1970 and 1999)



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Fig. 2 Outer waste dump changed to leisure park (1962 and 1995)



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Fig. 3 Outer waste dump beány recultivated to vineyard (1975 and 1975)



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Fig. 4 Vrbenský Mine changed to leisure park with lake (1975 and 1997)



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Fig. 5 Open pit Šverma changed to horse-racing place (1982 and 1999)



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Fig. 6 Outer waste dump of Mine Vrbenský
changed to autodrome (1979 and 1999)



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Fig. 7 Inner waste dump changed to modern local airport (1978 and 2000)



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Fig. 8 Open pit Ležáky in 1979 and 1990



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Fig. 9 Sřtimice waste dump in 1984 and 1999



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Fig. 10 Barbora Mine in 1977 and 1998



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