

## LYPOVEN`KE FIELD OF COMPLEX ORES

**Mineral:** ores of chromium, nickel, cobalt.

**Type and period of subsoil use:** mining, 20 years.

**Location:** Holovanivskyi district of Kirovohrad region, near the western outskirts of Lipoven`ke village.

**Plot area:** 42.3 ha.

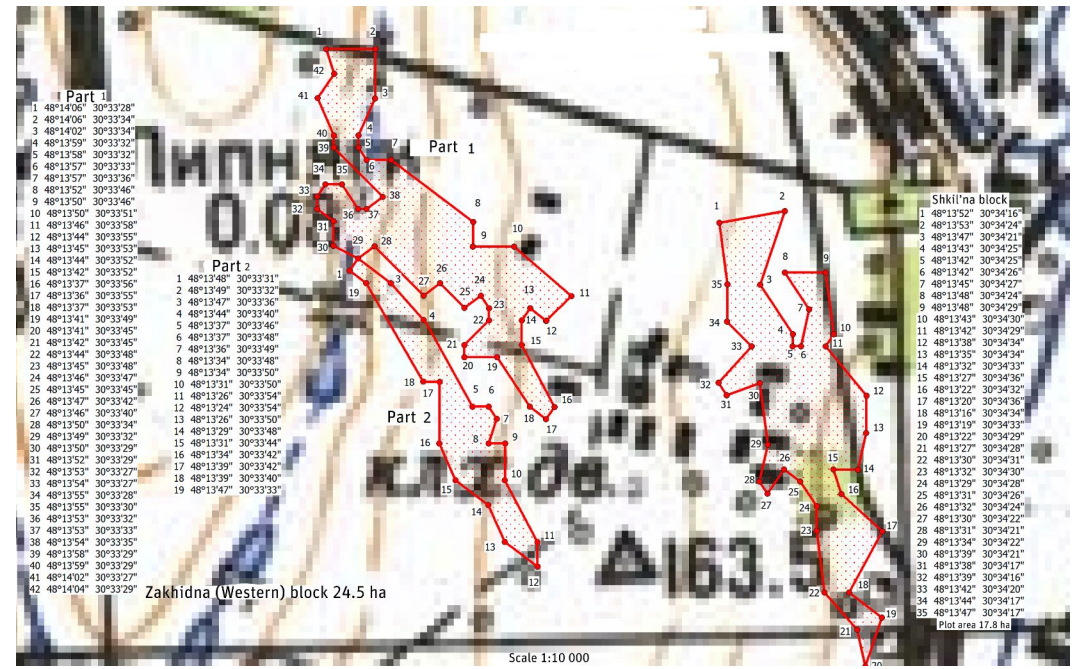
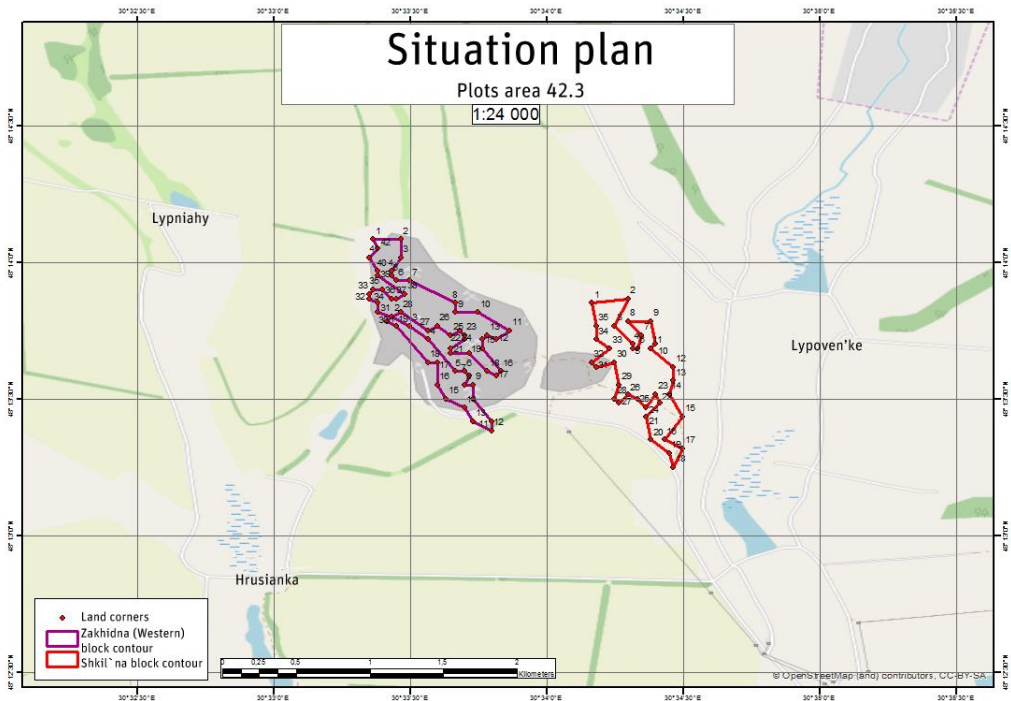
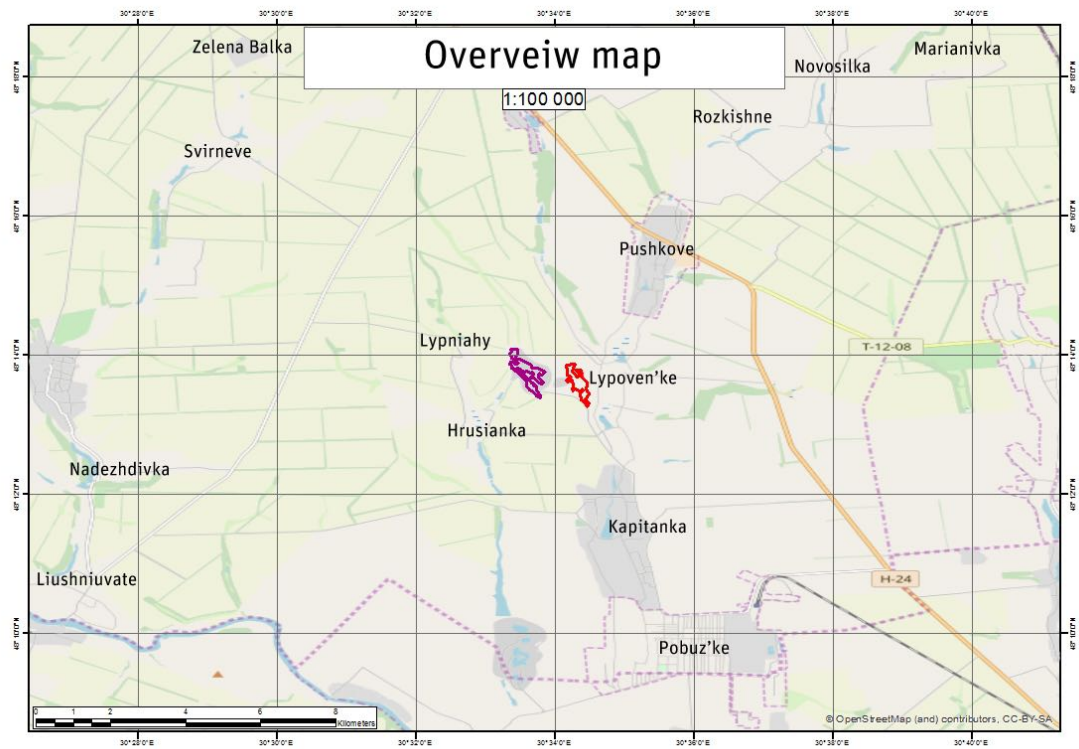
**Geological summary.** The field is represented by two blocks - Zakhidna (Western) and Shkil`na. The Zakhidna block is located 600 m west of Lipovenke village. Shkilna is on the right side of Mokra Derenyukha river. It is located within the southerwestern slopes of the central part in Ukrainian crystalline massif. The chromite ores of the Lypoven`ke field on the block are to the west of the village where the blocks of amphibolites and biotite gneisses merge together. In the Zakhidna block of chromite ores, they are represented by three deposits of massive (dense) and densely impregnated ores. Deposits have a lenticular shape. Chromite ores of Shkilna block are represented by a number of small lenticular deposits. Thickness of orebodies of polymetallic ores is up to 15 m and length is 60m –80 m. Ores are massive, dense and sparsely interspersed. Contacts are often clear, sharp, straight or tortuous, contact changes are not observed. Massive (dense) ores with an average chromium oxide content of 36.1–43% do not require enrichment. Dense ores with an average content of useful components from 22.7% to 31.1% need enrichment.

**Available geological information.** Exploration showed that the best indicators can be obtained by gravity. Thus, from the source ore with a content of chromium oxide 36.5% (dense ores) and 23.6% (interspersed) when grinding up to 0.16 mm, concentrates with an oxide content of 465% and 42%, respectively were obtained, the extraction is 83.9% and 73, 8%. Large portion of chromium ore is associated with residuum of ultrabasic rocks and contains nickel and cobalt in industrial concentrations. The development of cobalt + nickel ores is provided in the way of surface mining. This method will allow together with cobalt + nickel ores to extract a significant part of chromite ores which are represented by a loose variety.

**Resources/reserves assessment.** Reserves of chrome ore were approved by the State Commission of Ukraine on Mineral Resources (SCMR) USSR and protocol #2735 in July 16, 1959. Reserves were calculated by the method of vertical sections according to the conditions adopted by the State Plan of USSR in October 24, 1958 (protocol #58). Reserves of silicate + nickel ores approved by SCMR USSR by protocol #2594 in February 14, 1959. The average nickel content in the Western block under this protocol is 1.09% by category A; 0.92% by category B; 0.86% by category C1. The average cobalt content is -0.064%, 0.048%, 0.044% respectively. On Shkilna block the average content of nickel is 0.92% and cobalt -0.056% in category C1. Off-balance reserves in the categories B and C1 were calculated by the content of nickel, cobalt and the nature of the ores. The average nickel content in category B is 0.41% and 0.46% in category C1. The average cobalt content is 0.029% for both categories.

[http://geoinf.kiev.ua/wp/geologichni+zviti.php?rep=fnd\\_shifr.rdf&schifr=19572](http://geoinf.kiev.ua/wp/geologichni+zviti.php?rep=fnd_shifr.rdf&schifr=19572)

**Minimum work program.** Provided by Mining terms Model agreements and defined in "Work Program" annex. Model agreements are listed at the link: <https://www.geo.gov.ua/primirni-ugodi-pro-umovi-koristuvannya-nadrami/>



- Part 1**
- 1 48°14'06" 30°33'28"
  - 2 48°14'06" 30°33'34"
  - 3 48°14'02" 30°33'34"
  - 4 48°13'59" 30°33'32"
  - 5 48°13'58" 30°33'32"
  - 6 48°13'57" 30°33'33"
  - 7 48°13'57" 30°33'36"
  - 8 48°13'52" 30°33'46"
  - 9 48°13'50" 30°33'46"
  - 10 48°13'50" 30°33'51"
  - 11 48°13'46" 30°33'58"
  - 12 48°13'44" 30°33'55"
  - 13 48°13'45" 30°33'53"
  - 14 48°13'44" 30°33'52"
  - 15 48°13'42" 30°33'52"
  - 16 48°13'37" 30°33'56"
  - 17 48°13'36" 30°33'55"
  - 18 48°13'37" 30°33'53"
  - 19 48°13'41" 30°33'49"
  - 20 48°13'41" 30°33'45"
  - 21 48°13'42" 30°33'45"
  - 22 48°13'44" 30°33'48"
  - 23 48°13'45" 30°33'48"
  - 24 48°13'46" 30°33'47"
  - 25 48°13'45" 30°33'45"
  - 26 48°13'47" 30°33'42"
  - 27 48°13'46" 30°33'40"
  - 28 48°13'50" 30°33'34"
  - 29 48°13'49" 30°33'32"
  - 30 48°13'50" 30°33'29"
  - 31 48°13'52" 30°33'29"
  - 32 48°13'53" 30°33'27"
  - 33 48°13'44" 30°33'27"
  - 34 48°13'55" 30°33'28"
  - 35 48°13'55" 30°33'30"
  - 36 48°13'53" 30°33'32"
  - 37 48°13'53" 30°33'33"
  - 38 48°13'54" 30°33'35"
  - 39 48°13'58" 30°33'29"
  - 40 48°13'59" 30°33'29"
  - 41 48°14'02" 30°33'27"
  - 42 48°14'04" 30°33'29"

- Part 2**
- 1 48°13'40" 30°33'31"
  - 2 48°13'49" 30°33'32"
  - 3 48°13'47" 30°33'36"
  - 4 48°13'44" 30°33'40"
  - 5 48°13'37" 30°33'46"
  - 6 48°13'37" 30°33'48"
  - 7 48°13'36" 30°33'49"
  - 8 48°13'34" 30°33'48"
  - 9 48°13'34" 30°33'50"
  - 10 48°13'31" 30°33'50"
  - 11 48°13'26" 30°33'54"
  - 12 48°13'24" 30°33'54"
  - 13 48°13'26" 30°33'50"
  - 14 48°13'29" 30°33'48"
  - 15 48°13'31" 30°33'44"
  - 16 48°13'34" 30°33'42"
  - 17 48°13'39" 30°33'42"
  - 18 48°13'39" 30°33'40"
  - 19 48°13'47" 30°33'33"

- Shkil'na block**
- 1 48°13'52" 30°34'16"
  - 2 48°13'53" 30°34'24"
  - 3 48°13'47" 30°34'21"
  - 4 48°13'43" 30°34'25"
  - 5 48°13'42" 30°34'25"
  - 6 48°13'42" 30°34'26"
  - 7 48°13'45" 30°34'27"
  - 8 48°13'48" 30°34'24"
  - 9 48°13'48" 30°34'29"
  - 10 48°13'43" 30°34'30"
  - 11 48°13'42" 30°34'29"
  - 12 48°13'38" 30°34'34"
  - 13 48°13'35" 30°34'34"
  - 14 48°13'32" 30°34'33"
  - 15 48°13'27" 30°34'36"
  - 16 48°13'22" 30°34'32"
  - 17 48°13'20" 30°34'36"
  - 18 48°13'16" 30°34'34"
  - 19 48°13'19" 30°34'33"
  - 20 48°13'22" 30°34'30"
  - 21 48°13'27" 30°34'28"
  - 22 48°13'30" 30°34'31"
  - 23 48°13'32" 30°34'30"
  - 24 48°13'29" 30°34'28"
  - 25 48°13'31" 30°34'26"
  - 26 48°13'32" 30°34'24"
  - 27 48°13'30" 30°34'22"
  - 28 48°13'31" 30°34'21"
  - 29 48°13'34" 30°34'22"
  - 30 48°13'39" 30°34'21"
  - 31 48°13'38" 30°34'17"
  - 32 48°13'39" 30°34'16"
  - 33 48°13'42" 30°34'20"
  - 34 48°13'44" 30°34'17"
  - 35 48°13'47" 30°34'17"

# LYPOVEN`KE FIELD OF COMPLEX ORES

List of cadastral numbers of land plots,  
within the contour of the deposit

*Information on land plots, in particular by  
cadastral number, can be obtained on the Public  
Cadastral Map of Ukraine:  
<https://cutt.ly/Fx0CuBg>*

