Review plan for D1.4 Synthesis report Colloids and related issues in the long term safety case

Background and objectives

This review plan concerns a report produced as a collaboration between representatives for six of the partners within the EU-project BELBaR, with participation from the department of Technology at SKB.

The report in question is a synthesis report from all the scientific work packages in the project and concerns the fact that the formation and stability of colloids from the EBS may have a direct impact on assessed risk from a geological disposal facility in two aspects;
- generation of colloids may degrade the engineered barrier; and
- colloid transport of radionuclides may reduce the efficiency of the natural barrier.

An increased understanding of the processes involved in the above aspects will have a significant impact on the outcome of future assessments. Therefore, the main aim of the BELBaR project and the here reviewed report was to increase the knowledge of the processes that control clay colloid generation, stability and their ability to transport radionuclides and reduce the uncertainties in the description of the effect of clay colloids in long-term performance assessments.

This review is a factual review (Sw. “sakgranskning”). According to SKB’s procedure (SD-037 Granskning) the review shall be performed with the support of an approved review plan. The overall objective of this review is to ascertain that the contents of the report are correct and that the defined review criteria are fulfilled.

It should be **noted** that the review results, including the identity of the reviewers, will be stored in SKB’s documentation system (SKBdoc). The documentation may, on request, be made available to The Swedish Radiation Safety Authority.

Review documents

Documents for the review:

1. The report *D1.4 Synthesis report: Colloids and related issues in the long term safety case*
2. The review plan (this document).
3. The review form for documentation of the result of the review.

Requirements

It is required that the report is scientifically and technically sound and that the conclusions reached are supported by the analyses or other findings in the report and that these are clearly documented.

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Review criteria

The following general criteria need to be fulfilled in order for the report to meet the requirements:

1. The objective, scope and premises for the report and analyses should be clearly and traceably presented.
2. Methodologies and models are verified and validated or proven.
3. Used methodologies and models are applicable and have been used within its possibilities and limits.
4. It should be possible to evaluate the quality of cited references of importance for the conclusions reached.
5. Factual information shall be supported by relevant references.
6. The conclusions reached shall be supported by the analyses, other findings in the report and/or by supporting documents.
7. The conclusions should be clearly reported and in such way that the fulfilment of the stated objectives can be judged.

The reviewer/s shall have the following competence:

- Good understanding of clay colloid formation and transport
- Experience in the treatment of bentonite erosion and colloid transport in safety assessments

Reviewers

Following reviewer/s have been selected in order to meet the requirements of competence:

Name of reviewer	Competence	Part of report to review	Focus in review
Allan Hedin, SKB	SKBs responsible for safety analysis	*Whole report*	Safety analysis aspects
Martin Birgersson, Clay Technology AB	Ph.D. Theoretical Physics, focusing on physico-chemical aspects of bentonite clay and bentonite model development, main focus chemical aspects	*Whole report*	Physico-chemical aspects of bentonite clay

Documentation

General comments and review comments with recommendations for approval and any reservations and references to comments, as well as answers should be given in the provided review form.

General language review comments can be given as suggestions for new wording directly into the digital version of the document with “track changes”.

Comments should be sent to mary.westermark@skb.se who is also responsible for the handling and documentation of received comments.

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Relation to other reviews

The factual review is followed by a quality review in order to assure that the report and the handling of the factual review have been according to SKB procedure (SD-037 Granskning).

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