

REVIEW OF THE SOTKAMO SILVER MINING PLAN AND ORE RESERVES

INTRODUCTION

Outotec (Finland) Oy was commissioned by Sotkamo Silver Oy to review the methodology and assumptions used in the Ore Reserve estimation. The mine planning and Ore Reserve estimates have been prepared by Mr Jouni Kankkunen, MSc (Mining), MAusIMM of JK-Kaivosuunnittelu Oy. The underlying Mineral Resource estimate has been prepared by independent consultant Dr Jyrki Parkkinen, EurGeol.

The review work has been done by Pekka Lovén, MSc(Mining), MAusIMM(CP) of Outotec (Finland) Oy, a Competent Person as defined by Joint Ore Reserves Committee (JORC, 2012).

This report is based on the following information:

- Discussions with Mr Ilkka Tuokko, Member of the board and previous Managing Director of Sotkamo Silver Oy, Mr Jouni Kankkunen, Mine planning consultant for Sotkamo Silver Oy and Dr Jyrki Parkkinen, EurGeol, Independent consultant.
- Drill hole database (2013) and Mineral Resource blockmodel in Surpac format (blockmodel2013_8j.mdl).
- Sotkamo Silver mine designs in Surpac formats.
- Sotkamo Silver Ore Reserve calculations in Excel format.

In preparing this report, Outotec (Finland) Oy has relied on the information provided by Sotkamo Silver Oy. Outotec (Finland) Oy has no reason to believe that this information is materially misleading, incomplete or contains material errors.

1. MINE PLANNING AND ORE RESERVE ESTIMATE

1.1. Mineral Resource for Mining

The Ore Reserve estimate is derived from the Measured and Indicated Mineral Resources. Since the last published Mineral Resource Estimate (28.1.2014) the resource blockmodel has been updated to incorporate the latest understanding on the deposit structure and to better serve the needs of the mine planning when sensor based sorting is used in the process.

A summary of the Mineral Resources (blockmodel: blockmodel2013_8j.mdl), reported with 30 g/t Ag cut off and which have been used as the base for the Ore Reserve estimation is shown in Table 1.

Resource Class	Tonnes	Ag	Au	Pb	Zn
	Mt	g/t	g/t	%	%
Measured	3.01	87	0.26	0.31	0.66
Indicated	4.40	78	0.23	0.27	0.60
M+I	7.41	81	0.24	0.29	0.62
Inferred	4.1	58	0.1	0.2	0.4

Table 1 Sotkamo Silver Oy Mineral Resources at 30 g/t Ag cut off grade.

The 30 g/t Ag cut off corresponds to about 18 €/t NSR value including the credits from other payable metals using today's metal price assumptions. Assuming the silver price of 30 Us\$/oz level the NSR is about 30 Us\$/t. It is considered that the selected cut off criteria for Mineral Resource is appropriate in terms of the requirement of reasonable prospects for eventual economic extraction.

1.2. Key conversion factors

The key assumptions and parameters used to convert the Mineral Resources into Ore Reserves are as follows:

- Cut-off grade: Underground mining: stope cut off 30 €/t (NSR) for sorter feed, 62 €/t for direct mill feed, open pit mining 30 €/t (NSR) for direct mill feed.
- Mining Dilution: Underground mining: 15%, open pit mining: 10%.
- Mining Recovery of planned stopes: 90%.
- Metallurgical recoveries to concentrates: Ag = 88%; Au = 81%; Pb = 77%; Zn = 89%.
- Metal Prices: Ag = 14.7 Us\$/oz; Au = 1120 Us\$/oz; Pb = 1690 Us\$/t; Zn = 1790 Us\$/t.
- The smelter terms are based on the zinc concentrate sales agreement between Sotkamo Silver oy and Boliden commercial AB and the lead silver concentrate Letter of Intent between Sotkamo Silver Oy and Berzelius Stoberg GmbH.
- Mill feed rate: 350 000 t/a year 1-3, 450 000 t/a year 4 onwards.

- Pre concentrating by XRT sorting is applied from the year 3 onwards. To maintain constant mill feed rate the underground mining rate varies according to the mined grade peaking to 833 000 t/a (open pit and underground combined). The sorting performance is based on test work done by Tomra using approximately 3000 kg test sample.

It should be noted that the diluting material is not barren but contains silver and other payable metals as follows: Ag 17.6, Au 0.05, Zn 2560, Pb 825.

1.3. Comments on mine planning and Ore Reserve estimation

The mine design, mining schedule and Ore Reserve Estimate have been prepared in accordance with the guidelines of the JORC Code (2012).

Mining starts simultaneously from the open pit and from the underground mine. The scheduling strategy has been that the high grade underground stopes (tonnage value > 62 €/t) and the open pit ore is mined and fed to the mill during the first 3 to 4 years. The marginal grade material from the open pit will be stockpiled and sorted for mill feed using XRT sorter during the last year of operation. In order to maintain the mill feed head grade, the mined material from underground mine will be sorted using XRT ore sorters from the year 3 onwards. The XRT sorting requires crushing and screening to particle size between 10mm and 80 mm. The fines (20%) will be fed to the mill and the oversize material will be re-crushed. Base on the test work done the mass pull to the feed is about 45% and ore loss 12%.

The open pit operation is a conventional drill and blast, load and haul mining without technical or scheduling risks.

The main underground mining method is well proven bench and fill mining method. The annual mining rate from underground stopes varies between 230 000 t/a and 730 000 t/a depending on the ore grade and the amount of sorting done. To maintain the high end production rates the lateral development needed is quite challenging. The highest annual meters of 3400 m requires more than one round per shift if a 5 day a week – 2 shifts a day roaster will be used. This is doable but requires good work scheduling and resource planning so that there are enough development headings available all the times.

1.4. Audited Ore Reserve Statement

Ore Reserve is defined here as the aggregate of annual mill feed tonnage and grade.

The mining and mill feed schedule is shown Table 2.

Year	Total Ore Production						
	Ore Mining	Mill Feed	Sorter waste	Ag	Au	Pb	Zn
	Tonnes	Tonnes	Tonnes	g/t	g/t	g/t	g/t
-1							
1	391 662	321 511	-	144.4	0.40	3644	6661
2	451 267	350 191	-	141.6	0.36	3606	6702
3	808 456	450 000	228 863	126.7	0.44	4742	10157
4	833 552	450 000	253 958	125.0	0.45	4868	10499
5	832 781	450 101	255 430	125.1	0.45	4879	10520
6	731 792	421 512	310 280	128.8	0.49	5454	11599
7	-	311 992	245 672	68.5	0.21	2174	4557
8	-	-	-	0.0	0.00	0	0
9	-	-	-	0.0	0.00	0	0
Total	4 049 509	2 755 306	1 294 203	123.9	0.41	4331	9012

Table 2. Sotkamo Silver Oy mining and mill feed schedule.

The following table summarizes the Sotkamo Silver Ore Reserve as of 31.12.2015.

Ore Reserve	Tonnage Mt	Ag g/t	Au g/t	Pb %	Zn %
Proved and Probable	2.76	124	0.41	0.43	0.90

Table 3. Sotkamo Silver audited Ore Reserve Statement as of 31,12,2015

The Ore Reserve contains about 57% of silver contained in the Measured and Indicated Mineral Resource.

Comparison to the previous Ore Reserve estimates (January 2014) shows the decrease of the tonnage by 17% and increase of Ag grade by 22%. This is due to the revised Mineral Resource blockmodel and the application XRT sorting.

2. CONCLUDING REMARKS

The author is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing or political issues which would adversely affect the Ore Reserve estimated above.

The author considers the work done by Sotkamo Silver Oy and its consultants to estimate the Ore Reserve of the Sotkamo Silver Mine to be realistic, professionally carried out and compliant with the 2012 edition of the JORC code.

CERTIFICATE of AUTHOR

I, **Pekka Lovén**, MAusIMM(CP), MSc (Mining), do hereby certify that:

1. I am a Senior Technology Adviser – Mining of Outotec (Finland) Oy, Puolikkotie 8, 02200 Espoo, Finland
2. I graduated with MSc degree in Mining Engineering from Helsinki University of Technology in 1980.
3. I am a Member of the Australian Institution of Mining and Metallurgy with Chartered Professional accreditation
4. I have worked as a mining engineer for a total of 35 years since my graduation from the university.
5. I am a Competent Person in accordance with the JORC Code (2012).
6. I am not aware of any material fact or material change with respect to the subject matter of the report that is not reflected in the report, the omission to disclose which makes the report misleading.
7. I am independent of Sotkamo Silver Oy
8. I have read the guidelines of JORC (2012) with regards to the reporting of Mineral Resources and Ore Reserves,
9. I consent to the use of the report titled “Review of the Sotkamo Silver Mining Plan and Ore Reserves”, dated January 20th, 2015 (the Report) in the public filing of the Report.

Dated this 20th day of January, 2016.



Pekka Lovén