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Äspö Hard Rock Laboratory

Update of the hydrogeochemical model 2002

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December 2003

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Preface

The main purpose of the GeoMod project, which initiated in the beginning of 2002, was to update the previous geoscientific model of Äspö (Äspö96), mainly by incorporate additional data collected after 1995. The updated model (Äspö02) was meant to, as far as possible, be integrated in a three dimensional digital model and to be documented in a single technical report.

The geoscientific disciplines: geology, rock mechanics, hydrogeology and hydrogeochemistry, were supposed to be integrated into a common understanding of the site. However it became obvious, during the spring 2003, that the necessary integration efforts far exceeded the expected. As a result of this, the GeoMod project was temporarily terminated in May 2003.

The result obtained within hydrogeochemistry, when the project was terminated, is presented in this report. The other progress reports are:

- IPR-03-34
  Äspö Hard Rock Laboratory
  Update of the geological model 2002

- IPR-03-35
  Äspö Hard Rock Laboratory
  Update of the hydrogeological model 2002

- IPR-03-37
  Äspö Hard Rock Laboratory
  Update of the rock mechanical model 2002

Recommendations of further work are presented in the reports.

The helpful comments, suggestions and reviewing from Johan Andersson, Mel Cascoyne, Richard Everitt, John A Hudson, Bill Lanyon and Anders Winberg are acknowledged. The support and help from: Mansueto Morosini, Tommy Olsson and Roger Taringer are acknowledged.

Rolf Christiansson

Abstract

The observed complex groundwater evolution and patterns at Äspö are a result of many factors such as: a) the closeness to Baltic Sea resulting in relative small hydrogeological driving forces which can preserve old water types from being flushed out, b) the changes in hydrogeology related to glaciation/deglaciation and land uplift, c) repeated Sea/lake water regressions/transgressions and d) organic or inorganic alteration of the groundwater caused by microbial processes or in situ water/rock interactions. The sampled groundwater reflects in various degrees modern or ancient water/rock interactions and mixing processes. The measured inflow to the tunnel is decreasing with time; one possibility is calcite sealing of the fractures especially the fractures in the ceiling of the tunnel. This effect can enhance up-coning of brine type of water. Also other effect such as biofilm production by microbes and other erosion and precipitation effects can affect the flow rate. Other important finding affecting the understanding of hydrochemistry is that microbes can catalyse various reactions which would otherwise not occur in the relative low temperature at Äspö. This means that in order to understand the origin and evolution of the groundwater, the geology as well as past and present hydrogeology together with microbiology has to be investigated.

The modelled present-day groundwater conditions of the Äspö site consist of a mixture in varying degrees of the following water types: Brine, Glacial, Marine and Meteoric waters. These water types are withdrawn towards the tunnel from all directions dependent of the location and the hydraulic properties of the rock. When the tunnel is located under the sea then sea water is drawn towards the tunnel when the tunnel is located under land meteoric water is dominating. The deeper the tunnel is penetrating the rock under Äspö the more influences from old marine and glacial water is found. Up coning effects of brine water is detected at the deepest part of the tunnel. To a depth of 100-200m the dominating mixing portion is meteoric water. Close or under the Baltic Sea marine water of different origins dominates. Some of this water especially in association with the Sea bed sediments can have ongoing sulphate reduction. At depths of 100-500m a brackish-saline water consisting of proportions of glacial melt water occurs. Below this level and down to the 1000m and below saline water contains more proportions of brine water of which the major portion has been stagnant for periods of time extending from 10000 to perhaps millions of years.

Sammanfattning

Den kemiska sammansättningen av grundvattnet kring Äspö är en följd av att många olika processer har varit verksamma, exempelvis:

- Närheten till havet har skapat en förhållandevis liten hydraulisk drivkraft som inte har förmått spola bort äldre vattentyper.
- Förändrade hydrogeologiska förutsättningar relaterad till glaciation/avsmältning och landhöjning.
- Upprepade regressioner/transgressioner av havs- eller sjövatten.
- Organisk och/eller oorganisk påverkan på vattenkemin framkallad av mikrobiella reaktioner eller vittringsprocesser.

Processerna har gett upphov till olika vattentyper; gammalt salt-, glacialt-, marint- och meteoriskt vatten, först har skapats och sedan blandats i olika grad. När tunneln byggdes på Äspö rubbades den naturliga balansen av de olika vattentyperna.

Mätningar av grundvatteninflödet till tunneln visar att inflödet har minskat med tiden. En möjlig förklaring till det minskade inflödet kan vara att kalcitmineraliseringar har fällts ut i sprickorna i tunneltaket. Detta kan möjligen få den följdeffekt att det djupt liggande saltvatten tränger upp till högre liggande nivåer, så kallad ”up coning”, där det under ostörda förhållanden inte annars skulle förekomma. De modelleringar som utförts inom ramen av detta arbete stöder denna hypotes.

Utöver kalcitmineraliseringar kan även effekter såsom biofilmproduktion, med hjälp av mikrober, erosion och utfällning av andra mineralfaser, minska grundvatteninflödet till tunneln. Det har tidigare belysts i olika studier att grundvattnets kemi påverkas av mikrober. Mikroberna kan, vid rätta förhållanden, fungera som katalysatorer för många reaktioner som annars inte skulle äga rum på grund av den relativt låga vattentemperaturen på Äspö.

Undertrycket i tunneln skapar ett radiellt grundvattenflöde, av de olika vattentyperna, in mot tunneln. Förutsättningarna för hur och var flödet sker bestäms av bergets hydrogeologiska egenskaper. Eftersom vattenflödet i bergets spricksystem in mot tunneln varierar i relation till variationer av vattentyper, ger detta förutsättningar att vattentyperna transporteras och blandas i större eller mindre omfattning.

Resultatet av mätningar och modelleringar visar att den del av tunneln som ligger under havet främst drar till sig havsvatten. I den del av tunneln som ligger under land dominerar meteoriskt vatten. I närheten av eller under havet dominerar modernt Östersjö vatten eller gammalt marint vatten av olika ursprung. Denna vattentyp kan speciellt i kontakt med sediment genomgå mikrobiell sulfatreduktion.

Med ökat djup finner man gamla vattentyper såsom gammalt marint vatten och glacialt vatten. I den djupaste delen av tunneln finner man spår av gammalt saltvatten som trängt upp från djupet (så kallad ”up coning”) och vidare upp mot tunneln.

I djupintervallet mellan marknivån och ned till 100 – 200 meter dominerar blandningsproportioner av meteoriskt vatten.

I intervallet mellan 100 – 500 meters djup förekommer ett bräckt eller salt vatten med ett glacialvatten inslag.

Under 500 meter och ned till 1 000 meter ökar successivt andelen gammalt saltvatten. Det gamla saltvattnet har troligtvis varit kemiskt stagnant i hundratusen till miljon tals år.

Contents

1 Introduction

The Swedish Nuclear Fuel and Waste Management Company (SKB) established the Äspö Hard Rock Laboratory in late 1980th in order serve as a test area for SKB's work to design and construct a deep geological repository for spent fuel and to develop and test methods for characterization of selected repository site.

The role of the Äspö Hard Rock Laboratory is to provide input to the performance assessments that have to be supplied as part of each license application and to develop, test, and evaluate methods for site investigations, detailed investigations, repository construction as well as disposal and backfilling of tunnels before they are applied within the deep repository programme. The work with the Äspö HRL has been divided into three phases: the pre-investigation phase, the construction phase, and the operating phase.

During the Pre-investigation phase, 1986–1990, studies were made to provide background material for the decision to locate the laboratory to a suitable site. The natural conditions of the bedrock were described and predictions made of geological, hydrogeological, geochemical etc conditions to be observed during excavation of the laboratory. This phase also included planning for the construction and operating phases.

During the Construction phase, 1990–1995, comprehensive investigations and experiments were performed in parallel with construction of the laboratory. The excavation of the main access tunnel to a depth of 450 m and the construction of the Äspö Research Village were completed. Excavation started on October 1st, 1990 after approval had been obtained from the authorities concerned, and was completed in February 1995.

At the end of the construction stage, the different models used during the site characterization were compiled and evaluated as a first attempt to establish a multidisciplinary site descriptive model, where the results were published in a series of technical reports:

- Stanfors, R, Erlström, M, Markström I. Äspö HRL – Geoscientific evaluation 1997/1. Overview of site characterization 1986 – 1995. SKB TR 97-02.
- Rhen, I (ed), Bäckblom G., Gustafson, G, Stanfors, R, Wikberg, P. Äspö HRL – Geoscientific evaluation 1997/2. Results from pre-investigations and detailed site characterization. Summary Report. SKB TR 97-03.
- Stanfors, R, Olsson, P, Stille, H. Äspö HRL – Geoscientific evaluation 1997/3. Results from pre-investigations and detailed site characterization. Comparison of predictions and observations. Geology and Mechanical stability. SKB TR 97-04.
- Rhen, I, Gustafson, G, Wikberg, P. Äspö HRL – Geoscientific evaluation 1997/2. Results from pre-investigations and detailed site characterization. Comparison of predictions and observations. Hydrogeology, Groundwater chemistry and Transport of solutes. SKB TR 97-04.

- Rhen, I (ed.), Gustafson, G, Stanfors, R, Wikberg, P. Äspö HRL – Geoscientific evaluation 1997/2. Models based on site characterization 1986 – 1995. SKB TR 97-05.

- Almén K-E (ed), Olsson P, Rhen I, Stanfors R, Wikberg P. Äspö Hard Rock Laboratory. Feasibility and usefulness of site investigation methods. Experience from the pre-investigation phase. SKB TR 94-24.

The Operating phase began in 1995. A preliminary outline of the programme for the Operating phase was given in SKB's Research, Development and Demonstration (RD&D) Program 1992. Since then the programme has been revised and the basis for the current programme is described in SKB's RD&D Program 1998.

During the operating stage a number of different experiments and studies have been executed in Äspö HRL, which provides additional information compared to the experience obtained and presented in the previous reports. In order to update the geoscientific models, SKB initiated the project GeoMod to compile the results from the operating period 1995-2002.

1.1 The GeoMod project

1.1.1 Objectives

The GeoMod project was aiming at updating the existing model by integrating new data collected since 1995. The major part of the new data has been produced in the lower part of the Äspö tunnel spiral. The updated model is contained in a 1 km^3 cube with focus on a volume including the tunnel spiral volume from about –200 metres to about –500 metres.

The specific objectives in the GeoMod project were to:

- Describe the geoscientific properties of a prescribed rock volume containing the tunnel spiral.
- Identify relevant processes to explain the geoscientific properties.
- Define the boundary conditions of importance to the rock volume processes.
- Develop methodology to integrate the knowledge from the different geoscientific disciplines.
- Develop a coherent integrated geoscientific model of Äspö.

The project started January 2002. Before the integration of the models finished the GeoMod project was temporarily terminated in May 2003. Finally, SKB decided to reduce the content of the project by omitting the fully integration between the different geoscientific disiplines. It was decided that the work with the completed integration was postponed until 2005.

As a consequence, the different geoscientific models; i.e. geological, hydrogeological, rock mechanics and hydrogeochemical, are published in four separate reports, one for each discipline.

The objectives of this report are to present the result within hydrogeochemistry.

1.1.2 This report and other GeoMod related reports

This report presents the updating of the hydrogeochemical part of the GeoMod project.

Three other reports are produced with in GeoMod:

- IPR-03-34
  Äspö Hard Rock Laboratory
  Update of the geological model 2002
  Johan Berglund, Philip Curtis, Thomas Eliasson, Tommy Ohlsson, Peter Starzec, Eva-Lena Tullborg
  December 2003
- IPR-03-35
  Äspö Hard Rock Laboratory
  Update of the hydrogeological model 2002
  Patrik Vidstrand
  December 2003
- IPR-03-37
  Äspö Hard Rock Laboratory
  Update of the rock mechanical model 2002
  Hossein Hakami
  December 2003

1.1.3 Reviewing

Although, a complete integration between the disciplines have not been accomplished in the current version of the geoscientific modelling, the relation and interaction between the disciplines have been addressed with respect to the scientific content. The Scientific Content Issues are:

- Is the scientific content complete, given the objectives and current level of the work?
- Is the science clearly explained?
- Is the model adequate, given the current state of play?
- Is it clear how updating can be accomplished?
- Is the presented information traceable?
- Are the conclusions justified and adequate?
- Confidence in the model and robustness

The evaluation and it's robustness for the different disciplines have been in focus and the statements put forward in the individual reports are not contradictive unless this is clearly stated.

2 Site location and overview of existing data

2.1 Overview

The Äspö HRL is located on the Äspö Island which is located near to the Simpevarp nuclear site. A great number of investigations have been made both on Äspö and in adjacent areas, such as Laxemar and Ävrö, c.f. Figure 2-1.

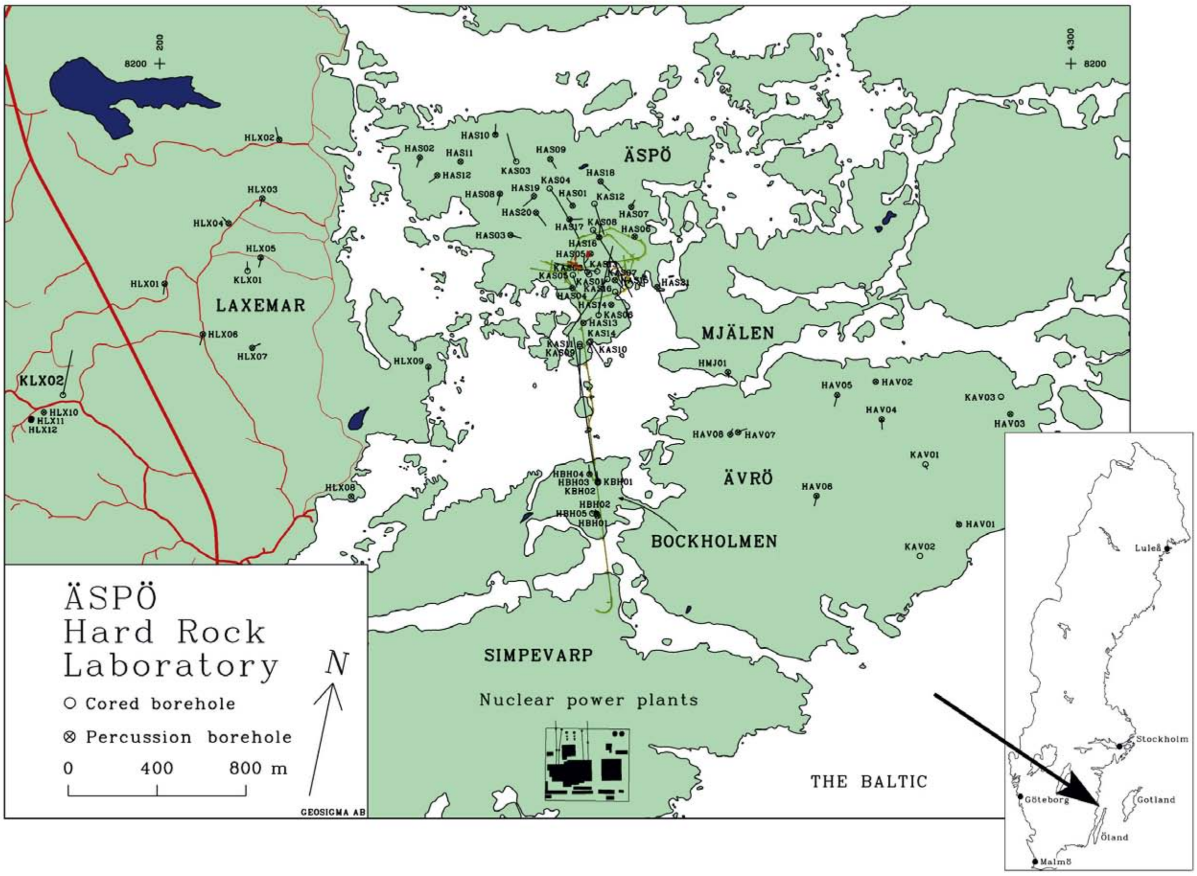

Figure 2-1. Overview of the Äspö Island and the adjacent areas. The selected model domain is shown in Figure 2-2.

The GeoMod-project will update the existing model by integrating new data collected since 1995. Most new data have been collected during the operational phase for different experiments conducted in the tunnel. The majority of the new information originates from the experimental sites in the lower part of the Äspö HRL. The updated model will focus on a volume including the tunnel spiral (c.f. Figure 2-2).

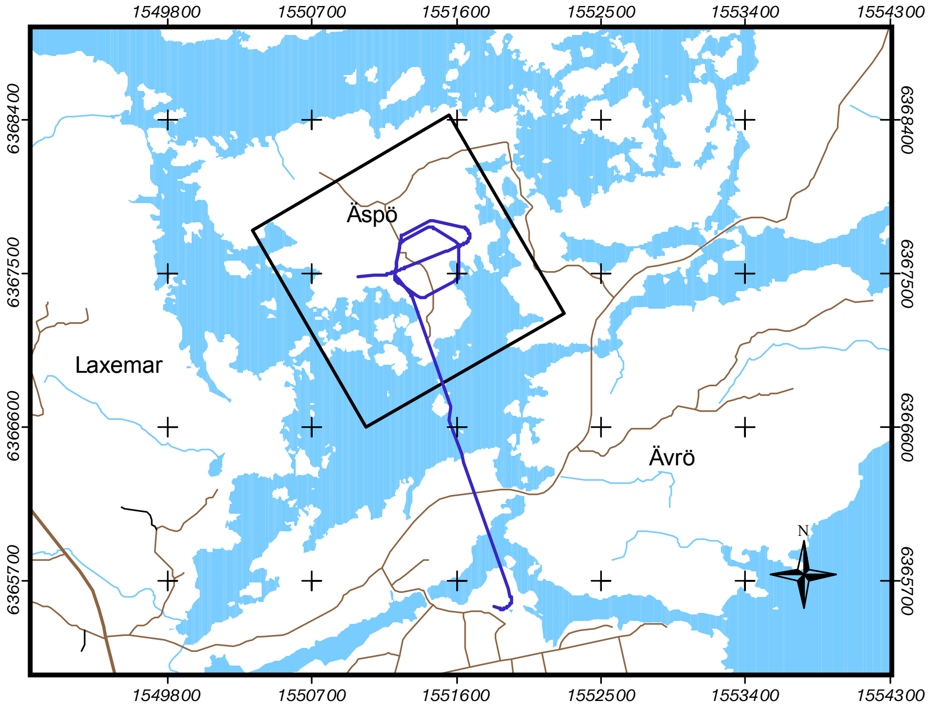

Figure 2-2. Map showing the GeoMod model area along with the horizontal projection of the Äspö tunnel (RT90 coordinate system).

2.2 Co-ordinate system

The corner coordinates of the model volume are defined by the virtual cube with following corner coordinates.

Table 2-1. Model volume coordinates.

Äspö 1km Cube Coordinates			
RT90-RHB70			
	Easting	Northing	Elevation
	[m]	[m]	[mamsl]
Top square			
1	1551200.046	6367099.181	50
2	1550700.046	6367965.206	50
3	1551566.071	6368465.206	50
4	1552066.071	6367599.181	50
Bottom square			
5	1551200.046	6367099.181	-1000
6	1550700.046	6367965.206	-1000
7	1551566.071	6368465.206	-1000
8	1552066.071	6367599.181	-1000

The modelling is contained within a common virtual cube with 1 km side length extending from +50m to -1000 mamsl (meter above mean sea level) in elevation to which appropriate boundary conditions have to be set. This volume is to be tied to its regional context based on the previous model, Äspö96.

2.3 Geoscientific investigations and experiments made

The underground part of the laboratory consists of a tunnel from the Simpevarp peninsula to the southern part of Äspö where the tunnel continues in a spiral down to a depth of 450 m (Figure 2-3). The total length of the tunnel is 3600 m where approximately 400 m at the end have been excavated by a tunnel boring machine (TBM) with a diameter of 5 m. The first part of the tunnel has been excavated by conventional drill and blast technique. The underground tunnel is connected to the ground surface through a hoist shaft and two ventilation shafts. Äspö Research Village is located at the surface on the Äspö Island and it comprises office facilities, storage facilities, and machinery for hoist and ventilation (Figure 2-3).

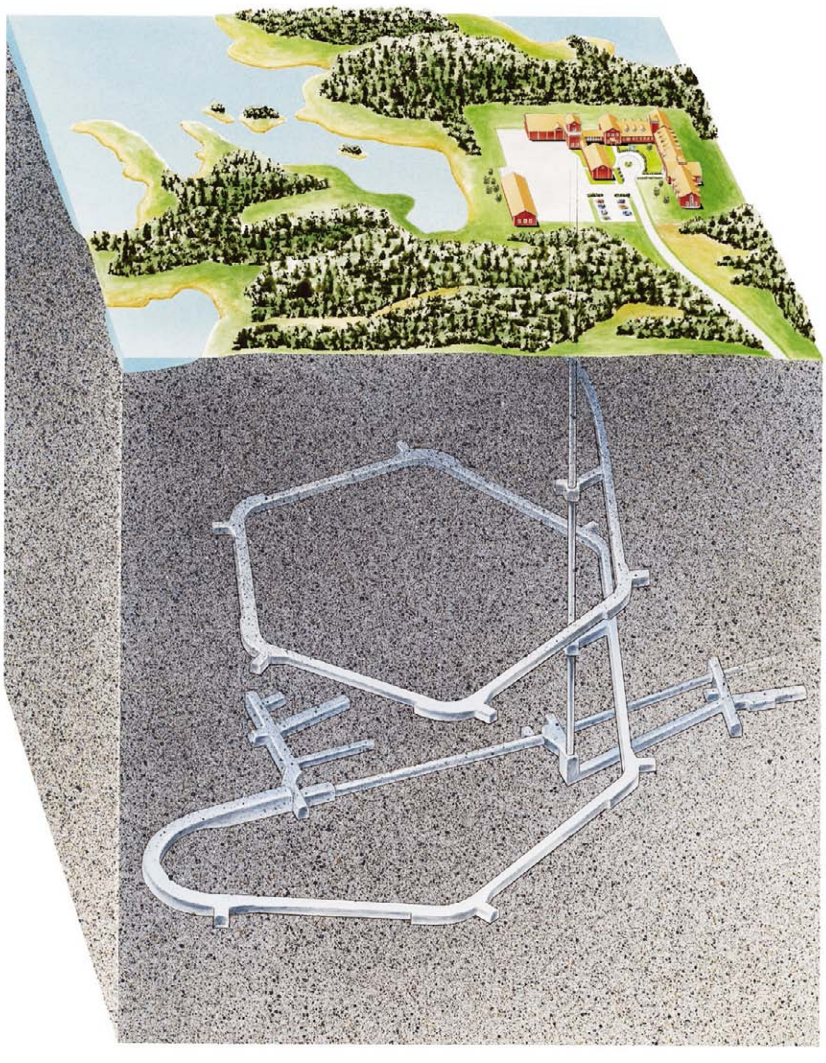

Figure 2-3. *Overview of the Äspö Hard Rock Laboratory Facilities within GeoMod's virtual volume.*

2.3.1 The data used in the modelling

The data used in the modelling was extracted from the SKB database SICADA. The data contains samples collected from: surface, percussion and core drilled boreholes.

2.3.2 Experiments in Äspö HRL

Some of the groundwaters were sampled in association with experiments at the Äspö HRL. Examples of experiments where groundwater data was collected are e.g., REX, TRUE, MICROBE, COLLOID and MATRIX. The experiments are described in detail in SKB TR 99-10; SKB TR 00-10; SKB TR 01-10; SKB TR 02-10 and SKB TR 03-10.

3 Previous hydrogeochemical models over Äspö

3.1 Overview

The results from the modelling of the borehole and surface measurements have been reported in numerous reports and scientific papers, concerning hydrogeochemistry (e.g. Smellie and Laaksoharju, 1992; Banwart et al., 1994; Banwart (ed.), 1995; Nilsson, 1995; Laaksoharju et al., 1995a; Laaksoharju and Skårman, 1995; Smellie et al., 1995; Laaksoharju and Wallin (eds.), 1997; Rhén (ed.), 1997 and Laaksoharju et al., 1999c). The hydrochemical site description has changed gradually due to the fact that more and more information was gathered first from shallow boreholes, deep boreholes and finally from the construction phase of the Äspö HRL. The groundwater changed from a stationary system to a dynamic and made the hydrochemistry more mixed but also perhaps more complex with time. The most dramatic change is anyhow that the thinking concerning the origin has changed. In the beginning the understanding was that precipitating water is infiltrating the overburden reacting with the rock minerals and hence becoming more and more concentrated due to extensive reactions and long contact time with the rock. This endoterm (from the rock) has been replaced with an exoterm (outside the rock) description concerning the origin and residence time of the water. The groundwater composition is now described as being determined by the climate and the prevailing hydrogeological conditions and were the reactions with the rock alters the composition but very seldom erase the original signature. This thinking has helped the identification of the contribution from the brine, glacial, marine and meteoric water types associated with the palaeo and modern events. Most important is that this description can be compared and even integrated with the hydrogeological description of the site. The tunnel construction has resulted in withdraw of meteoric and marine waters and brine type of water but resulted in consumption of old water types such as glacial and Litorina Sea water.

3.2 Models for the operational phase

For the operational stage of the Äspö HRL the model Äspö96 was constructed (Rhén et al, 1997). The model is based on site characterisation and construction phase data from the period 1986-1995. This model included the salinity distribution along the Äspö HRL-tunnel (Figure 3-1) but also a statistical calculation of the different water types found along the tunnel. In addition the Äspö96 model indicated the results from the Äspö90 model which was mainly based on the information from some shallow boreholes and a few deep boreholes. This model just classified the waters into different water types named A-D based on the composition (Figure 3-1). The aim of this work is to update these models based on the data from additional tunnel data and understanding generated from the various experiments and other activities at the Äspö HRL during the period 1995-2001.

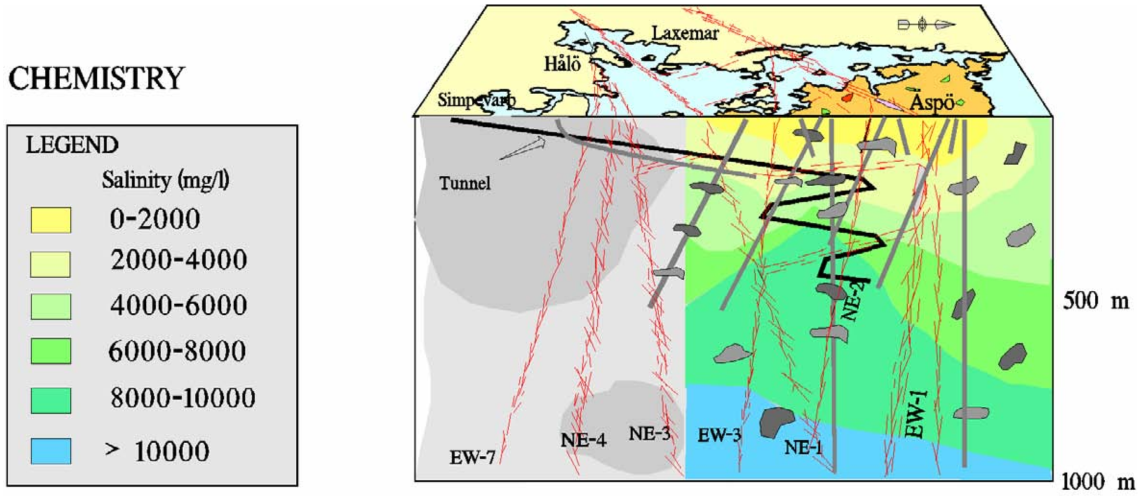

Figure 3-1. *Interpolation of salinity expressed as Cl (mg/l) along the Äspö HRL tunnel (Rhen et al., 1997).*

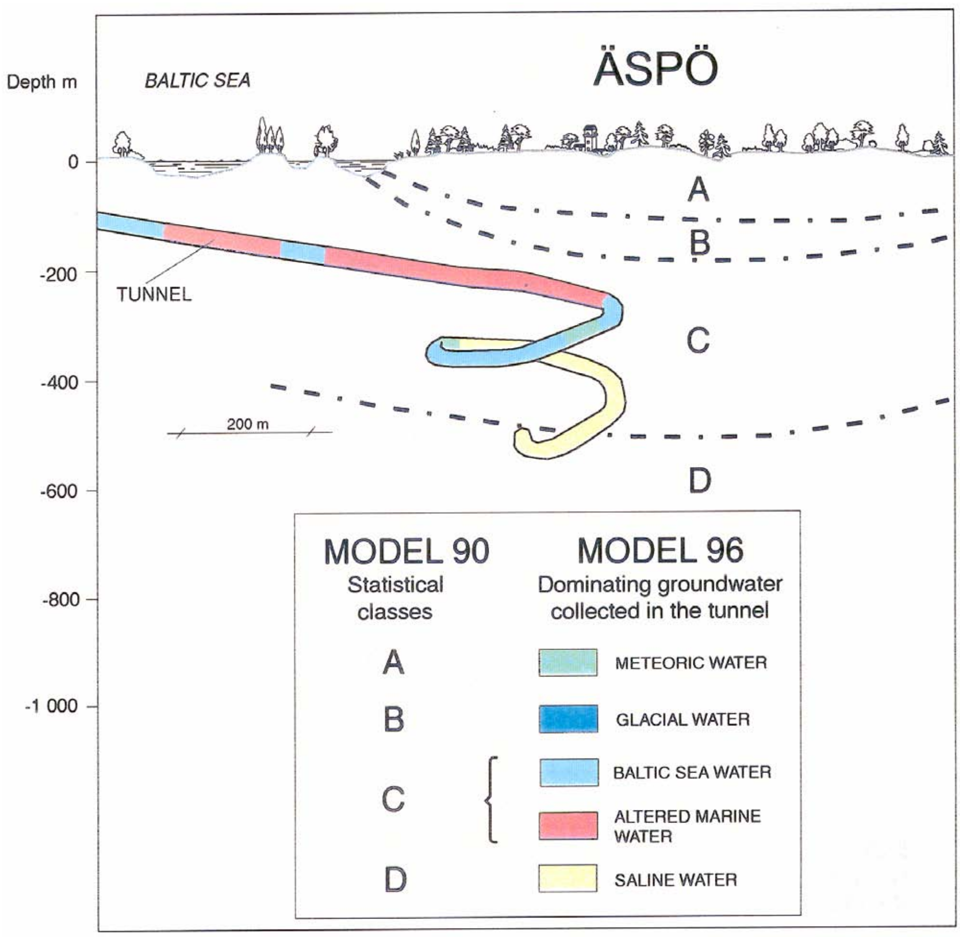

Figure 3-1. *Model 96 is based on combination of statistics and interpretation of water type origin and their mixing proportions. Model 90 classified the waters into four classes A, B, C and D where A corresponds to meteoric water, B to glacial water, C to Baltic sea water and altered marine water and finally, D to saline water (Rhen et al., 1997).*

4 Evaluation of primary data

4.1 Hydrogeochemical data evaluation

This section describes the evaluation of the primary hydrogeochemical data. Most of these data are water sampled in the boreholes and at various surface locations. The evaluation essentially aims at identifying representative data sets for further analysis.

4.2 Introduction and aim

The data used in this exercise is mainly basically tunnel data and understanding generated from the various experiments and other activities at the Äspö HRL during the period 1995-2001. Although the understanding and information gathered during the site characterisation and construction phase data from the period 1986-1995 was also employed. The main purpose of this work is to provide ongoing and coming experiments with an updated geoscientific model for the Äspö site.

SKB (2001) has defined the major task for hydrochemical evaluation to include: (i) characterization of undisturbed groundwater chemistry including the origin, depth/lateral distribution and the turnover time; (ii) focus on data of importance for the safety evaluation such as pH, Eh, chloride, sulphide, colloids and microbes; (iii) identification of possible dissolved oxygen at repository depth.

The data evaluation and modelling becomes a complex and time-consuming process when the information has to be decoded. Manual evaluation, expert judgment and mathematical modelling must normally be combined when evaluating groundwater information. A schematic presentation of how a site evaluation/modelling can be performed and its components are shown in Figure 4-1.

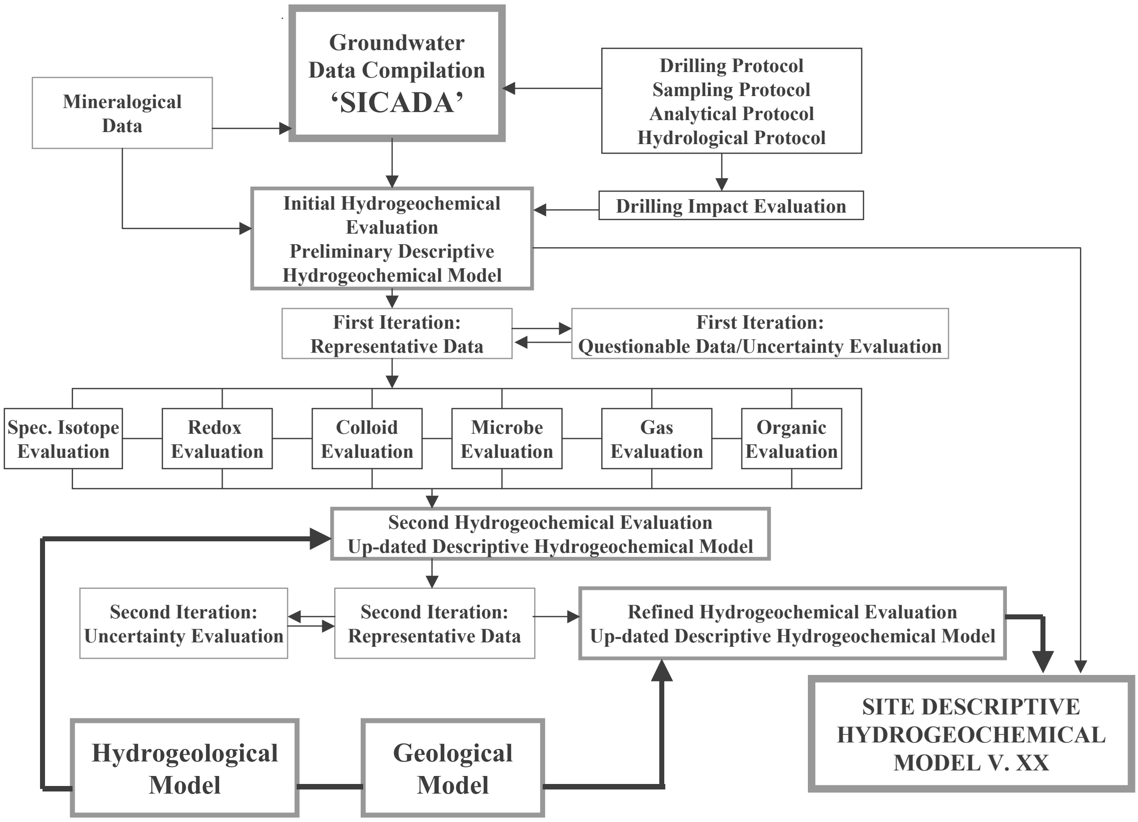

Figure 4-1. *A flow chart reflecting the methodology and the steps included in a site evaluation following the SKB method description (Smellie et al., 2002). The major steps used in this report are red labelled.*

4.3 Data Set

The groundwater chemistry of the HRL tunnel has been earlier described by Gustafson in Rhén (ed) (1991); Wikberg and Gustafsson (1993); Wikberg et al. (1994a); Wikberg et al. (1994b); Nilsson (1995) and by Laaksoharju ed. (1995). Groundwater sampling in the tunnel started in November 1990. The samples included in the data set are the samples collected during the years 1985-2001 from the Äspö site. The sampling and analyses have been performed as part of the general documentation program of the tunnel but also sampling associated with certain experiments (see chapter 2.3.2). Two types of samples were collected in the tunnel - "documentation samples" and "chemistry samples" (Nilsson 1995). The documentation samples were collected from new boreholes having a water flow rate of over 5 litres per minute. Only a few parameters were determined ie, electrical conductivity, pH, chloride and alkalinity. Chemistry samples (repeated follow-up sampling), were collected regularly in a limited number of selected boreholes. The chemistry samples were subjected to a complete analytical program and the results were stored in SICADA, the SKB database. The data used in this report is based on the chemistry samples (Appendix 1). Uranine was added as a tracer to the drilling fluid in order to monitor the effect of drilling. The sampling and quality control of the HRL tunnel groundwater sampling has been evaluated in detail and described by Nilsson (1995).

The sampled tunnel boreholes were of three different types: probing holes (borehole name starting with an S), percussion drilled boreholes (name starting with an H) and core drilled boreholes (name starting with K) (Nilsson, 1995). The main parts of the boreholes, sampled for groundwater analyses, were probing holes (S).

The main focus was on the data within the selected modelling area, the Äspö domain (see Figure 4-1). A total of 1141 samples were selected for detailed modelling from the SKB database SICADA of these 391 samples represent samples from the Äspö domain. The parameters and the observation gathered during the SICADA data collection are listed in Appendix 1. The groundwater data includes the deep boreholes (KAS), percussion-drilled boreholes (HAS), surface samples and samples from the Baltic Sea. The sampling was performed by using different techniques such as double packers for the deep boreholes (Laaksoharju et al., 1995a) and single packers for the percussion drilled boreholes.

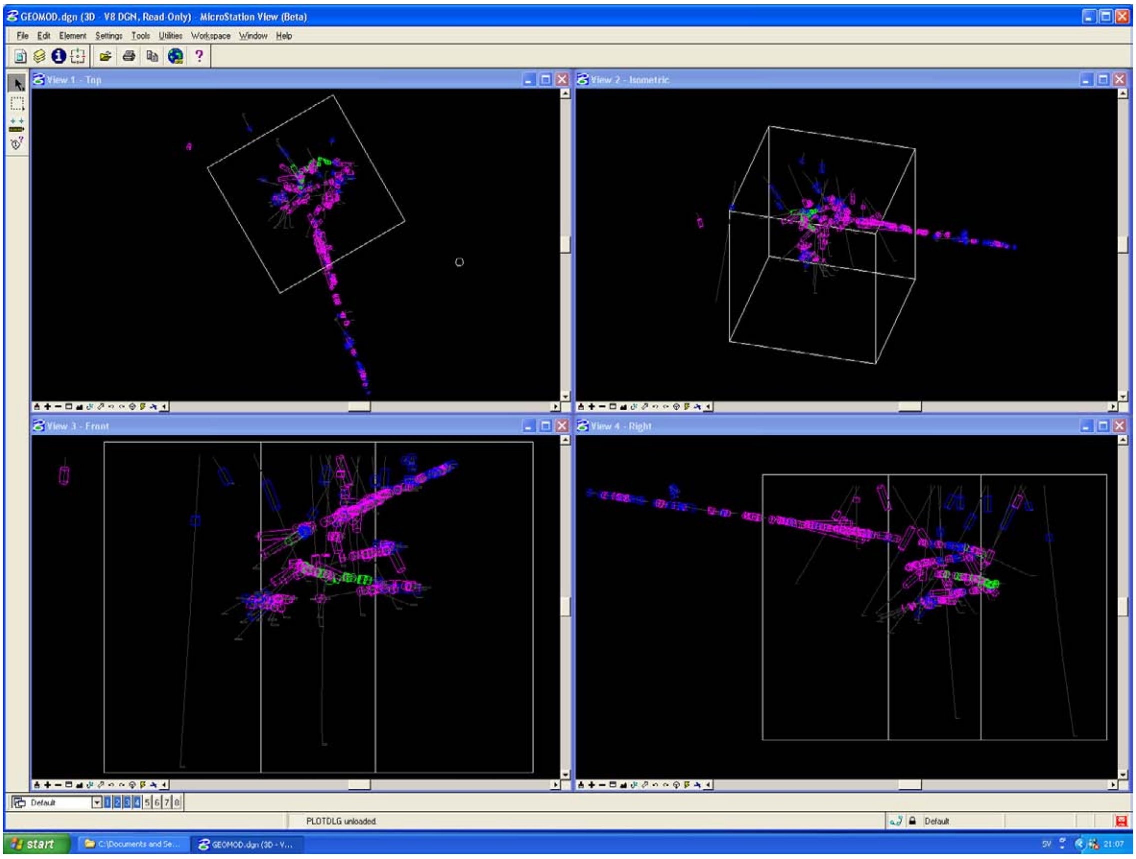

Figure 4-1. *The model domain (white square) and the locations of the boreholes and sampling sections are shown by using the RVS tool. Blue cylinders = 0-4000 mg/l Cl; purple cylinders = 4000-8000 mg/l Cl; green cylinders = >8000 mg/l Cl, (Philip Curtis, pers. comm. 2002).*

The calculated mixing proportions in relation to the major fracture zones are shown in Appendix 4.Figure 4-2 shows the data set (chloride content) used for the Äspö modelling and the changes with time. The samples are plotted on relation to the major fracture zones at the Äspö HRL. The calculated mixing proportions in relation to the major fracture zones are shown in Appendix 4.

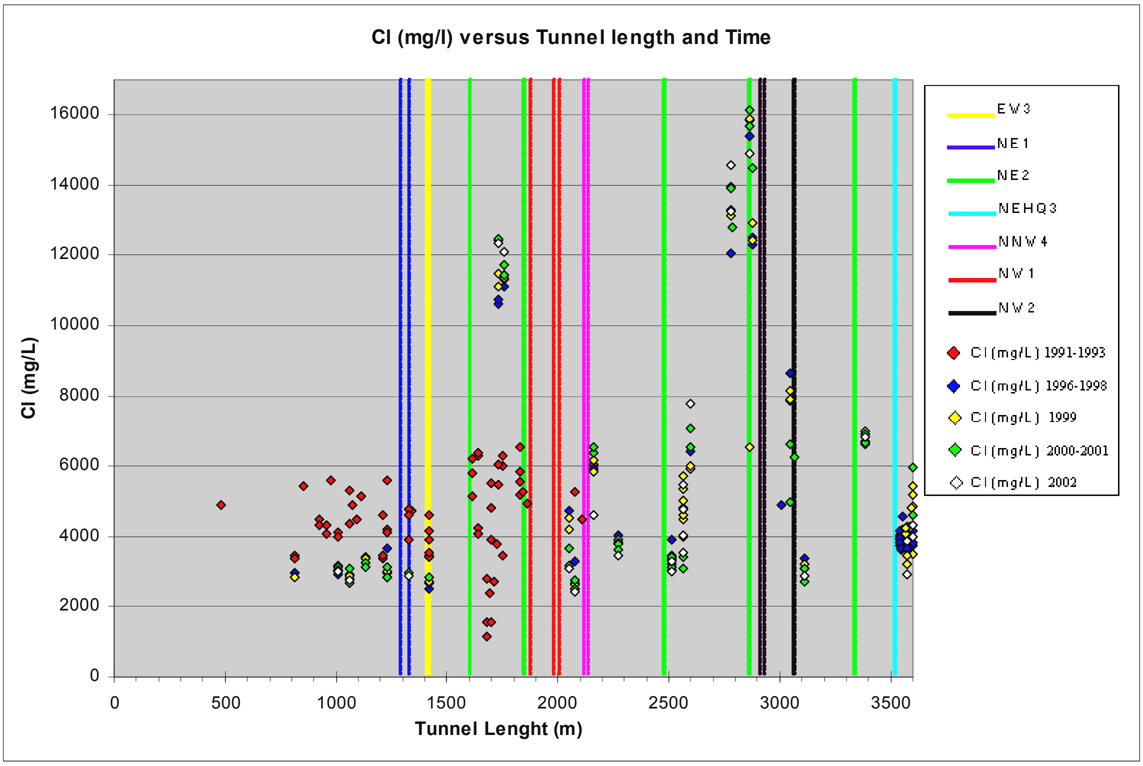

Figure 4-2. *The major fracture zones in the model domain in relation to the chloride content measured in the samples with time.*

4.4 Simulation tools

For the groundwater chemical calculations and simulations the following standard tools were selected:

For evaluation and explorative analyses of the groundwater:

- AquaChem: Aqueous geochemical data analysis, plotting and modelling tool (Waterloo Hydrogeologic).
- Statgraphics: General statistical program (Manugistics Inc.).

Mathematical simulation tools:

- PHREEQC: Chemical speciation and saturation index calculations, reaction path, advective-transport and inverse modelling (Parkhurst et al, 1980).
- M3: Mixing and Massbalance modelling (Laaksoharju et al., 1999b).

Visualisation/animation:

- TECPLOT: 2D/3D interpolation, visualisation and animation tool (Amtec Engineering Inc.).

4.5 Conceptual model of the site

The first step in the manual evaluation is to, based on known paleogeological events, construct a conceptual Hydrogeochemical Evolution Model for the site. This model can be helpful when evaluating data since it gives constraints to the possible groundwater types that may occur. No groundwater data are needed at this stage but discussion with hydrogeologists is necessary. The development of the description below are based on information on the glacial/post-glacial events that might have affected Äspö compiled from Björck (1995) and Laaksoharju et al., (1999c,d).

When the continental ice was formed >100,000BP permafrost formation could take place at a depth of several hundred meters which concentrated the existing groundwater by freezing (Bein and Arad, 1992). The water formed had a higher density and could sink to the depth containing a water with the same salinity and density. (Highly saline waters may also be created from slow dissolution of fracture minerals etc.)

When the continental ice melted and retreated, glacial meltwater was hydraulically injected under considerable head pressure into the bedrock (>13,000BP). The exact penetration depth is still unknown, but a depth exceeding several hundred metres is possible according to hydrogeological modelling (Svensson, 1996).

Different non-saline and brackish lake/sea stages then covered the Äspö site (13,000BP – 4,000BP). Of these only dense brackish sea water such as Yoldia (Yoldia represents a relative short time period and the effects may be difficult to trace) and Litorina Sea water could penetrate by density overturn and affect the groundwater in the more conductive parts of the bedrock. The density of the intruding sea water in relation to the density of the groundwater determined the final penetration depth of the sea water. The Litorina Sea stage (8,000 to 2,000BP) contained the most saline groundwater (twice the salinity of modern Baltic Sea water) and this water was supposed to have the deepest penetration depth. The result was that the glacial and brine groundwaters in the bedrock were affected by intruding brackish marine water.

When Äspö subsequently rose above sea level a freshwater pillow of meteoric recharge water developed. The continuous land rise increased the hydraulic driving force so that the groundwaters in the upper part of the bedrock were flushed out gradually. This flushing started directly after deglaciation and, since this part of the bedrock had already risen above sea level, the postglacial marine water at these locations did not affect the groundwater composition.

Many of the natural events described above are repeated during a repository lifespan of hundred of thousands of years. The effects from the last glacial and de-glaciation event should therefore be easier to detect than from any previous glacial events which probably have been flushed out from the groundwater system. Some important origins of groundwater and events which may have affected the present groundwater at Äspö is shown in Figure 4-2. As a result of the described sequence of events, brine, glacial, marine and meteoric groundwaters are expected to be mixed in a complex manner at various levels in the bedrock, depending on the hydraulic character of the fracture zones, groundwater density variations and borehole activities prior to groundwater sampling. For modelling purposes and based on the conceptual model of the site end-members compositions reflecting e.g. glacial meltwater was added to the data set see Table 5-3.

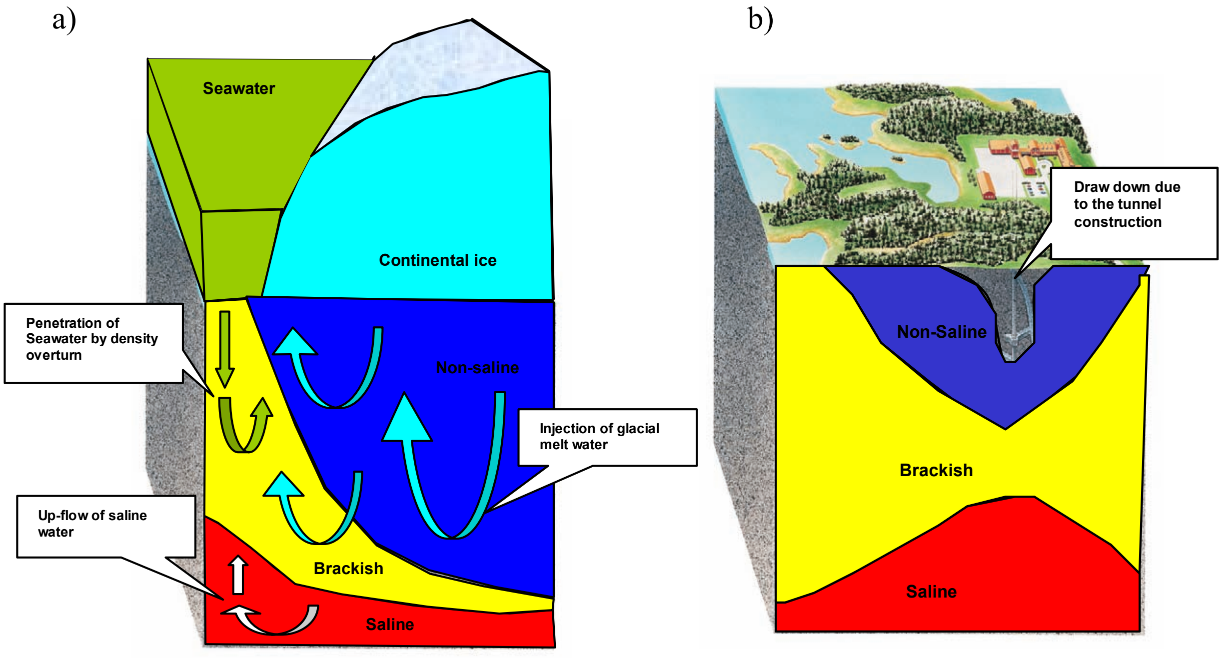

Figure 4-3. *a) A conceptual post-glacial scenario at the Äspö site showing some important events (meltdown of continental ice sheet, density overturn of sea water) that may have affected the water types non-saline (<1000 mg/l, Cl), brackish (1000-5000 mg/l, Cl) and saline (>5000 mg/l, Cl) (after Laaksoharju et al., 1999c,). b) Schematic distribution of the water types non-saline, brackish and saline during tunnel construction.*

4.6 Representativity of the data

By definition, a high quality sample is considered to be that which best reflects the undisturbed hydrological and geochemical in situ conditions for the sampled section. A low quality sample reflects in situ, on-line, at-line, on-site or off-site errors such as contamination from tubes of varying compositions, air contamination, losses or uptake of CO_2, long storage times prior to analysis, analytical errors etc. The quality may also be influenced by the rationale in locating the borehole and selecting the sampling points. Some errors are easily avoided, others are difficult or impossible to avoid. Furthermore, chemical responses to these influences are sometimes, but not always, apparent, (Laaksoharju et al. 1993).

A sampling and analytical protocol is established prior to a sampling campaign. This protocol is based on established sampling routines or special requirements associated with the sampling campaign. As an example, two types of samples were collected in the HRL tunnel - documentation samples and chemistry samples (Nilsson 1995). The documentation samples were collected from new boreholes with a water flow rate of over 5 litres per minute. Only a few parameters were determined i.e. electrical conductivity, pH, chloride and alkalinity. The chemistry samples were repeated follow-up sampling of selected boreholes. The chemistry samples were subjected to a complete analytical programme covering all the major components, some minor components and special analysis i.e. isotopes and in some cases trace elements. Ferrous and ferric iron and minor anions were determined in the SKB-MFL (SKB Mobile Field Laboratory) or at the Äspö HRL Chemical Laboratory. The redox sensitive components were determined as soon as possible without atmospheric contamination. Water for iron determination in the field and for ICP-AES analysis was collected in acidified and acid-washed bottles. Extra precautions were taken to avoid contamination of the acidified samples collected for trace element analysis by ICP-MS. Sample bottles for sulphide determination were preserved using sodium hydroxide and zinc acetate.

To ensure data quality, control analysis by independent laboratories was carried out on one sample at each sampled section. This sample was taken at the end of the pumping period using the SKB-MFL. Generally the concentration of each controlled component agreed to within 10% between the various laboratories, although this was to a large extent dependent on the element in question and its concentration. If a large disparity was noted, the analysis was repeated. When the analytical sets from different laboratories were considered to be in good agreement, the data were compiled and further evaluated to produce the final data set for each sample.

The analytical accuracy for the major components: sodium, potassium, calcium, magnesium, bicarbonate, chloride and sulphate were checked by ion-balance calculation, where the difference between the anions and cations was calculated. The difference was given in percentages and generally within the SKB programme the range was within 1-5%. A very saline groundwater can cause analytical problems for some methods and some of the components. Analytical problems because of high salinity or analytical limitations have been recorded concerning potassium, silica, sulphate, bromide, phosphate, nitrite, ammonium (Laaksoharju et al., 1995a).

For trace elements the analytical uncertainties were larger although elements such as iron, manganese, silica, lithium, strontium and fluoride had almost the same accuracy as the major components. For bromide and iodide the uncertainty was in the range of 20%. For sulphide the accuracy was high but the concentrations were generally under the detection limit. The analytical inaccuracy for nitrate, nitrite, ammonium, and phosphate has been estimated at 50-100%. For trace elements the sampling contamination masked the true element concentrations.

The isotopical analysis has its unique uncertainties; tritium, deuterium and oxygen-18 were reported to be 0.5Bq/l, 1% and 0.2% respectively. The uncertainty for the other isotopes varied from one measurement to another but they were generally around a factor of one higher or lower than the given value. The precision for the pH and Eh measurements with the SKB field laboratory was generally in the order of 0.1 pH and 25mV for the Eh measurements (Wikberg, 1987).

The quantification of uncertainties caused by drilling, sampling activities, analytical and modelling uncertainties are in some cases straightforward (analytical uncertainties). In other cases one has to rely on estimates and expert judgements (e.g. the total effect from drilling activities).

Naturally there are no samples from undisturbed conditions prior to drilling and therefore much of the judgements lean on expert knowledge. The judgement of representativity for the Äspö HRL tunnel was in this case a straightforward task. In the HRL tunnel the conditions for performing high quality sampling are very good. The water flows naturally towards the tunnel and can maintain the natural hydraulic pressure. Contamination by drilling water is negligible as the uranine content is consistently lower than 1%. When the samples are taken gas uptake/losses due to atmospheric pressure can occur. Transport of the samples from the sampling point in the HRL tunnel to the field laboratory at the surface as well as the storage time may affect some of the constituents (ie, the carbon system and the redox sensitive elements).

The samples from the HRL tunnel are thought to be of good quality for modelling work although some doubts have been raised concerning certain measurements and analyses (ie, pH and DOC).

From the representative data set in the Äspö modelling domain two example depths were selected a relatively shallow sample from KAS03:98m and a relatively deep sample from KA2862A:381m. These samples are used when various groundwater properties are described in this report. The uncertainty in the groundwater data was addressed in the modelling by using the average variability in all samples. The changes in e.g. salinity (25%) during sampling can be such an indicator. In addition the known analytical uncertainties generally ±5% was used in the modelling together with model uncertainties (10%). The Ion Charge Balance (ICB) was not satisfying (>5%) in some surface and shallow samples that may indicate analytical problems for some of these samples.

The changes caused due to uplifting of water is generally handled in a specific detailed modelling where the downhole/versus surface measurements are examined. The variability of, in this example 1 unit (average), can be used in specific uncertainty modelling in e.g. mass-balance calculations where the effects on the calculations are measured. Generally the downhole measurements are regarded to be more representative and are used when available.

The fundamental question in the modelling is generally if the uncertainties lead to a risk of misunderstanding the information in the data. Generally the uncertainties from the analytical measurements are lower than the uncertainties caused by the modelling but the variability during sampling is generally higher than the model uncertainties.

4.7 Explorative analysis

A commonly used approach in groundwater modelling is to start the evaluation by explorative analysis of different groundwater variables and properties. The next phase often includes a groundwater classification based on the salinity or major constituents of the groundwater. The effects from the major water rock interactions are modelled using some of the standard mass-balance codes.

This section describes classical geochemical evaluation and modelling applied on site data by using the computer code AquaChem. The starting point is scatter plots where the data set is examined see Figure 4-2, Figure 4-3 and Figure 4-4 followed by classification in Figure 4-5. Plots such as Cl/depth shows that the freshwater saline interface is located at a very shallow depth about 70m and that high salinity occur at 240m and about 360m depths. The HCO_3/depth plot indicates that the surface component indicated by high bicarbonate values is traceable but also water at 480 m depth can contain high values of HCO_3. The Mg/depth plot shows that seawater is generally affecting the shallow samples. The Oxygen-18/depth plot shows a mixed signature which is not depth dependent. When examining e.g. the Na/Cl plot there is an indication that some Na can be contributed from old sea water such as Litorina water.

The HCO_3/Cl plot indicates that an important input of HCO_3 is from the shallow water associated with precipitation type of water. SO_4/Cl and Mg/Cl indicates a possible source from the Sea water. And Oxygen-18/Cl indicates that there are several sources for the water since most of the samples plot between precipitation, marine (Baltic Sea, Litorina Sea) and brine end-members indicating a possible mixing pattern.

Also the Piper plot in Figure 4-5 clearly demonstrates the large spread of groundwater composition. One represents non-saline, bicarbonate – sodium to bicarbonate – sulphate type of water. Brackish groundwaters are characterised by a sodium-chloride-potassium to a calcium-sulphate type of water. The deep water is characterised mainly as a calcium-sodium-chloride type of water. An evolutional trend from non-saline water through brackish water to the saline water can be observed in the Piper plot.

The disadvantage of Piper plots and other standard classification system in areas such as Äspö is the higher resolution for the non-saline waters than for the intermediate and saline groundwaters, with the latter usually forming tight clusters. For example, important changes in some variables such as SO_4 may be masked by larger changes in other variables such as Cl. The often crucial isotopic information is not included in the Piper plot. Detailed water type classification of the Äspö samples are listed in Appendix 2.

The explorative analyses is used for identifying reaction and flow patterns in the data and to summarise and simplify the information. The information is included in the geochemical description of the site, see Section 6 and for other examples see e.g. Smellie and Laaksoharju 1992, Laaksoharju et al, 1995a and Laaksoharju et al., 1999a.

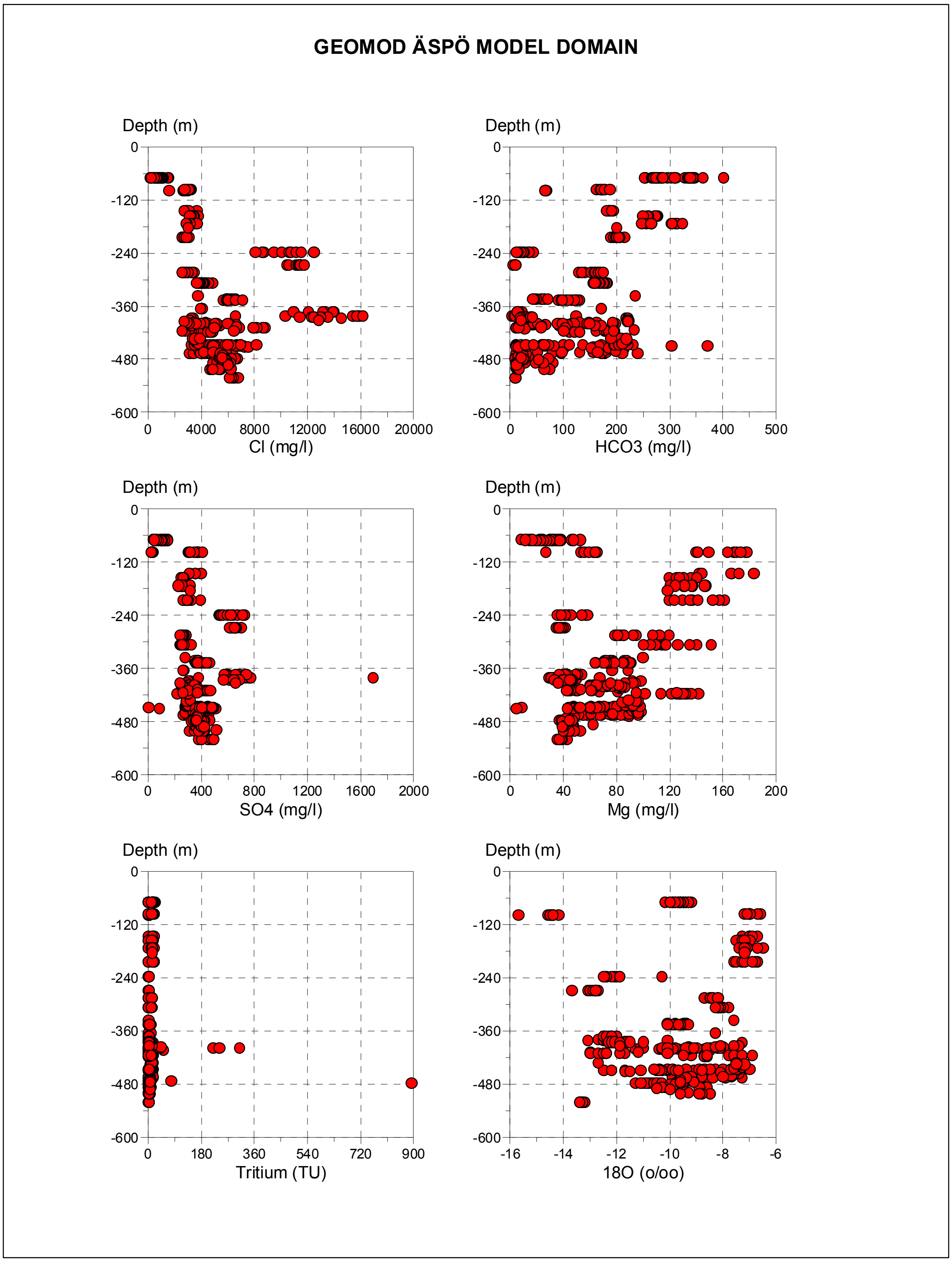

Figure 4-2. *The Cl, HCO_3, SO4, Mg, Tritium and Oxygen-18 are plotted versus depth.*

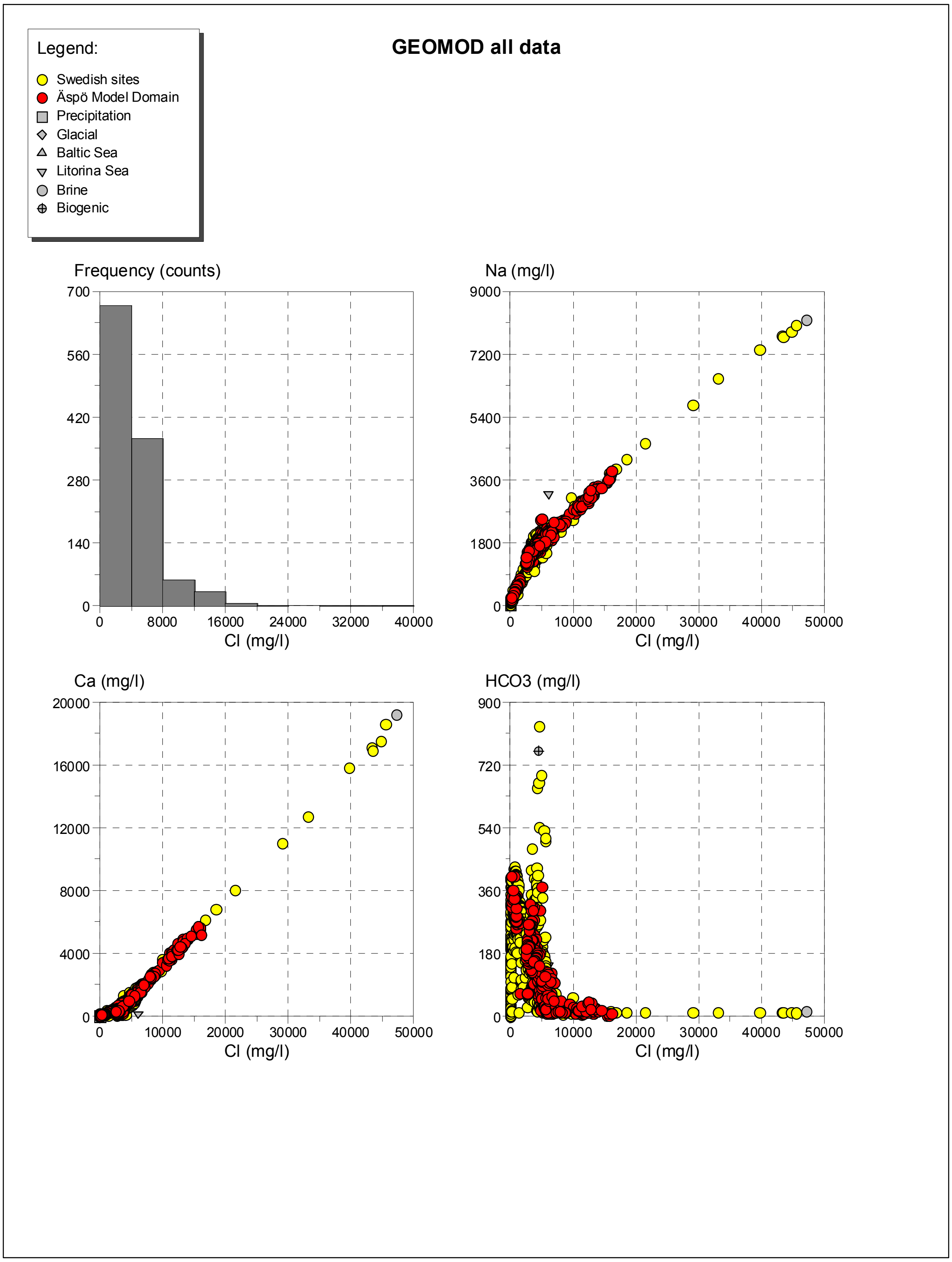

Figure 4-3. *The frequency of the Cl measurements, Na, Ca and* HCO_3 *versus Cl are plotted. The red dots show the data from the modelled Äspö domain and the yellow dots show the data from all Swedish sites. The end-member composition is shown as grey dots.*

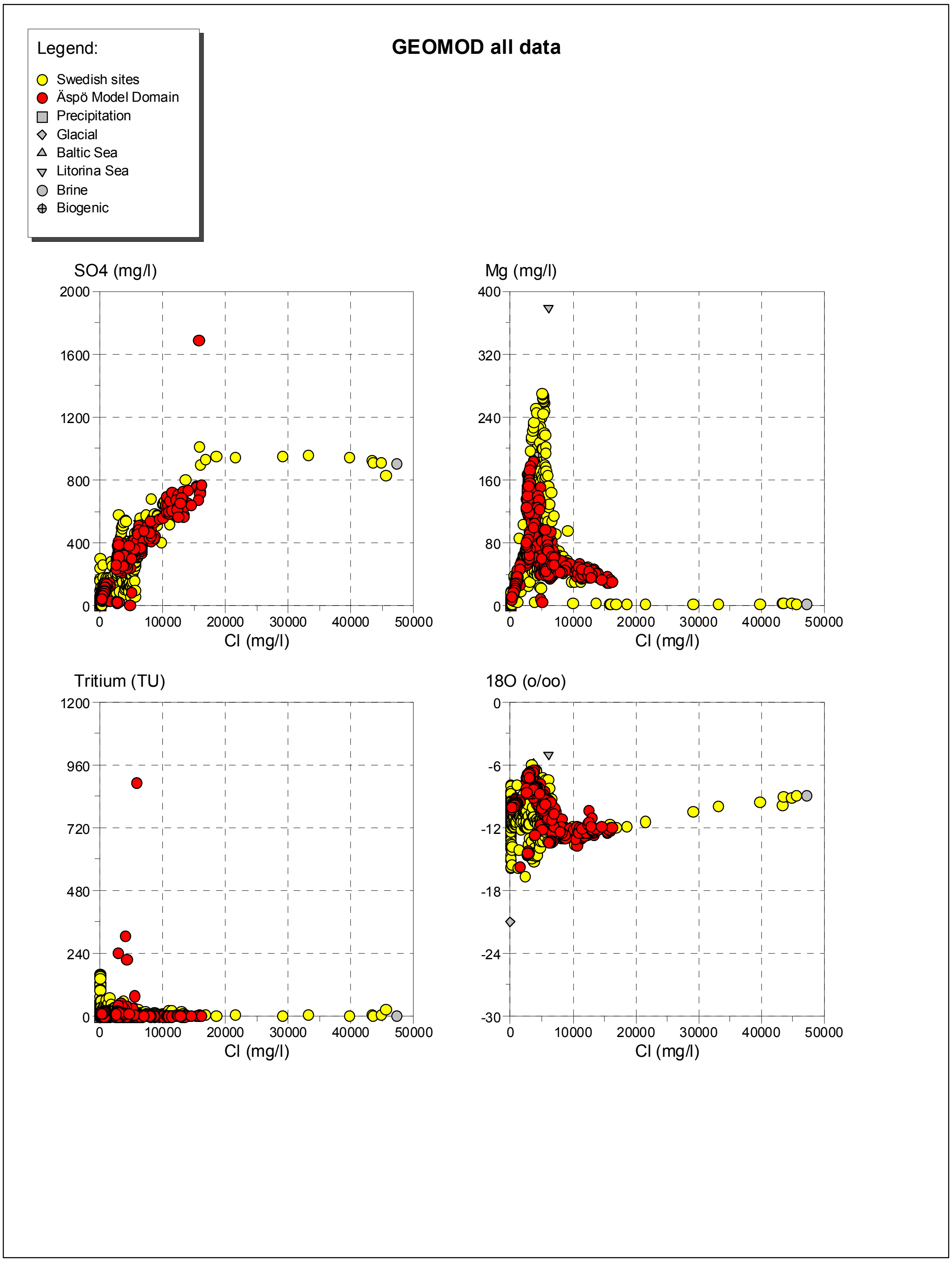

***Figure 4-4.** The SO4, Mg, tritium and Oxygen-18 are plotted versus Cl. The red dots show the data from the modelled Äspö domain and the yellow dots show the data from all Swedish sites. The end-member composition is shown as grey dots.*

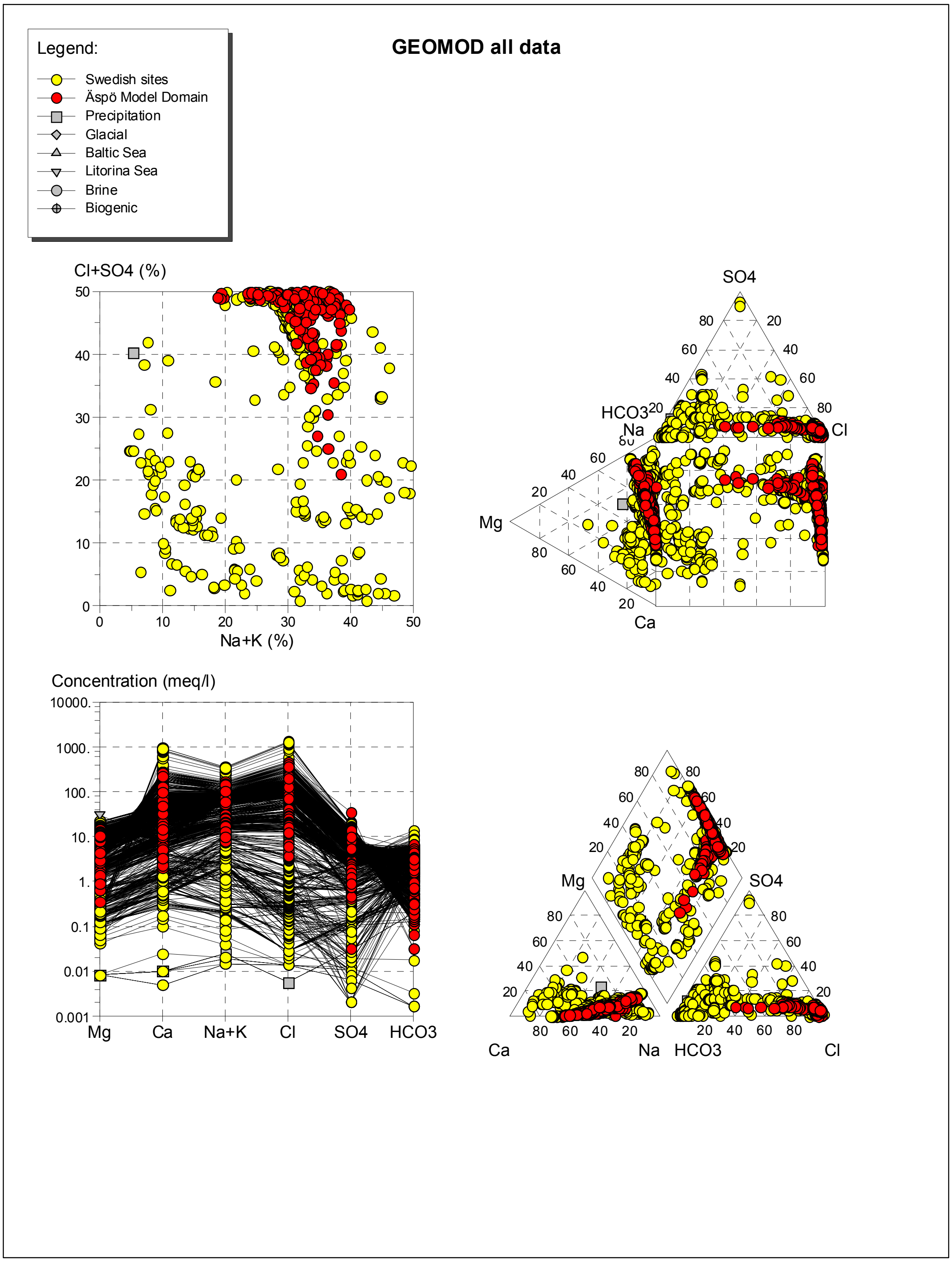

Figure 4-5. *Multicomponent plots used for classification of the data. From top left to top right to bottom left and bottom right: Ludwig-Langelier plot, Durov plot, Shoeller plot and Piper plot applied on all Äspö data using AquaChem. The red dots show the data from the modelled Äspö domain and the yellow dots show the data from all Swedish sites. The end-member composition is shown as grey dots.*

5 Tree-dimensional site descriptive modelling

5.1 Hydrogeochemical modelling

Hydrogeochemical modelling involves several sciences such as geology and hydrogeology. This information is used as background information, supportive information or as independent information when models are constructed or compared. The following chapters describe how geological information is used in the modelling and how speciation, mass-balance, coupled modelling and mixing modelling were applied. The results from the modelling are generally presented by using 2D/3D visualization tools. Examples of this are given in the final subsection of this section.

5.2 Geological information used in the hydrogechemical modelling

5.2.1 Borehole specific information

Geological information is used in hydrogeochemical modelling as a direct input in to mass-balance modelling but also to judge the feasibility of the results from e.g. saturation index modelling (see Table 5-1 and Table 5-2). For this particular modelling exercise geological data was summarized and the information was reviewed and the relevant rock types, fracture minerals and mineral alteration were identified.

5.2.2 Geological model used for visualisation

The base geological structural model developed for this project provides important information of fractures conducting groundwater. This is used for the understanding and modelling of the hydrodynamics. The cutting plane used for visualisation of groundwater properties was selected with respect to the geological model see Figure 5-1. Fracture specific orientation in relation to sampled Cl content is shown in Appendix 3. The cutting plane for the visualisation of the interpolated results was located along the Äspö HRL (see chapter 5.5) tunnel since most of the groundwater samples are located in association or in the near vicinity of this. Also the high fracture frequency along the Äspö allows the use of 3D/2D interpolation techniques since most of these fracture systems are interconnected.

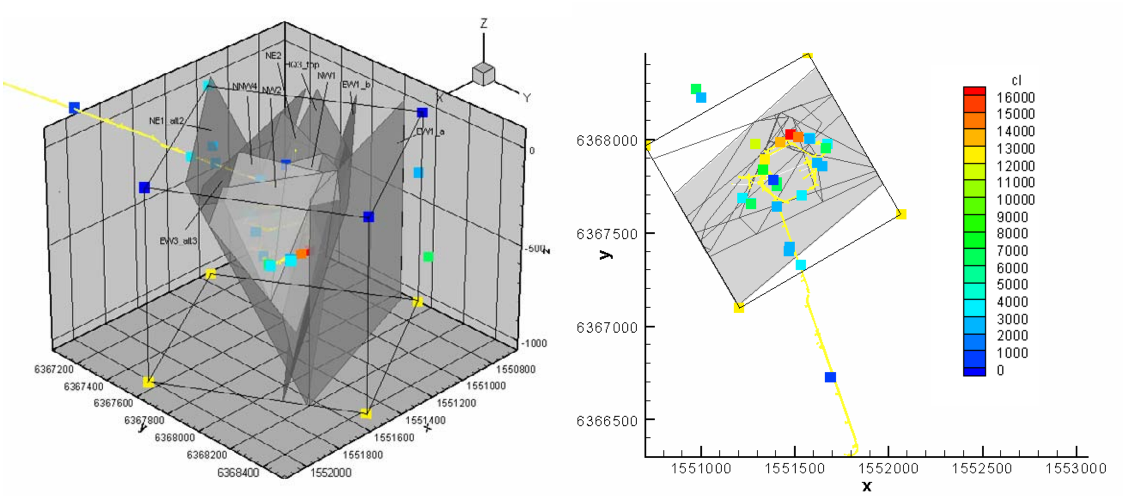

Figure 5-1: *The Cl (mg/l) content in the sampling points in respect to the base geological model shown with a side view and from above. The boundary for the modelled domain is shown as a black box in the pictures. The individual fractures are presented in Appendix 3.*

5.3 Speciation and mass-balance modelling

5.3.1 Speciation modelling

Speciation modelling with PHREEQC has been carried out. The main purpose of such *speciation modelling* is to calculate, based on thermodynamic properties, the mineral saturation indices. The indices are indicators of the saturation state of a mineral with respect to a given water composition. A positive value indicates that thermodynamically a mineral can precipitate, a negative value that it can dissolve. A value close to zero indicates that the mineral is not reacting. The saturation index indicates the potential for the process, not the rate, at which the process will proceed. From these information conclusions concerning possible major reactions taking place and indirect indications of the dynamics of the system can be drawn.

An advantage with the speciation modelling is that it is relatively easy to modify the model to include new species and elements and there is extensive literature on test cases and on complexation reactions and estimates of the stability constants. The following types of major reactions can generally be modelled:

1. Introduction of CO_2 gas in the unsaturated zone
2. Dissolution of calcite and dolomite, and precipitation of calcite
3. Cation exchange
4. Oxidation of iron containing minerals, pyrite and organic matter
5. Reduction of oxygen, nitrate, and sulphate, with production of sulphide
6. Reductive production of methane
7. Dissolution of gypsum, anhydrite and halite
8. Incongruent dissolution of primary silicates with formation of clays

The uncertainties and difficulties are discussed by Parkhurst and Plummer in Alley, (ed.), 1993.

The results of saturation index modelling performed on the example samples (KAS03:98m and KA2862A:381m) is shown below (see Table-5-1 and Table 5-2). The results indicate that the waters from KAS03:98m and KA2862A:381m is in equilibrium (SI ±0.5) with e.g. Aragonite, Calcite Chalcedony and Quartz. This may indicate that the water is in equilibrium with many of the rock minerals. The validity of the calculations has always to be checked by means of geological information, where the mineralogical data has to support the existence of the various mineral phases. In this particular case the geological information indicated that Chlorite (not calculated due lack of aluminium data) and Calcite are important fracture minerals in these boreholes. Additional site modelling indicated that the shallow water (<100m) is generally under saturated with respect to Calcite but deeper water (>100m) is saturated or supersaturated, which can indicate dissolution of this mineral at shallow depths and precipitation at larger depths.

Table 5-1: Saturation index calculations for the example sample KAS03 (shallow). SI = saturation index, IAP = ionic activity product and KT = equilibrium constant.

Phase	SI	log IAP	log KT
Anhydrite	-2.22	-6.56	-4.34
Aragonite	-0.02	-8.3	-8.28
Calcite	0.13	-8.3	-8.43
Celestite	-1.96	-8.58	-6.62
Chalcedony	-0.54	-4.22	-3.67
Chrysotile	-4.98	28.5	33.48
CO2(g)	-3.11	-21.3	-18.19
Dolomite	-0.44	-17.29	-16.85
Fe(OH)3(a)	2.31	20.47	18.16
FeS(ppt)	-66.19	-105.29	-39.09
Goethite	8.2	20.47	12.27
Gypsum	-1.98	-6.56	-4.58
H2(g)	-23.63	-23.6	0.03
H2S(g)	-70.77	-113.96	-43.19
Hausmannite	-11.27	52.32	63.59
Hematite	17.63	40.94	23.31
Jarosite-K	-5.47	25.91	31.38
Mackinawite	-65.46	-105.29	-39.83
Manganite	-3.97	21.37	25.34
Melanterite	-8.55	-10.89	-2.34
O2(g)	-39.4	47.2	86.6
Pyrite	-106.52	-195.64	-89.13
Pyrochroite	-5.63	9.57	15.2
Pyrolusite	-9.86	33.17	43.04
Quartz	-0.08	-4.22	-4.13
Rhodochrosite	-0.63	-11.73	-11.09
Sepiolite	-4.06	11.97	16.03
Sepiolite(d)	-6.69	11.97	18.66
Siderite	-1.8	-12.63	-10.83
SiO2(a)	-1.42	-4.22	-2.8
Strontianite	-1.05	-10.32	-9.27
Sulfur	-53.17	-90.36	-37.18
Talc	-2.51	20.07	22.58

Table 5-2: KA2862A deep water saturation index (SI) calculations. Saturation index calculations for the example sample KAS03 (shallow). SI = saturation index, IAP = ionic activity product and KT = equilibrium constant.

Phase	SI	log IAP	log KT
Anhydrite	-0.28	-4.64	-4.36
Aragonite	0.04	-8.29	-8.34
Calcite	0.19	-8.29	-8.48
Celestite	-0.1	-6.73	-6.63
Chalcedony	-0.58	-4.13	-3.55
Chrysotile	-4.03	28.17	32.2
CO2(g)	-4.25	-22.4	-18.15
Dolomite	-1.45	-18.54	-17.09
Fe(OH)3(a)	1.82	19.73	17.91
FeS(ppt)	-67.62	-105.19	-37.56
Fluorite	0.89	-9.71	-10.6
Goethite	7.72	19.74	12.02
Gypsum	-0.07	-4.65	-4.58
H2(g)	-23.6	-23.6	0
H2S(g)	-71.5	-113.14	-41.64
Hausmannite	-8.9	52.13	61.03
Hematite	17.45	39.48	22.03
Jarosite-K	-3.94	25.91	29.85
Mackinawite	-66.89	-105.19	-38.3
Manganite	-4.03	21.31	25.34
Melanterite	-8.64	-10.85	-2.21
O2(g)	-35.93	47.19	83.12
Pyrite	-108.94	-194.72	-85.78
Pyrochroite	-5.69	9.51	15.2
Pyrolusite	-8.27	33.11	41.38
Quartz	-0.15	-4.13	-3.98
Rhodochrosite	-1.76	-12.89	-11.13
Sepiolite	-3.89	11.87	15.76
Sepiolite(d)	-6.79	11.87	18.66
Siderite	-3.57	-14.46	-10.89
SiO2(a)	-1.42	-4.13	-2.71
Strontianite	-1.11	-10.38	-9.27
Sulfur	-53.77	-89.54	-35.76
Talc	-1.5	19.9	21.4

5.3.2 Mass balance modelling

The aim of *mass-balance modelling* is to determine the type and amount of geochemical reactions that are occurring in a groundwater system. This is done by identifying the minerals that are reacting and determining the amounts of the minerals that dissolve or precipitate. The modelling of an important group of minerals such as aluminium silicates (e.g. feldspars and clay minerals) are hindered or made uncertain at Äspö due to difficulties associated with aluminium determinations. Reactions such Calcite dissolution was modelled for the Äspö tunnels system. The aim was to investigate if the decrease in the annual flow of 5% into the Äspö HRL tunnel could be described by calcite precipitation in the fractures. The example groundwater samples KAS03:98m and KA2862A:381m where used for the simulation where the shallow water (KAS03) was flowing towards the tunnel and degassing of CO_2 occurred in contact with the atmosphere. The deep water (KA2862A) was simulated to flow towards the tunnel and here in-gassing of CO_2 occurred. And finally the shallow and deep water was mixing in a ratio 1:1 in a fracture system (see Figure 5-2 and Figure 5-3). The results show that when shallow water is flowing towards the tunnel there is a potential to seal of fractures located in the upper part of the tunnel and in the fractures where shallow and deep water is mixed. No sealing effect was modelled when deep water was flowing towards the tunnel. This observation could explain the observed decrease of water flowing towards the tunnel and possibly explain an increase of the up-coning effect of saltwater with time (see Figure 5-10). It is important to note that also other sealing effects are known such as clogging due to erosion, built up of microbial colonies and effects from other precipitating mineral phases.

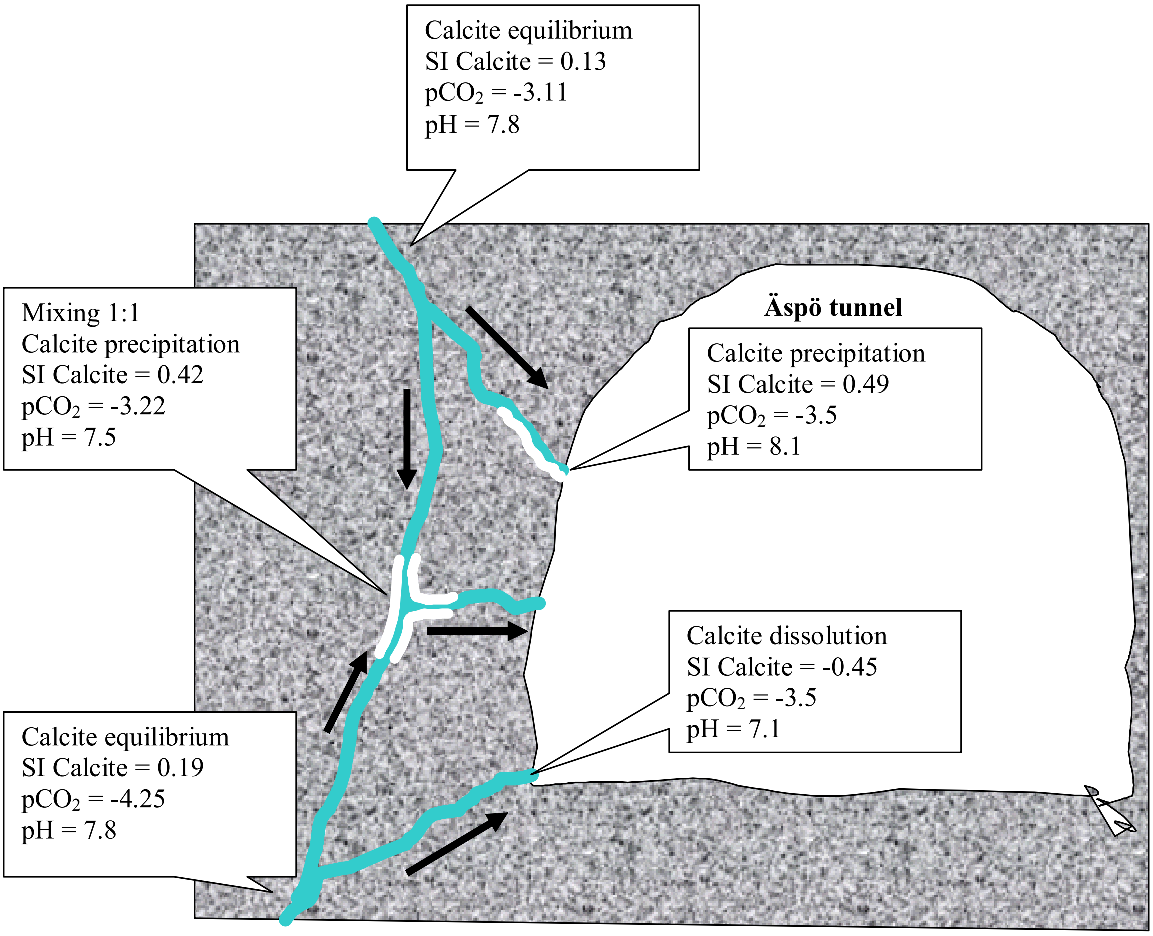

Figure 5-2. *Water is modelled with PHREEQC and simulation the following conditions. The water at 97.4 m depth (KAS03) is in equilibrium with the mineral Calcite. When flowing towards the tunnel the* pCO_2 *is changing to atmospheric pressure and pH is increasing and causing Calcite precipitation, which can reduce the flow towards the tunnel. The water at -381m depth (KA2862A) is in equilibrium with the rock but when the water is flowing towards the tunnel the* pCO_2 *is changed, lowering the pH and causing calcite dissolution if this mineral is present in the fractures. When mixing the above waters in a ratio 1:1 the mixing causes super saturation of Calcite and may cause precipitation and hence may lower the flow.*

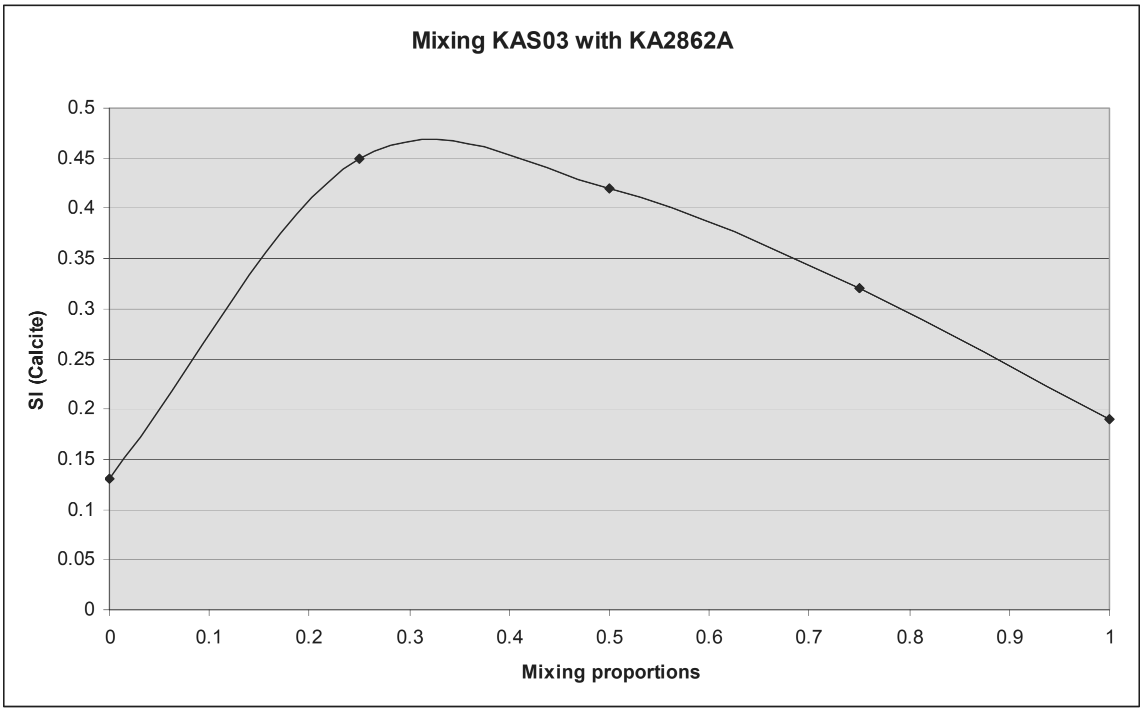

Figure 5-3. *Saturation index of Calcite versus mixing proportions when mixing KAS03 water in proportions with KA2862A water. The mixing results in super saturation which can cause Calcite to precipitate and may cause a lower flow with time in the fracture zones.*

5.4 M3 modelling

A challenge in groundwater modelling is to reveal the origin, mixing and reactions altering the groundwater samples. The groundwater modelling concept M3 (Multivariate Mixing and Mass-balance calculations) Laaksoharju and Skårman, (1995); Laaksoharju et al., (1999b,) can be used for making judgements on this.

5.4.1 Introduction and model description

In M3 modelling the assumption is that the groundwater is always a result of mixing and reactions. M3 modelling uses a statistical method to analyse variations in groundwater compositions so that the mixing components, their proportions, and chemical reactions are revealed. The method quantifies the contribution to hydrochemical variations by mixing of groundwater masses in a flow system by comparing groundwater compositions to identified reference waters. Subsequently, contributions to variations in non-conservative solutes from reactions are calculated.

The M3 method has been tested, evaluated, compared with standard methods and modified over several years within domestic and international research programmes supported by SKB. The main test and application site for the model has been the Äspö HRL (Laaksoharju and Wallin (eds.) 1997; Laaksoharju et al., 1999c). Mixing seems to play an important role at many crystalline and sedimentary rock sites where M3 calculations have been applied such as in different Swedish sites (Laaksoharju et al., 1998), Canada (Smellie and Karlsson, 1996), Oklo in Gabon (Gurban et al., 1998) and Palmottu in Finland (Laaksoharju et al, 1999a).

The features of the M3 method are:

- It is a mathematical tool which can be used to evaluate groundwater field data, to help construct a conceptual model for the site and to support expert judgement for site characterisation.
- It uses the entire hydrochemical data set to construct a model of geochemical evolution, in contrast to a thermodynamic model that simulates reactions or predicts the reaction potential for a single water composition.
- The results of mixing calculations can be integrated with hydrodynamic models, either as a calibration tool or to define boundary conditions.
- Experience has shown that to construct a mixing model based on physical understanding can be complicated especially at site scale. M3 results can provide additional information of the major flow paths, flow directions and residence times of the different groundwater types which can be valuable in transport modelling.
- The numerical results of the modelling can be visualised and presented for non-expert use.

The M3 method consists of 4 steps where the first step is a standard principal component analysis (PCA), selection of reference waters, followed by calculations of mixing proportions, and finally mass balance calculations (for more details see Laaksoharju et al., 1999b). The four modelling steps employed on Äspö data are illustrated in Figure 5-4.

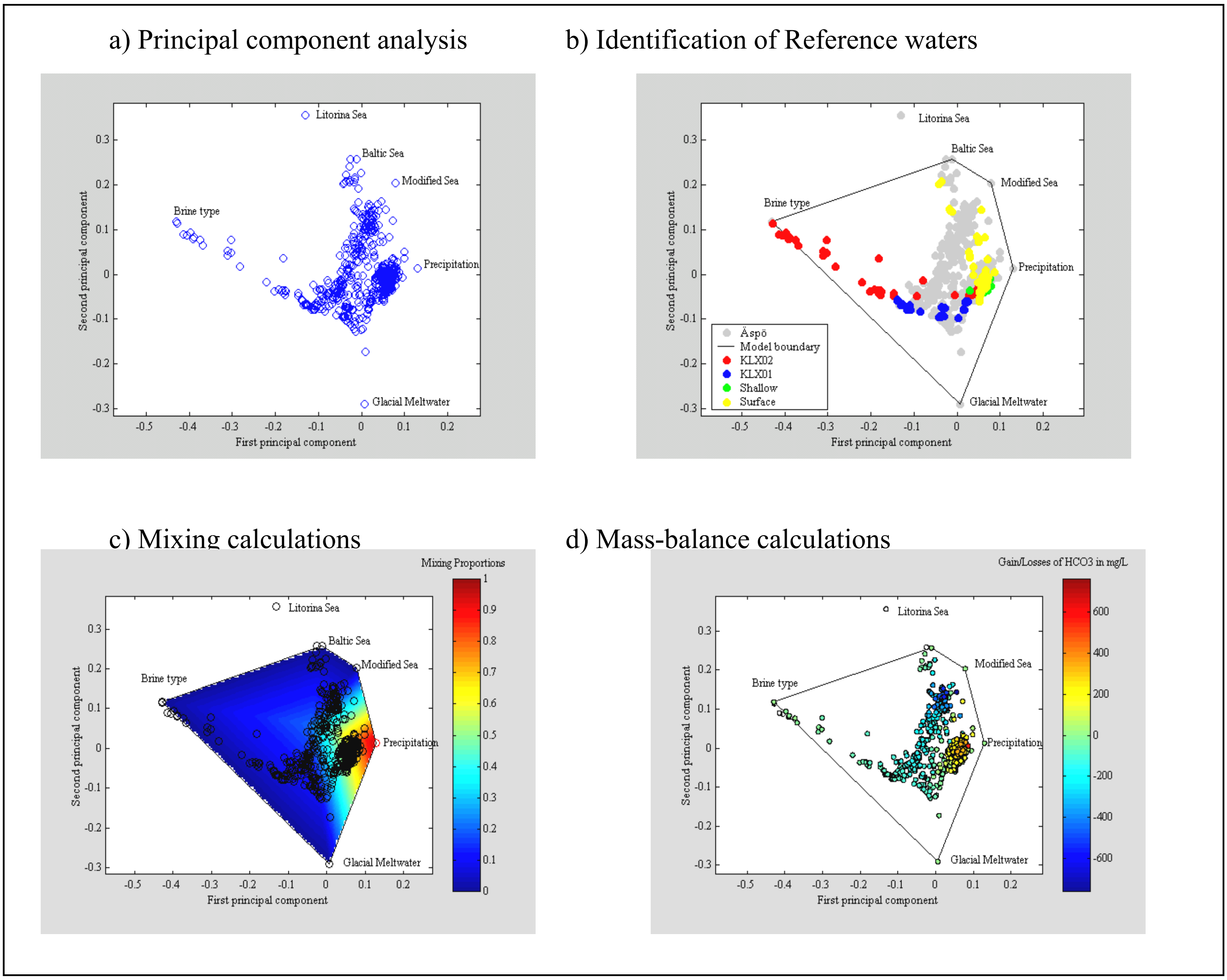

Figure 5-4: *Different steps in the M3 modelling: a) Identification of principal components with the maximum resolution, b) selection of reference waters, c) mixing calculations where the linear distance of a sample to the reference waters e.g. the portions of meteoric water (%) are shown, d) Mass-balance calculations, the sources and sinks (mg/l) of carbonate (HCO_3) are shown which cannot be accounted for by using the ideal mixing model.*

Five reference waters were chosen at the Äspö site using the M3 method: Brine type, Glacial, Sea Water, Biogenic and Precipitation. The existence of these reference waters is also supported by the conceptual post-glacial scenario model (Figure 4-3) of the site. The selected reference waters for the current modelling are (for groundwater analytical data see Table 5-3):

- **Brine type of reference water:** Represents the sampled deep brine type (Cl = 47000 mg/L) of water found in KLX02: 1631-1681m (Laaksoharju et al., 1995a). An old age for the Brine is suggested by the measured ^{36}Cl values indicating a minimum residence time of 1.5Ma for the Cl component (Laaksoharju and Wallin (eds.), 1997).

- **Glacial reference water:** Represents a possible melt-water composition from the last glaciation >13000BP. Modern sampled glacial melt water from Norway was used for the major elements and the $\delta^{18}O$ isotope value (–21 ‰ SMOW) was based on measured values of $\delta^{18}O$ in calcite surface deposits (Tullborg, 1984). The $\delta^{2}H$ value (–158 ‰ SMOW) is a modelled value based on the equation ($\delta H = 8 \times \delta^{18}O + 10$) for the meteoric water line.

- **Litorina Sea water:** Represents old marine water.

- **Biogenic water:** Represents Baltic Sea water affected by microbial sulphate reduction.

- **Precipitation water:** Corresponds to infiltration of meteoric water (the origin can be rain or snow) from 1960. Sampled modern meteoric water with a modelled high tritium (100 TU) content was used to represent precipitation from that period.

Table 5-3: Groundwater analytical or modelled data* used as reference waters in the M3 modelling for Äspö.

	Cl (mg/L)	Na (mg/L)	K (mg/L)	Ca (mg/L)	Mg (mg/L)	HCO_3 (mg/L)	SO_4 (mg/L)	^3H (TU)	δ^2H ‰	$\delta^{18}O$ ‰
Brine	47200	8500	45.5	19300	2.12	14.1	906	4.2	-44.9	-8.9
Glacial	0.5	0.17	0.4	0.18	0.1	0.12	0.5	0	-158*	-21*
Litorina Sea*	6500	3674	134	151	448	93	890	0	-38	-4.7
Biogenic	4920	2300	29	730	233	1200	36	14	-50.4	-7.3
Precipitation	0.23	0.4	0.29	0.24	0.1	12.2	1.4	100*	-80	-10.5

The following six reactions have been considered, with comments on the qualitative outcomes of mixing and mass balance modelling with M3:

1. *Organic decomposition:* This reaction is detected in the unsaturated zone associated with Meteoric water. This process consumes oxygen and adds reducing capacity to the groundwater according to the reaction: $O_2 + CH_2O \rightarrow CO_2 + H_2O$. M3 reports a gain of HCO_3 as a result of this reaction.

2. *Organic redox reactions:* An important redox reaction is reduction of iron III minerals through oxidation of organic matter: $4Fe(III) + CH_2O + H_2O \rightarrow 4Fe^{2+} + 4H^+ + CO_2$. M3 reports a gain of Fe and HCO_3 as a result of this reaction. This reaction takes place in the shallow part of the bedrock associated with influx of Meteoric water.

3. *Inorganic redox reaction:* An example of an important inorganic redox reaction is sulphide oxidation in the soil and the fracture minerals containing pyrite according to the reaction: $HS^- + 2O_2 \rightarrow SO_4^{2-} + H^+$. M3 reports a gain of SO_4 as a result of this reaction. This reaction takes place in the shallow part of the bedrock associated with influx of Meteoric water.

4. *Dissolution and precipitation of calcite:* There is generally a dissolution of calcite in the upper part and precipitation in the lower part of the bedrock according to the reaction: $CO_2 + CaCO_3 \rightarrow Ca^{2+} + 2HCO_3^-$. M3 reports a gain or a loss of Ca and HCO_3 as a result of this reaction. This reaction can take place in any groundwater type.

5. *Ion exchange:* Cation exchange with Na/Ca is a common reaction in groundwater according to the reaction: $Na_2X_{(s)} + Ca^{2+} \rightarrow CaX_{(s)} + 2Na^+$, where X is a solid substrate such as a clay mineral. M3 reports a change in the Na/Ca ratios as a result of this reaction. This reaction can take place in any groundwater type.

6. *Sulphate reduction:* Microbes can reduce sulphate to sulphide using organic substances in natural groundwater as reducing agents according to the reaction: $SO_4^{2-} + 2(CH_2O) + OH^- \rightarrow HS^- + 2HCO_3^- + H_2O$. This reaction is of importance since it may cause corrosion of the copper capsules. Vigorous sulphate reduction is generally detected in association with marine sediments that provide the organic material and the favourable salinity interval for the microbes. M3 reports a loss of SO_4 and a gain of HCO_3 as a result of this reaction. This reaction modifies the seawater composition by increasing the HCO_3 content and decreasing the SO_4 content.

The above information is included in the geochemical description of the site, see section 6. The model uncertainties are described in detail by Laaksoharju et al., 1999b; Andersson et al., 2002a. The selected M3 model used for the Äspö model domain is shown in Figure 5-5. The calculated mixing proportions and the results from the massbalance calculations are listed in Appendix 1.

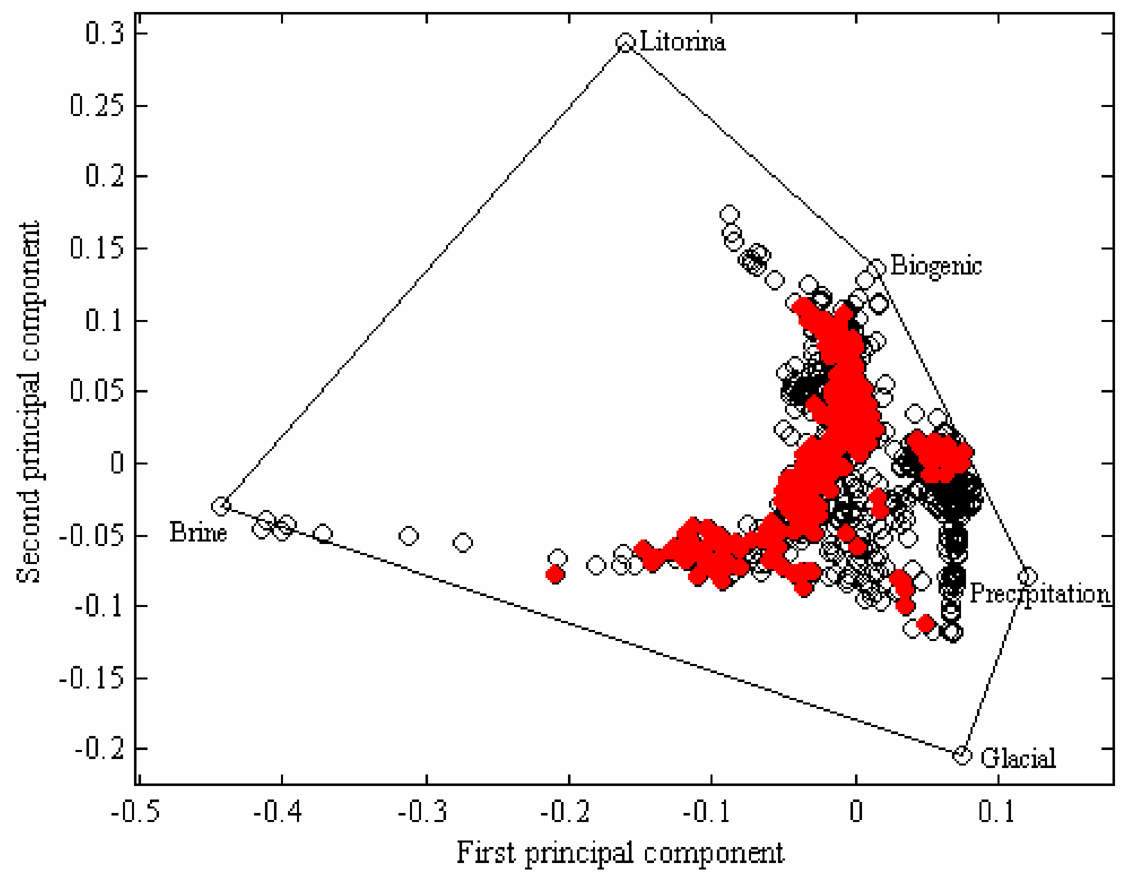

Figure 5-5: *PCA plot illustrates samples from the Äspö model domain (in red) and the selected reference waters used in the modelling.*

5.5 Visualisation of the groundwater properties

To visualise the measured and modelled groundwater properties at Äspö, and to summarise the information from all the samples a 3D interpolation by using TecPlot was performed. The interpolation method used was 3D Kriging. To show the results a 2D cutting plane was chosen to go along the Äspö HRL tunnel in a SW-NE direction. To reduce uncertainties the cutting plane was chosen where most of the sampling points were located.

The interpolation is uncertain at large depths (>500m) and in the corners of the cutting plane, where there are few or no observations. It is important to note that it is assumed that the sampled waters represent conductive and connected fractures and not the rock matrix. The results of the interpolation should be regarded as a potential map for a certain groundwater property to occur at a given bedrock location. The map has a high degree of accuracy only close to the sampling points. The 3D interpolation was based on a total of 29 representative samples from the site reflecting the situation before and after tunnel construction (see Appendix 1). At the surface rain water alternatively Sea water was used dependent of the geographical location of the corners. In the lower corners of the model at –1000m depth the information from the nearest deep borehole was used. Figure 5-6 shows the results of the 3D interpolation of the measured values of Cl, $\delta^{18}O$ and Na along the SE-NW cutting plane and for the time periods 1995-1997 and 2000-2001. These plots are used for showing the chemical variations along the tunnel spiral. Figure 5-7 shows the interpolation of the measured values of Ca, HCO_3 and M3 deviation of HCO_3 along the SE-NW cutting plane. These plots can be used for showing the distribution of measured values and to indicate effects from reactions. Figure 5-8 shows the M3 calculated mixing proportions of Biogenic (Modified Sea water), Brine, Glacial, Litorina Sea and Precipitation. This information is used for indicating the possible origin of the water and possible flow patterns. The figure show that Brine water is withdrawn towards the tunnel with time, glacial water is consumed as well as Litorina Sea water which is natural since these water types are no longer formed. The information from the above modelling is integrated in the geochemical description of the site, see chapter 6.

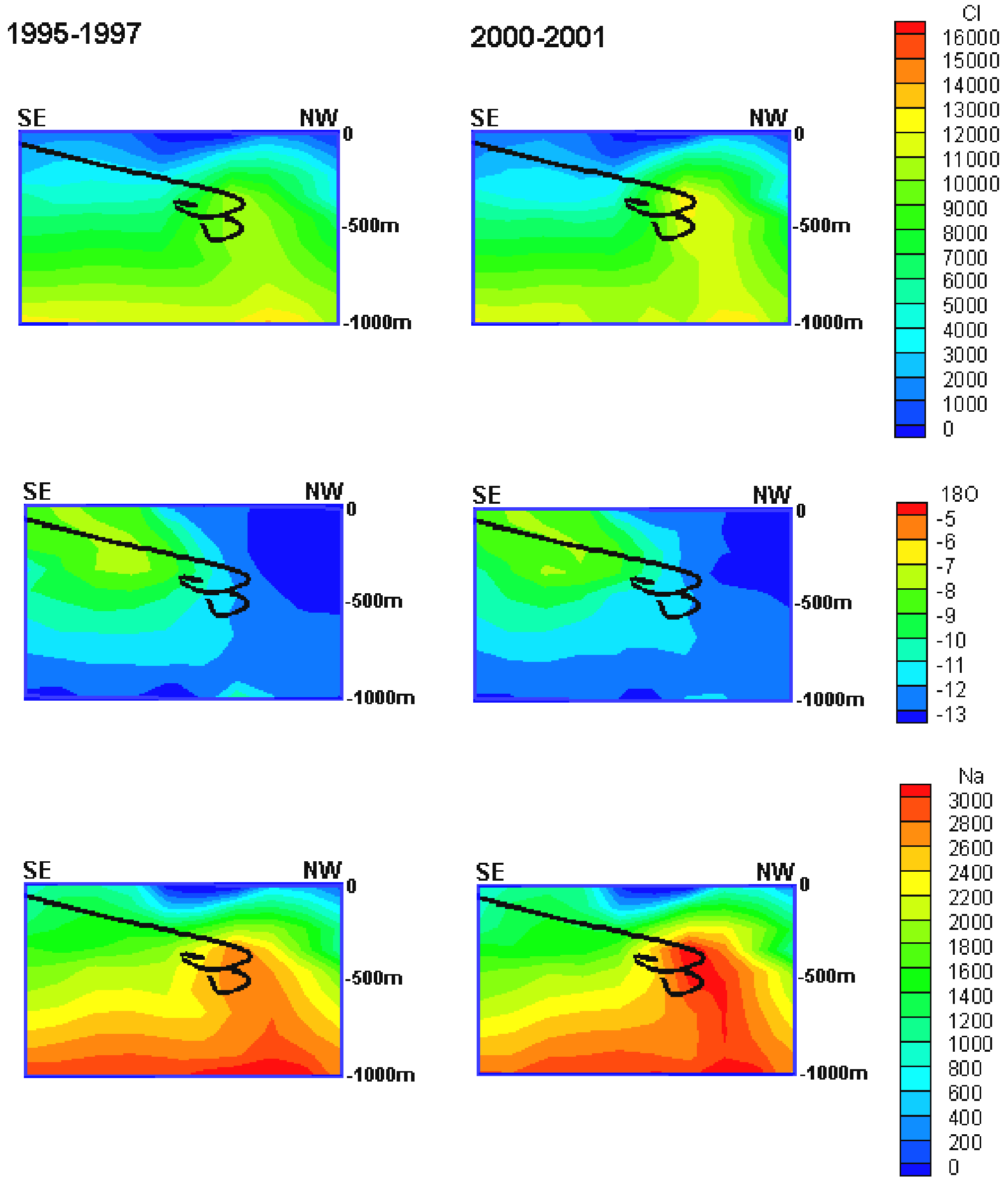

Figure 5-6: *The cutting planes showing the results of the 3D interpolation of the measured values of Cl (mg/l), $\delta^{18}O$ (O-18 as SMOW in ‰) and Na (mg/l) along the SE-NW cutting plane and for the time periods 1995-1997 and 2000-2001. These plots can be used for showing the distribution of measured values along the tunnel spiral (shown in black).*

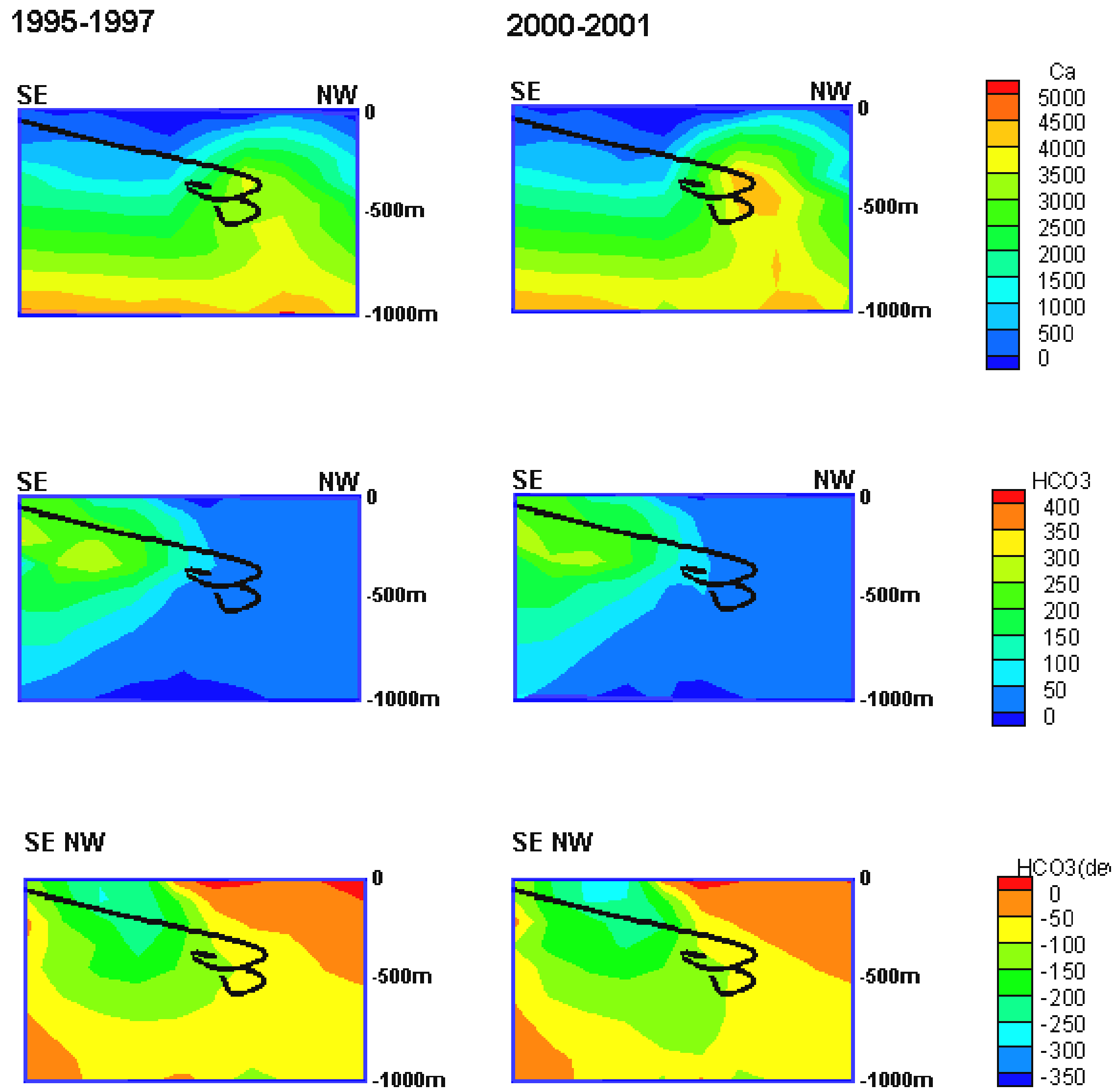

Figure 5-7: *The cutting planes showing the results of the 3D interpolation of the measured values of Ca (mg/l), HCO_3 (mg/l) and deviation of HCO_3 (mg/l) along the SE-NW cutting plane and for the time periods 1995-1997 and 2000-2001. These plots can be used for showing the distribution of measured values and to indicate effects from reactions. The deviation of HCO_3 (dev) is shown as a example of deviation calculations in M3 which is used as an indication of mass-balance reactions. A gain (positive value) can be due to calcite dissolution, decomposition of organic matter or sulphate reduction. A loss (negative value) can indicate calcite precipitation.*

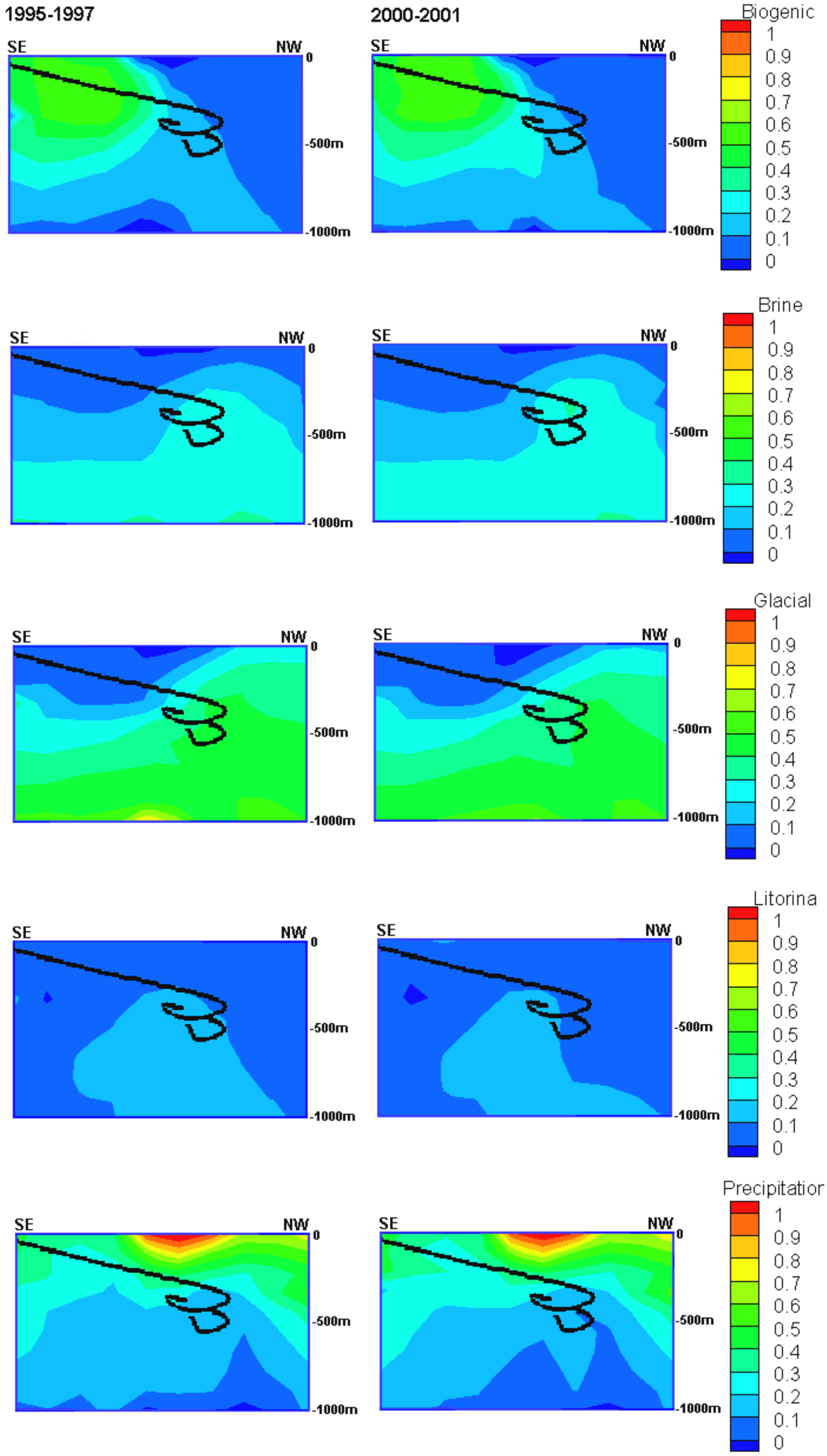

Figure 5-8: *The cutting planes SE-NW showing the results of the 3D interpolation of the M3 calculated mixing proportions of Biogenic (Modified Sea water), Brine, Glacial, Litorina Sea and Precipitation for the time periods 1995-1997 and 2000-2001. This information is used for indicating the possible origin of the water and possible flow patterns.*

5.5.1 Interpolation uncertainties

An advantage with 3D interpolation is that the model boundaries can be easily selected and uncertainties can be investigated in various parts of the model. Different cutting plains can be visualised for different fracture zones using the same model and boundary conditions. Finally the comparison between independent modelling such as hydromodelling is easier since various cutting planes along the fracture zones or in the modelled area can be compared.

The uncertainties can be tested in various ways. Figure 5-9 shows the effects from changing the cutting plane 20-50m from the original cutting plane when interpolating in 3D. The results show that there are differences but the overall interpretation will be similar and therefore the selected cutting plane will not affect the site scale modelling. M3 tests described by Andersson et al., 2002 shows that when adding e.g. 10% of precipitation water which is the uncertainty of the method leads to a 10% higher content of precipitation water at larger depths. The uncertainty did not lead to misinterpretations and should did not affect the final judgement of the site. The conclusion was that it is important to test the effects of uncertainties to build confidence in the codes and models used. Unrealistic effects on site modelling are generally easily detected when using mathematical modelling.

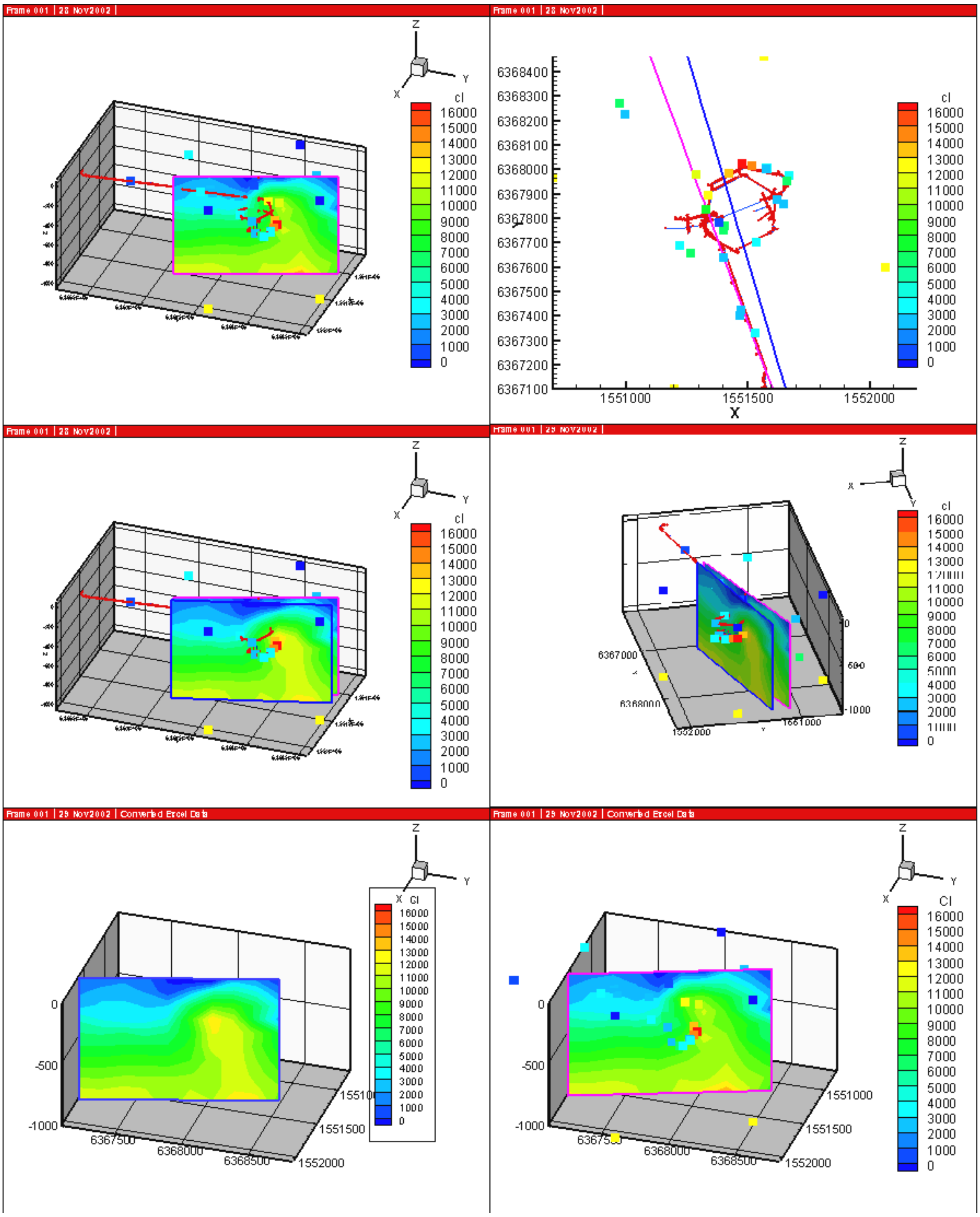

__Figure 5-9:__ Test of effects from changing the cutting plane 20-50m (framed in read) from the original cutting plane (framed in blue) along the tunnel shown in different views. The results show that there are differences but the overall interpretation will be similar and therefore the selected cutting plane will not affect the site scale modelling.

5.6 Comparison between hydrogeological and hydrogeochemical model and up-coning.

The hydrogeology and geochemistry deals with the same media of describing the groundwater properties. Therefore these two sciences should be able to describe the groundwater system in a similar way. In a SKB project named TASK 5 (Wikberg 1998, Svensson et al, 2002, Rhen and Smellie (eds), 2003) the method of integration was tested. Here the Cl and the M3 mixing proportions based on chemical sampling and modelling were compared with the results from independent hydrogeological modelling. The measured values (Figure 5-10) and the modelled values were compared and despite discrepancies all the codes could basically describe the Äspö site in terms of similar mixing proportions and measured salinity values. The advantages with integration are:

- Hydrogeological models will be constrained by a new data set. If, as an example, the model cannot produce any Meteoric water at a certain depth and the hydrogeochemical data indicates that there is a certain fraction of this water type at this depth, then the model has to be revised.

- Hydrogeochemical models generally focus on the effects from reactions on the obtained groundwater rather than on the effects from transport. An integrated modelling approach can describe flow directions and hence help to understand the origin of the groundwater, the turn over time of the groundwater system can indicate the age of the groundwater, and knowing the flow rate can be used to indicate the reaction rate. The obtained groundwater chemistry is a result of reactions and transport, therefore only an integrated description can be used to correctly describe the measurements.

- By comparing two independent modelling approaches a consistency check can be made. As a result a better confidence in processes active, geometrical description and material properties can be gained.

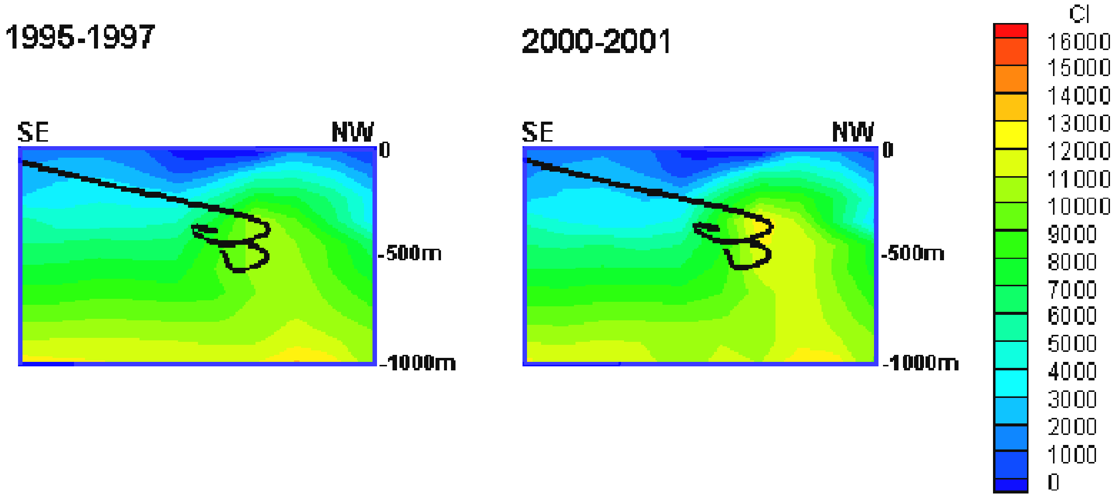

Figure 5-10: *Interpolated Cl (mg/l) values along the Äspö HRL tunnel. The hydrodynamic modelling could simulate the same type of up-coning (Svensson et al., 2002) as in the hydrochemical interpolation. This is an example of comparisons of independent models which plays an important part in the confidence building during the site description.*

To check if the modelled up-coning effect shown in Figure 5-10 is an interpolation effect or really an indication of increasing salinity with time a detailed investigation of the data set was performed. There are relative few time series from boreholes but two boreholes can indicate an increase of deep saline water with time (see Figure 5-11) which can be an effect of up-coning. The up-coning is an important process which can affect the chemical stability of the bentonite buffer during the repository construction.

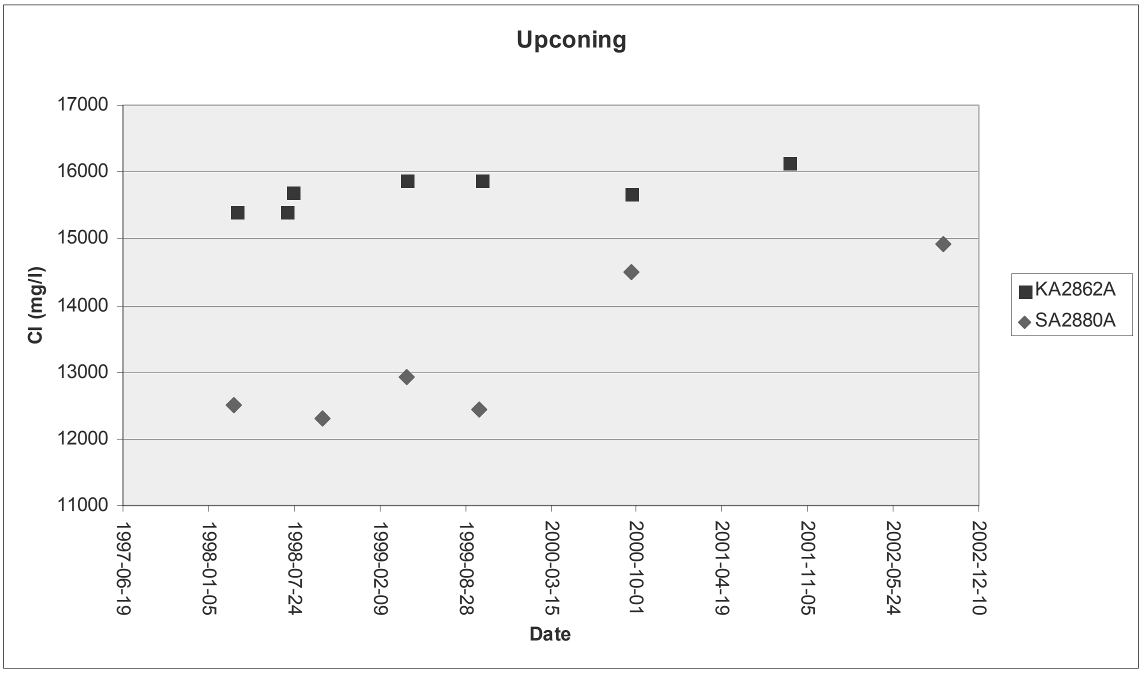

Figure 5-11: *Example of borholes with a time series and possible indication of increasing salinity used as an indication of up-coning deep water into the Äspö HRL tunnel.*

5.7 Site specific hydrogeochemical uncertainties

At every phase of the hydrogeochemical investigation programme – drilling, sampling, analysis, evaluation, modelling – uncertainties are introduced which have to be accounted for, addressed fully and clearly documented to provide confidence in the end result, whether it will be the site descriptive model or repository safety analysis and design (Smellie et al, 2002). Handling the uncertainties involved in constructing a site descriptive model has been documented in detail by Andersson et al. (2001). The uncertainties can be conceptual uncertainties, data uncertainty, spatial variability of data, chosen scale, degree of confidence in the selected model, and error, precision, accuracy and bias in the predictions. Some of the identified uncertainties recognized during the Äspö modelling exercise are discussed below.

The following data uncertainties have been estimated, calculated or modelled for the data and models used for the Äspö Model Domain:

- drilling; may be ± 10-70% at Äspö
- effects from drilling during sampling; is <5%
- sampling; may be ± 10% at Äspö
- influence associated with the uplifting of water; may be ± 10%
- sample handling and preparation; may be ± 5%
- analytical error associated with laboratory measurements; is ± 5%
- mean groundwater variability at Äspö during groundwater sampling (first/last sample); is about 25%.
- The M3 model uncertainty; is ±0.1units within 90% confidence interval

Conceptual errors can occur from e.g. the paleohydrogeological conceptual model. The influences and occurrences of old water end-members in the bedrock can only be indicated by using certain element or isotopical signatures. The uncertainty is therefore generally increasing with the age of the water type. The relevance of an end-member participating in the groundwater formation can be tested by introducing alternative end-member compositions or by using hydrodymic modelling to test if old water types can resign in the bedrock during prevailing hydrogeological conditions.

Uncertainties in the PHREEQC depend on which model is used in PHREEQC. Generally the analytical uncertainties and uncertainties concerning the thermodynamic data bases are of importance. Care is also required to select mineral phases which are realistic (even better if they have been positively identified) for the systems being modelled. The errors can be addressed by using sensitivity analyses, alternative models and descriptions. Such analysis was regarded to be outside the scope of this exercise.

The uncertainty due to 3D interpolation and visualization depends on various issues i.e. data quality, distribution, model uncertainties, assumptions and limitations introduced. The uncertainties are therefore often site specific and some of them can be tested such as the effect from changing from a 2D to a 3D interpolation. The site specific uncertainties can be tested by using quantified uncertainties, alternative models, and comparison with independent models such as hydrogeological simulations. Test performed on Äspö data showed minor differences.

The discrepancies between different modelling approaches can be due to the differences in the boundary conditions used in the models or in the assumptions made. The discrepancies between models should be used as an important validation and confidence building opportunity to guide further modelling efforts.

6 The Äspö HRL site descriptive model results

6.1 Geochemical description

To summarise the results from the modelling of the Äspö site a *Site descriptive model* was constructed. This model consists of one illustration where various observed or modelled geochemical properties are summarised.

6.1.1 Model description

The site descriptive Model 2002 for the Äspö site is shown in Figure 6-1. The illustration shows distribution of the major water types indicates the mixing proportions, draw down of the water table and up-coning of deeper water caused by the tunnel construction. The major type of reactions occurring at the site is also shown in the below figure.

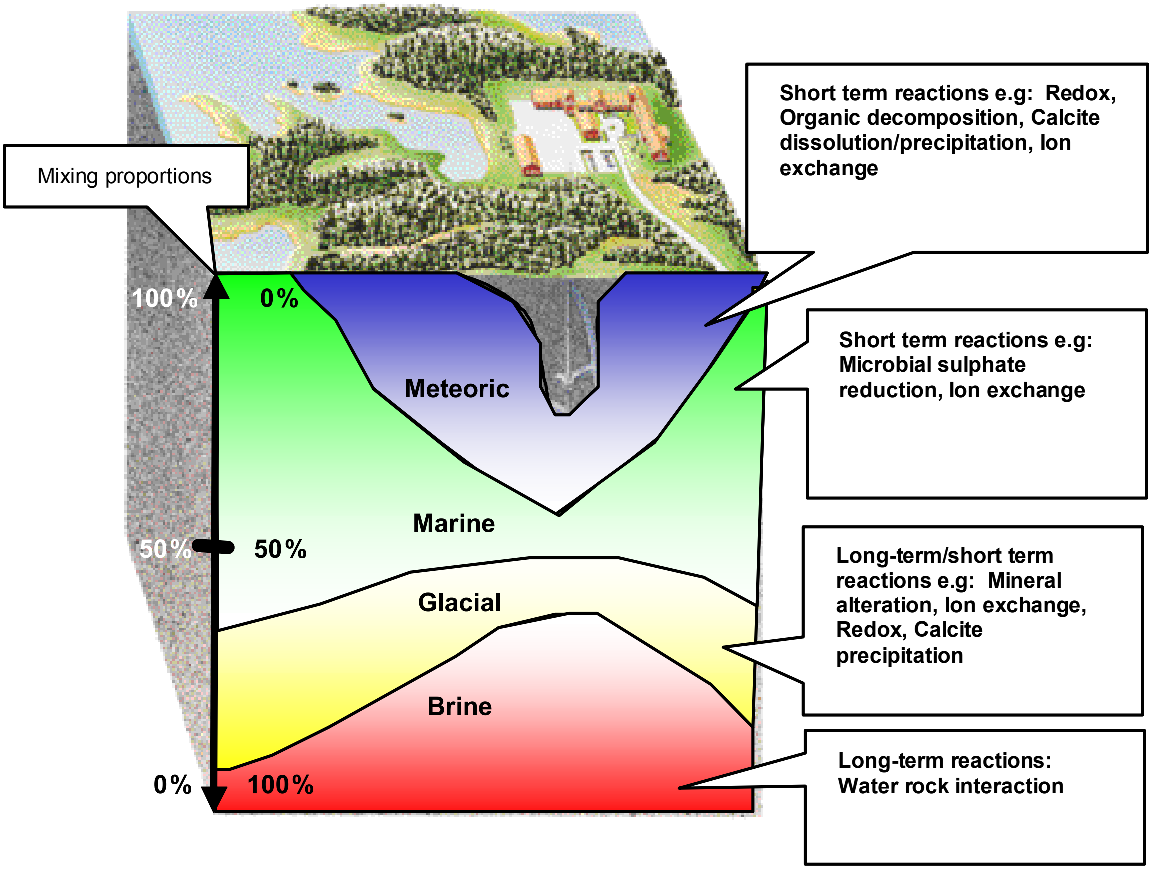

Figure 6-1: *Site descriptive model, Model 2002 for Äspö. The dominating water types Brine Type (Ca-Na-Cl rich water type), Glacial Type (K-Ca-SO_4 rich water type), Marine Type (Na-Cl rich water type) and Meteoric Type (HCO_3-SO_4 rich water type) water are illustrated as mixing proportions (%) and major massbalance reactions occurring within the domains. The mixing proportions add up to 100% in all points.*

The major characteristics of the dominating waters types (Meteoric, Marine, Glacial and Brine) at the Äspö site are:

Meteoric Type (HCO_3-SO_4 to Na-HCO_3 rich water type): As seen in Figure 6-1, the tunnel part under land is dominated by meteoric water (named Precipitation in M3 calculations) to a depth of approximately 100-200m. This water type is altered by fast short-term reactions such as redox reactions that prevent deep oxygen penetration into the bedrock. Oxygen consumption and carbonate production linked to organic decomposition, iron reduction and methane production is generally the dominating redox reaction (Pedersen and Karlsson, 1995, Banwart et al., 1996, Pedersen 2000). Saturation index calculations and M3 modelling indicated dissolution of calcite in the upper recharge part of the bedrock and the resulting precipitation of calcite in the lower part of the bedrock which can alter the direction of the groundwater flow paths in fractured bedrock. Sinks and sources of anions and cations due to sorption/desorption (i.e. surface complexation and ion exchange) can alter the water composition of the meteoric groundwater (Laaksoharju and Wallin (eds), 1997).

Marine Type (Na-Cl rich water type): The tunnel part under the sea is dominated by marine water but marine water is also drawn towards the tunnel from the sides when the tunnel is penetrating the Äspö island (Figure 6-1). The exact penetration depth is not known because of lack of observations and is therefore based on M3 modelling. (The water type is named Litorina Sea and Biogenic in M3 calculations). The source of Mg is shown to be associated with an influx of marine water, present Baltic Sea or possibly Litorina Sea water. Identified fast short-term reactions that have modified the Sea water are a sink of Na and a gain of Ca, due to ion exchange with clays. Marine water is characterised by fast, short-term reactions that modify the waters when they enter the bedrock and have been identified as a sink of K and Na, and a gain of Ca, due to ion-exchange with clays (Laaksoharju and Wallin (eds.) 1997). The Marine water can undergone decomposition of organic material due to microbiological sulphate reduction (Biogenic water) which has been detected by M3 modelling as a sink for SO_4 and a source for HCO_3. The calculations correlate well with the measured content of sulphate-reducing bacteria at locations at Äspö-HRL (Laaksoharju (ed.), 1995).

Glacial Type (K-Ca-SO_4 rich water type): An important water type found at Äspö has been affected by a component of cold climate recharge (Tullborg, 1997). The low $\delta^{18}O$ value indicates a climate which corresponds to a mean annual temperature of -3°C using Dansgaard's formula (Dansgaard, 1964). Such a low temperature has not prevailed during post-glacial times in the area. Cold climate signatures are found in many samples from 100-500m depths at Äspö (Laaksoharju et al., 1995b). The interpretation from the conceptual model (see Figure 4-3) and the M3 calculations are that this water type has been formed by the continental ice sheet melting and the water has been injected into the saline water. The amount, oxidation state, penetration depth of glacial meltwater are not completely known. Despite the many indications of glacial meltwater at great depth, there is no clear evidence from the fracture mineral distribution that this water was oxygenated to more than 50-100m in the upper part of the bedrock (Tullborg, 1997). The calculated sink for Ca may be due to calcite precipitation during injection of glacial groundwater and consequent mixing with calcite-saturated saline groundwater which caused super saturation of calcite (Laaksoharju and Wallin (eds.), 1997).

Brine Type (Ca-Na-Cl rich watertype): At depths below 500-1000m the Brine groundwater mixing portion starts to play an important role. The origin of the brine component at the Äspö site is unknown. Alternatives such as ancient metamorphic fluids, water/rock interaction, fluid inclusions, leaching of paleozoic sediments, and localised freezing have been discussed (Laaksoharju and Wallin (eds.), 1997) as a source for the brine water component. The stable isotope data ($\delta^{18}O$= -10.4 to -8.9 o/oo; $\delta^{2}H$ -60.2 to -44.9 o/oo) from the deep saline groundwaters show significant deviation from MWL (Meteoric Water Line). Characteristics similar to these low temperature Precambrian granitic shield areas are shown for the deep Canadian brines (Frape et al., 1984; Frape and Fritz, 1987). The deviation from MWL is ascribed to water/rock interaction during long periods of time. Saturation index calculations indicate equilibrium between the water and the rock forming minerals. An old age for the Brine is also suggested by the measured ^{36}Cl values indicating a minimum residence time of 1.5Ma for the Cl component (Laaksoharju and Wallin (eds.), 1997). The origin may be unclear but the mean residence time for the groundwater is considerable.

6.1.2 Stability criteria and assessment of uncertainties

The performed evaluation indicated that the water composition is such that the representative samples close to the repository depth can meet the SKB chemical stability criteria for Eh, pH, TDS, DOC, Colloids and Ca+Mg (see Table 6-1).

Table 6-1: The hydrochemical stability criteria defined by SKB which are valid for the representative samples from the Äspö site. Chemical criteria are applied on the sample from KA2862A:381m (sampled 2001-09-24), N/A = not analysed.

	Eh mV	pH (units)	TDS (g/l)	DOC (mg/l)	Colloids* (mg/l)	Ca+Mg (mg/l)
Criterion	<0	6-10	<100	<20	<0.5	>4
KA2862A:381m	-200	7.8	27.4	2.1	N/A	5230.6

Many of the uncertainties associated with hydrochemistry are difficult to describe since there are no 'undisturbed' samples to provide a reference point. This difficulty can be partly compensated for by controlling (and modelling) those major disturbing influences on groundwater quality and hence to reduce uncertainties. For example:

- Collect data that reflect the spatial and temporal groundwater variations
- Use alternative models, sensitive analyses and independent models for during groundwater modelling.
- Comparison and integration between models
- Use discrepancies between models to guide further modelling efforts

6.1.3 Recommendations for updating the model

Many of the ideas suggested during this work were not tested or integrated into the final work since they were regarded to require more time and resources and are therefore suggested for the next update of the Äspö model. Such suggestions are:

- Close integration with the hydrogeological model of the site
- Test to include microbial effects (Pedersen, 2000) into the modelling
- Detailed comparison with the paleohydrogelogical model based on information from fracture mineralogy
- Use more detailed classical groundwater modelling for reaction modelling and for comparison with the M3 massbalance calculations.
- Detailed redox modelling to asses the changes due to the drawdown of shallow water into the tunnel. This information could be used for performance assessment.

7 Acknowledgements

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Appendix 1: The used data

The appendix lists the groundwater data used including, borehole name, coordinates, major components and M3 mixing proportions.

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
1	Swedish	KFR01	2000-07-19	6701429,967	1632437,505	-73,497	1350	10	117	500	2960	341	125	-8,7	-72,4	11,9	0,10	0,35	0,36	0,10	0,10
2	Swedish	KFR01	1989-04-04	6701422,588	1632428,526	-98,42	1550	6,8	141	910	4090	327,2	89	-10,9	-79	16,9	0,13	0,18	0,44	0,13	0,13
3	Swedish	KFR01	1989-12-27	6701422,588	1632428,526	-98,42	1490	6,7	132	783	4020	321,6	86	-10,9	-79	16,9	0,13	0,17	0,45	0,13	0,13
4	Swedish	KFR01	1990-06-15	6701422,588	1632428,526	-98,42	1500	9,4	138	817	3950	316	85	-10,3	-74,5	8,4	0,12	0,24	0,39	0,12	0,12
5	Swedish	KFR01	1990-12-27	6701422,588	1632428,526	-98,42	1500	15,3	137	785	3870	309,6	80	-10,3	-77,1	16,9	0,12	0,25	0,38	0,12	0,12
6	Swedish	KFR01	1992-01-10	6701422,588	1632428,526	-98,42	1460	8,4	137	774	3770	301,6	90	-10,5	-81,3	16,9	0,12	0,20	0,44	0,12	0,12
7	Swedish	KFR01	1992-06-29	6701422,588	1632428,526	-98,42	1510	6,7	135	767	3840	307,2	98	-9,3	-74,2	16,9	0,11	0,28	0,38	0,11	0,11
8	Swedish	KFR01	1998-10-01	6701422,588	1632428,526	-98,42	1540	7,4	135	695	3590	287,2	97	-9,7	-79,2	7,7	0,11	0,25	0,41	0,11	0,11
9	Swedish	KFR01	1999-09-30	6701422,588	1632428,526	-98,42	1540	7,4	130	643	3550	284	98	-9,7	-77	13,7	0,11	0,26	0,41	0,11	0,11
10	Swedish	KFR01	2000-07-11				1490	8,4	130	691	3560	348	99	-9,7	-79,2	7,7	0,12	0,24	0,41	0,12	0,12
11	Swedish	KFR01	2000-07-19				1470	7,8	130	664	3530	346	101	-9,6	-77,5	6,6	0,12	0,25	0,40	0,12	0,12
12	Swedish	KFR01	2000-07-31				1400	10,1	115	486	2940	360	125	-8,7	-70,3	13,6	0,10	0,35	0,35	0,10	0,10
13	Swedish	KFR01	2000-08-22				1380	8	125	641	3420	321	99	-10,1	-82,5	6,8	0,12	0,21	0,45	0,12	0,12
14	Swedish	KFR02	1995-06-27				1161	4,5	102	887	3710	296,8	69	-13,9	-103,9	12,74	0,10	0,10	0,28	0,41	0,10
15	Swedish	KFR02	2000-06-30	6701771,473	1632880,809	-147,3	1180	4,9	87	997	3620	171	64	-13,6	-113	3,3	0,09	0,09	0,29	0,44	0,09
16	Swedish	KFR02	1995-06-27	6701771,473	1632880,809	-185,3	1344	5	137	1113	4460	356,8	72	-12,5	-94,7	8,24	0,12	0,12	0,32	0,30	0,12
17	Swedish	KFR02	2000-07-10	6701771,473	1632880,809	-185,3	1460	7	143	1210	4520	295	82	-11,2	-90,1	1,9	0,13	0,13	0,43	0,18	0,13
18	Swedish	KFR02	1995-06-27				1449	5,9	162	1184	4760	380,8	79	-11,4	-83,7	6,44	0,14	0,14	0,41	0,17	0,14
19	Swedish	KFR02	2000-07-10				1510	7,5	158	1220	4600	339	89	-10,6	-86,1	2,9	0,14	0,15	0,43	0,14	0,14
20	Swedish	KFR02	1995-06-27				1338	5,2	134	1031	4230	338,4	78	-12,2	-93,6	9,62	0,12	0,12	0,37	0,26	0,12
21	Swedish	KFR02	2000-07-10				1390	6,4	134	1120	4250	278	81	-11,7	-93,6	2,3	0,12	0,12	0,41	0,22	0,12
22	Swedish	KFR03	1995-06-27	6701910,395	1632990,956	-107	1191	6	112	887	3720	297,6	70	-13,9	-103,2	12,68	0,11	0,11	0,29	0,39	0,11
23	Swedish	KFR03	2000-07-10	6701910,395	1632990,956	-107	1110	7,3	99	833	3330	156	68	-13,9	-110	2,9	0,09	0,09	0,34	0,39	0,09
24	Swedish	KFR03	1995-06-27	6701910,395	1632990,956	-133	1144	5,9	114	931	3740	299,2	66	-14,5	-107,6	12,56	0,10	0,10	0,24	0,45	0,10
25	Swedish	KFR03	2000-07-10	6701910,395	1632990,956	-133	1270	8	115	1030	3920	191	70	-13,1	-103,6	2,3	0,11	0,11	0,35	0,33	0,11
26	Swedish	KFR03	1995-06-27	6701910,395	1632990,956	-151	1168	5,4	117	973	3820	305,6	68	-14,4	-106,8	12,08	0,10	0,10	0,24	0,45	0,10
27	Swedish	KFR03	2000-07-10	6701910,395	1632990,956	-151	1430	7,9	119	1030	4160	228	76	-12	-96,8	1,8	0,12	0,12	0,40	0,25	0,12
28	Swedish	KFR03	1995-06-27	6701910,395	1632990,956	-176	1376	5,8	127	1015	4170	333,6	75	-12,4	-94,6	9,98	0,12	0,12	0,35	0,28	0,12
29	Swedish	KFR03	2000-07-10	6701910,395	1632990,956	-176	1460	7,7	120	1030	4140	226	75	-12	-95	2,8	0,12	0,12	0,41	0,24	0,12
30	Swedish	KFR04	1995-06-27	6701947,588	1633059,082	-111,79	1139	5,4	104	851	3520	281,6	69	-13,5	-103,8	13,88	0,10	0,10	0,31	0,38	0,10
31	Swedish	KFR04	2000-07-18	6701947,906	1633066,322	-138,836	1280	6,4	113	971	3780	198	76	-12,7	-100,1	2,7	0,11	0,11	0,39	0,29	0,11
32	Swedish	KFR04	1995-06-27	6701947,906	1633066,322	-138,836	1760	9,5	159	705	4269	341,5	110	-9,5	-73,4	9,39	0,12	0,31	0,33	0,12	0,12
33	Swedish	KFR04	2000-07-18	6701948,235	1633073,82	-166,848	1750	10,6	155	782	4170	348	109	-9,7	-77,1	4,1	0,12	0,28	0,35	0,12	0,12
34	Swedish	KFR04	1995-06-27	6701948,235	1633073,82	-166,848	1786	10,3	162	703	4290	343,2	109	-9,6	-73,5	9,26	0,12	0,31	0,33	0,12	0,12
35	Swedish	KFR04	2000-07-18	6701947,588	1633059,082	-111,79	1710	10,5	149	791	4150	337	107	-9,9	-79,4	2,9	0,13	0,25	0,37	0,13	0,13
36	Swedish	KFR05	1995-06-27	6701976,313	1633055,033	-160,093	1644	15,3	158	506	3830	306,4	112	-8,8	-70,1	12,02	0,11	0,40	0,28	0,11	0,11
37	Swedish	KFR05	2000-07-12	6701976,313	1633055,033	-160,093	1680	16,9	154	566	3680	355	114	-8,9	-73,7	9,3	0,11	0,37	0,29	0,11	0,11
38	Swedish	KFR08	2000-07-10	6702083,94	1633077,453	-87,887	1400	21,6	141	286	2800	319	130	-8,2	-68,1	17,9	0,09	0,48	0,25	0,09	0,09
39	Swedish	KFR08	2000-07-10	6702099,574	1633101,153	-90,371	1290	10	120	507	2960	293	122	-8,9	-71,9	17,7	0,09	0,35	0,37	0,09	0,09
40	Swedish	KFR08	1989-04-04	6702118,5	1633129,842	-93,378	1640	26,5	135	297	3170	380	114	-8	-59,2	16,9	0,10	0,53	0,17	0,10	0,10
41	Swedish	KFR08	1989-12-27	6702118,5	1633129,842	-93,378	1600	22,8	134	250	3120	249,6	118	-8,4	-63,3	42,2	0,09	0,50	0,24	0,09	0,09
42	Swedish	KFR08	1990-06-15	6702118,5	1633129,842	-93,378	1590	36,8	140	238	3100	248	120	-8	-60,1	16,9	0,08	0,60	0,14	0,08	0,08
43	Swedish	KFR08	1992-01-10	6702118,5	1633129,842	-93,378	1540	35,7	144	213	3050	244	120	-8,1	-64,7	42,2	0,08	0,58	0,17	0,08	0,08
44	Swedish	KFR08	1992-06-29	6702118,5	1633129,842	-93,378	1520	19	135	361	3150	252	128	-8,3	-63,5	25,4	0,09	0,49	0,26	0,09	0,09
45	Swedish	KFR08	1994-04-08	6702118,5	1633129,842	-93,378	1450	17,5	138	358	3120	249,6	115	-8	-60,9	16,28	0,08	0,51	0,25	0,08	0,08
46	Swedish	KFR08	1995-01-05	6702118,5	1633129,842	-93,378	1440	17	135	344	3000	240	120	-7,9	-63,7	17	0,08	0,50	0,26	0,08	0,08
47	Swedish	KFR08	1995-06-26	6702118,5	1633129,842	-93,378	1438	14,6	140	326	3050	244	118	-8	-64,4	16,7	0,08	0,48	0,27	0,08	0,08
48	Swedish	KFR08	1996-01-05	6702118,5	1633129,842	-93,378	1430	15	134	322	2980	238,4	116	-9,8	-78,1	17,12	0,10	0,32	0,39	0,10	0,10
49	Swedish	KFR08	1996-10-24	6702118,5	1633129,842	-93,378	1526,4	15,8	131	318	2950	236	115	-8,1	-66,1	17,3	0,08	0,46	0,29	0,08	0,08
50	Swedish	KFR08	1997-09-18	6702118,5	1633129,842	-93,378	1530	24,6	158	195	2920	233,6	120	-7,8	-66	17,48	0,08	0,55	0,21	0,08	0,08
51	Swedish	KFR08	1998-10-01	6702118,5	1633129,842	-93,378	1540	15,2	131	309	2840	227,2	112	-8	-66,3	33,4	0,08	0,46	0,29	0,08	0,08
52	Swedish	KFR08	1999-09-30	6702118,5	1633129,842	-93,378	1450	15,3	134	477	3240	259,2	115	-8,2	-67,1	15,56	0,09	0,44	0,29	0,09	0,09
53	Swedish	KFR08	1999-11-19	6702118,5	1633129,842	-93,378	1400	6,8	141	467	3230	258,4	113	-8,2	-66	15,62	0,09	0,42	0,32	0,09	0,09
54	Swedish	KFR08	2000-07-10	6702118,5	1633129,842	-93,378	1470	16,2	142	474	3160	354	120	-8,3	-68,1	12,7	0,10	0,43	0,27	0,10	0,10
55	Swedish	KFR09	1992-06-29	6701919,224	1632686,506	-83,745	1490	26,3	150	220	2980	238,4	134	-8	-66,3	33,4	0,08	0,54	0,22	0,08	0,08
56	Swedish	KFR09	1994-04-08	6701919,224	1632686,506	-83,745	1450	31,5	150	216	2940	235,2	127	-7,7	-61	17,36	0,08	0,61	0,16	0,08	0,08
57	Swedish	KFR09	1995-01-05	6701919,224	1632686,506	-83,745	1480	36	160	181	2900	232	128	-7,8	-63,3	17,6	0,08	0,62	0,14	0,08	0,08
58	Swedish	KFR09	1995-06-26	6701919,224	1632686,506	-83,745	1458	28,3	162	194	2920	233,6	126	-7,9	-62,9	17,48	0,08	0,59	0,18	0,08	0,08
59	Swedish	KFR09	1996-01-05	6701919,224	1632686,506	-83,745	1430	29,4	162	183	2830	226,4	120	-7,9	-65	18,02	0,08	0,58	0,19	0,08	0,08
60	Swedish	KFR09	1996-10-24	6701919,224	1632686,506	-83,745	1538,3	32,1	158	207	2840	227,2	124	-8	-65,2	17,96	0,08	0,58	0,18	0,08	0,08
61	Swedish	KFR09	1997-09-18	6701919,224	1632686,506	-83,745	1529	24,1	158	195	2790	223,2	126	-7,7	-64,9	18,26	0,08	0,56	0,21	0,08	0,08

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
62	Swedish	KFR09	1998-10-01	6701919,224	1632686,506	-83,745	1530	32,2	156	184	2810	224,8	122	-9	-59,2	16,9	0,08	0,57	0,18	0,08	0,08
63	Swedish	KFR09	1999-02-02	6701919,224	1632686,506	-83,745	1490	31,6	152	181	2670	213,6	129	-7,7	-64,9	16,1	0,08	0,60	0,18	0,08	0,08
64	Swedish	KFR09	2000-06-28				1480	34	146	206	2900	348	130	-8	-66,4	15,5	0,09	0,56	0,17	0,09	0,09
65	Swedish	KFR10	1989-04-04	6701920,866	1632691,252	-147,543	1670	10,5	214	882	4430	412	118	-7,9	-60,5	8,42	0,11	0,50	0,16	0,11	0,11
66	Swedish	KFR10	1989-12-27	6701920,866	1632691,252	-147,543	1650	16,2	184	800	4320	345,6	115	-8,4	-62,7	16,9	0,11	0,48	0,20	0,11	0,11
67	Swedish	KFR10	1990-06-15	6701920,866	1632691,252	-147,543	1610	18	194	781	4210	336,8	117	-8	-60,1	16,9	0,10	0,53	0,16	0,10	0,10
68	Swedish	KFR10	1990-12-27	6701920,866	1632691,252	-147,543	1600	16,2	202	805	4370	349,6	115	-9	-59,2	16,9	0,11	0,49	0,19	0,11	0,11
69	Swedish	KFR10	1992-01-10	6701920,866	1632691,252	-147,543	1570	15,3	187	723	4030	322,4	121	-8	-68,6	33,8	0,10	0,47	0,22	0,10	0,10
70	Swedish	KFR10	1999-02-02	6701920,866	1632691,252	-147,543	1580	13,2	185	690	3690	295,2	126	-15,2	-114,8	7,4	0,11	0,11	0,26	0,40	0,11
71	Swedish	KFR10	1999-09-30	6701920,866	1632691,252	-147,543	1570	32,2	181	703	3860	308,8	123	-7,8	-63,7	11,84	0,10	0,58	0,12	0,10	0,10
72	Swedish	KFR10	2000-06-22				1470	14,9	163	685	3850	416	131	-8,1	-65,9	7,1	0,11	0,45	0,23	0,11	0,11
73	Swedish	KFR10	2000-06-28				1560	15,7	173	727	3890	418	134	-8,1	-68,7	6,7	0,11	0,45	0,22	0,11	0,11
74	Swedish	KFR10	2000-06-30				1570	16,1	176	737	3910	407	133	-7,9	-71,1	6,3	0,11	0,45	0,22	0,11	0,11
75	Swedish	KFR10	2000-07-04				1550	16	175	740	3970	409	133	-7,9	-71,2	8	0,11	0,45	0,22	0,11	0,11
76	Swedish	KFR13	1995-06-27	6701911,302	1633086,25	-143,1	1129	3,9	79	923	3690	295,2	40	-15,2	-114,6	12,86	0,09	0,09	0,13	0,59	0,09
77	Swedish	KFR13	2000-06-29	6701911,302	1633086,25	-168,1	1330	5	91	1060	3990	218	74	-12,8	-103,9	1,8	0,10	0,10	0,32	0,36	0,10
78	Swedish	KFR13	2000-06-29	6701911,302	1633086,25	-189,9	1730	11	142	913	4430	319	98	-10	-81,9	2,3	0,13	0,22	0,39	0,13	0,13
79	Swedish	KFR19	1995-06-27	6701974,288	1633044,816	-58,239	1394	8,7	122	281	2880	230,4	114	-8,2	-65	17,72	0,08	0,43	0,33	0,08	0,08
80	Swedish	KFR19	1995-06-27	6701953,468	1633028,38	-65,495	1390	9,8	128	287	2890	231,2	116	-8,4	-64,4	17,66	0,08	0,43	0,32	0,08	0,08
81	Swedish	KFR19	2000-07-18	6701974,288	1633044,816	-58,239	1440	11,3	124	312	2790	329	117	-8,4	-73,6	16,5	0,10	0,37	0,34	0,10	0,10
82	Swedish	KFR19	1995-06-27	6701987,158	1633054,976	-53,753	1291	8	116	381	2930	234,4	111	-8,6	-67	17,42	0,08	0,39	0,36	0,08	0,08
83	Swedish	KFR19	2000-07-18	6701987,158	1633054,976	-53,753	1370	9,6	114	364	2810	308	114	-8,4	-69,3	18,14	0,09	0,38	0,35	0,09	0,09
84	Swedish	KFR55	2000-05-19	6701944,299	1633083,236	-128,466	1880	11,2	153	757	4170	349	111	-9,4	-78,1	9,98	0,13	0,28	0,34	0,13	0,13
85	Swedish	KFR55	2000-05-19	6701959,037	1633077,869	-131,629	1740	9,2	138	838	4040	307	101	-10,3	-86,4	10,76	0,13	0,18	0,44	0,13	0,13
86	Swedish	KFR55	1995-06-27	6701971,471	1633073,34	-134,297	1651	9,5	153	586	3861	308,9	82	-9	-70,6	11,834	0,11	0,34	0,32	0,11	0,11
87	Swedish	KFR55	2000-07-10	6701971,471	1633073,34	-134,297	1660	9,4	146	667	3900	346	108	-9,6	-78	5,5	0,12	0,27	0,37	0,12	0,12
88	Swedish	KFR56	2000-07-10	6702073,136	1633102,546	-64,62	1390	25,1	144	332	2840	328	128	-8,3	-68,2	17	0,09	0,49	0,23	0,09	0,09
89	Swedish	KFR7A	2000-07-18	6702031,018	1633104,511	-132,766	1650	20,4	166	471	3510	380	116	-9	-75,2	10,3	0,11	0,39	0,27	0,11	0,11
90	Swedish	KFR7A	1989-04-04	6702078,497	1633122,63	-134,541	1920	13,6	258	1130	5380	430	98	-9,2	-72,4	8,4	0,14	0,40	0,18	0,14	0,14
91	Swedish	KFR7A	1989-12-27	6702078,497	1633122,63	-134,541	1840	13,9	248	1004	5330	426,4	93	-9,1	-66	8,4	0,13	0,44	0,17	0,13	0,13
92	Swedish	KFR7A	1990-06-15	6702078,497	1633122,63	-134,541	1850	19,6	260	1040	5300	424	94	-9	-66,3	8,4	0,14	0,47	0,13	0,13	0,13
93	Swedish	KFR7A	1990-12-27	6702078,497	1633122,63	-134,541	1830	14,2	261	1040	5280	422,4	92	-9	-67,4	16,9	0,13	0,45	0,16	0,13	0,13
94	Swedish	KFR7A	1992-01-10	6702078,497	1633122,63	-134,541	1810	17,1	268	1040	5220	417,6	84	-9,3	-73,4	16,9	0,14	0,42	0,17	0,14	0,14
95	Swedish	KFR7A	1992-06-29	6702078,497	1633122,63	-134,541	1820	13,5	265	1020	5240	419,2	102	-9,2	-72,4	8,4	0,13	0,42	0,18	0,13	0,13
96	Swedish	KFR7A	1994-04-08	6702078,497	1633122,63	-134,541	1780	13,9	263	986	5190	415,2	96	-8,9	-69	3,86	0,13	0,45	0,16	0,13	0,13
97	Swedish	KFR7A	1995-01-05	6702078,497	1633122,63	-134,541	1780	16,5	265	955	5100	408	98	-8,8	-70,8	4,4	0,13	0,46	0,15	0,13	0,13
98	Swedish	KFR7A	1995-06-26	6702078,497	1633122,63	-134,541	1759	13,9	269	951	5056	404,48	93	-8,9	-69,7	4,664	0,13	0,46	0,16	0,13	0,13
99	Swedish	KFR7A	1996-01-05	6702078,497	1633122,63	-134,541	1740	14,3	270	930	4980	398,4	88	-8,1	-65,2	5,12	0,12	0,52	0,12	0,12	0,12
100	Swedish	KFR7A	1996-10-24	6702078,497	1633122,63	-134,541	1802,3	14,5	239	931	4850	388	92	-8,9	-73	5,9	0,13	0,41	0,20	0,13	0,13
101	Swedish	KFR7A	1997-09-18	6702078,497	1633122,63	-134,541	1760	14,2	242	878	4670	373,6	98	-8,5	-72,3	6,98	0,12	0,44	0,19	0,12	0,12
102	Swedish	KFR7A	1998-10-01	6702078,497	1633122,63	-134,541	1780	14,9	235	891	4590	367,2	88	-8,4	-70,3	7,46	0,12	0,45	0,18	0,12	0,12
103	Swedish	KFR7A	1999-09-30	6702078,497	1633122,63	-134,541	1760	14,9	229	887	4700	376	99	-8,7	-70,6	6,8	0,12	0,44	0,20	0,12	0,12
104	Swedish	KFR7A	2000-05-18				1880	16,8	215	860	4460	396	116	-8,7	-73,2	8,24	0,12	0,42	0,20	0,12	0,12
105	Swedish	KFR7A	2000-05-19				1660	14,3	211	798	4460	398	116	-8,7	-71,8	8,24	0,12	0,42	0,22	0,12	0,12
106	Swedish	KFR7A	2000-05-24				1760	14,5	225	842	4460	391	117	-8,6	-72,4	8,24	0,12	0,43	0,21	0,12	0,12
107	Swedish	KFR7A	2000-05-25				1780	14,7	227	852	4460	386	114	-8,6	-74,4	8,24	0,12	0,42	0,21	0,12	0,12
108	Swedish	KFR7C	2000-07-10				1650	15,9	150	570	3680	351	113	-9	-73,8	8	0,11	0,36	0,30	0,11	0,11
109	Swedish	Rain old					0,4	0,3	0,1	0,2	0,2	1,4	12,2	-12,3	-88	0	0,05	0,05	0,72	0,11	0,05
110	Swedish	Rain					0,4	0,3	0,1	0,2	0,2	1,4	12,2	-12,3	-88	22	0,05	0,05	0,73	0,11	0,05
111	Swedish	Rain60					0,4	0,3	0,1	0,2	0,2	1,4	12,2	-12,3	-88	2008	0,00	0,00	1,00	0,00	0,00
112	Swedish	Glacial					0,2	0,4	0,1	0,2	0,5	0,5	0,1	-21	-158	0	0,00	0,00	0,00	1,00	0,00
113	Swedish	Sea					1960	95	234	93,7	3760	503,4	90	-5,9	-53,3	42	0,49	0,34	0,05	0,05	0,05
114	Swedish	Modified Sea					2140	35,1	195	504	4490	111,5	760	-7,3	-60,3	17	0,00	1,00	0,00	0,00	0,00
115	Swedish	Brine					8200	45,5	2,1	19200	47200	904,9	14	-8,9	-44,9	0,2	0,00	0,00	0,00	0,00	1,00
116	Swedish	Litorina					3179,8	154,1	379,6	152	6100	527,3	146	-5	-35	0	1,00	0,00	0,00	0,00	0,00
117	Swedish	PROV 1b					0,1	0,4	0,1	0,1	0,5	0,3	0,1	-14,0	-102,0	0,0	0,04	0,04	0,57	0,30	0,04
118	Swedish	PROV 2b					0,2	0,4	0,1	0,2	0,5	0,5	0,1	-15,8	-116,4	0,0	0,03	0,03	0,43	0,48	0,03
119	Swedish	PROV 3b					0,1	0,4	0,1	0,1	0,5	0,3	0,1	-13,7	-99,6	0,0	0,05	0,05	0,60	0,27	0,05
120	Swedish	PROV 4b					0,1	0,4	0,1	0,2	0,5	0,6	0,2	-15,7	-115,6	0,0	0,03	0,03	0,43	0,47	0,03
121	Swedish	KKM08					0,8	0,2	0,6	2,0	0,5	5,0	8,0	-14,6	-106,6	30,0	0,04	0,04	0,53	0,35	0,04
122	Swedish	KKM13					1,0	0,7	0,5	3,0	0,5	6,0	9,0	-15,0	-110,3	25,0	0,04	0,04	0,50	0,39	0,04

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
123	Swedish	PROV 5b					0,3	0,3	0,1	0,5	0,7	0,9	1,1	-15,1	-110,8	0,0	0,04	0,04	0,48	0,41	0,04
124	Swedish	KLJ01					11,3	1,5	1,2	7,7	0,8	4,4	44,0	-13,8	-109,3	8,0	0,04	0,04	0,58	0,30	0,04
125	Swedish	KTA01					4,5	1,0	1,4	6,7	1,0	7,6	33,0	-13,9	-101,2	120,0	0,04	0,04	0,62	0,25	0,04
126	Swedish	KTA01					3,9	0,9	1,4	6,7	1,0	6,2	32,0	-13,7	-97,6	123,0	0,04	0,04	0,65	0,22	0,04
127	Swedish	KTA01					3,7	0,9	1,4	5,4	1,0	4,8	26,0	-13,6	-98,7	123,0	0,04	0,04	0,64	0,23	0,04
128	Swedish	KTA01					3,7	1,0	1,4	5,3	1,0	5,2	30,0	-13,6	-97,8	160,0	0,04	0,04	0,66	0,22	0,04
129	Swedish	KTA01					4,3	1,0	1,4	5,3	1,0	5,3	28,0	-13,7	-97,5	162,0	0,04	0,04	0,65	0,22	0,04
130	Swedish	KTA01					4,0	1,0	1,4	6,2	1,0	6,3	32,0	-13,8	-98,7	155,0	0,04	0,04	0,64	0,23	0,04
131	Swedish	KTA01					4,3	1,0	1,3	6,4	1,0	6,4	32,0	-13,8	-97,9	99,0	0,04	0,04	0,64	0,23	0,04
132	Swedish	KTA01					4,1	0,9	1,4	6,5	1,0	6,5	32,0	-13,6	-98,6	121,0	0,04	0,04	0,65	0,22	0,04
133	Swedish	KTA01					4,1	0,9	1,4	6,4	1,0	7,0	31,0	-13,8	-98,6	158,0	0,04	0,04	0,64	0,23	0,04
134	Swedish	KTA01					4,0	0,9	1,3	5,9	1,0	6,7	31,0	-13,8	-98,0	153,0	0,04	0,04	0,65	0,23	0,04
135	Swedish	KTA01					4,8	1,3	1,1	7,9	1,0	5,8	25,0	-13,7	-97,4	129,0	0,04	0,04	0,65	0,22	0,04
136	Swedish	KTA01					4,5	1,3	1,2	6,9	1,0	5,8	30,0	-13,6	-97,1	115,0	0,04	0,04	0,65	0,21	0,04
137	Swedish	KFJ07					37,0	3,3	2,0	11,0	1,0	0,5	160,0	-11,3	-80,7	3,0	0,04	0,18	0,71	0,04	0,04
138	Swedish	KFJ07					47,0	3,1	2,1	11,0	1,0	0,5	150,0	-11,2	-80,1	3,0	0,04	0,19	0,71	0,04	0,04
139	Swedish	KTA01					4,5	1,0	1,4	5,6	1,0	5,3	31,0	-13,8	-98,5	121,0	0,04	0,04	0,64	0,23	0,04
140	Swedish	KGI04					11,0	2,5	4,4	33,0	1,5	3,9	141,0	-12,9	-93,4	36,0	0,05	0,05	0,79	0,07	0,05
141	Swedish	KKM13					1,9	1,0	0,8	5,4	2,0	7,0	31,0	-13,6	-98,9	37,0	0,05	0,05	0,63	0,23	0,05
142	Swedish	KTA01					3,9	1,0	1,4	6,2	2,0	6,9	32,0	-13,6	-97,4	145,0	0,04	0,04	0,66	0,21	0,04
143	Swedish	KGI04					5,0	2,7	4,3	30,0	2,2	8,0	121,0	-12,9	-94,1	49,0	0,05	0,05	0,77	0,09	0,05
144	Swedish	KSV04					24,0	1,7	3,2	25,0	2,3	1,9	138,0	-12,5	-90,0	5,0	0,05	0,06	0,79	0,05	0,05
145	Swedish	KSV05					20,0	1,1	1,2	19,0	2,4	3,0	114,0	-12,8	-92,2	33,0	0,05	0,05	0,77	0,09	0,05
146	Swedish	KKM03					5,7	1,2	2,8	13,0	2,5	4,0	65,0	-13,7	-99,3	49,0	0,04	0,04	0,66	0,21	0,04
147	Swedish	KKM03					6,1	1,3	2,7	13,0	2,5	4,0	65,0	-13,8	-100,1	39,0	0,04	0,04	0,65	0,22	0,04
148	Swedish	KKM03					5,0	1,8	3,2	13,0	2,5	6,0	66,0	-13,8	-100,1	56,0	0,04	0,04	0,65	0,22	0,04
149	Swedish	KFJ07					48,0	3,9	2,1	11,0	3,0	0,5	160,0	-11,3	-80,3	3,0	0,04	0,19	0,71	0,04	0,04
150	Swedish	KFJ07					37,0	3,1	2,0	11,0	3,0	1,1	160,0	-11,2	-80,2	3,0	0,03	0,19	0,71	0,03	0,03
151	Swedish	KFJ07					46,0	3,6	2,0	10,0	3,0	0,5	150,0	-11,4	-81,4	3,0	0,04	0,17	0,72	0,04	0,04
152	Swedish	KFJ07					53,0	3,6	2,1	11,0	3,0	0,8	150,0	-11,4	-81,2	3,0	0,04	0,17	0,71	0,04	0,04
153	Swedish	KKM03					4,8	1,8	3,1	13,0	3,0	6,0	62,0	-13,8	-100,2	56,0	0,04	0,04	0,65	0,22	0,04
154	Swedish	KFJ07					55,0	3,8	2,1	11,0	4,0	0,5	160,0	-11,3	-80,4	3,0	0,04	0,19	0,71	0,04	0,04
155	Swedish	KFJ07					54,0	3,2	2,1	11,0	4,0	0,5	160,0	-11,4	-80,3	3,0	0,04	0,18	0,71	0,04	0,04
156	Swedish	KFJ07					52,0	3,0	2,0	11,0	4,0	0,5	190,0	-11,4	-80,6	3,0	0,03	0,19	0,71	0,03	0,03
157	Swedish	KFJ08					13,0	3,2	4,6	25,0	4,0	6,5	130,0	-11,2	-79,3	8,0	0,04	0,18	0,70	0,04	0,04
158	Swedish	KFJ08					14,0	2,9	4,0	26,0	4,0	5,0	130,0	-10,9	-77,8	10,0	0,04	0,20	0,69	0,04	0,04
159	Swedish	KGI02					48,0	2,2	2,7	10,0	4,1	0,6	161,0	-12,6	-90,4	3,0	0,05	0,07	0,79	0,05	0,05
160	Swedish	KGI02					50,0	2,2	1,9	11,0	4,6	0,1	158,0	-12,7	-92,7	3,0	0,05	0,05	0,80	0,05	0,05
161	Swedish	KGI02					49,0	2,2	2,4	9,5	4,7	0,5	163,0	-12,6	-90,1	3,0	0,05	0,07	0,79	0,05	0,05
162	Swedish	KGI02					50,0	2,3	2,6	10,0	4,8	1,0	161,0	-12,6	-90,9	3,0	0,05	0,06	0,79	0,05	0,05
163	Swedish	HBH02					11,5	2,3	1,9	15,4	5,0	13,2	63,0	-10,2	-77,1	59,0	0,04	0,20	0,68	0,04	0,04
164	Swedish	KFJ04					54,0	2,4	2,3	17,0	5,0	3,6	195,0	-11,5	-81,6	12,0	0,03	0,18	0,72	0,03	0,03
165	Swedish	KGI02					51,0	2,2	2,3	9,5	5,0	0,1	160,0	-12,4	-89,5	3,0	0,05	0,08	0,78	0,05	0,05
166	Swedish	KKM13					1,4	0,8	0,7	3,5	5,0	5,0	8,0	-14,9	-109,2	39,0	0,04	0,04	0,51	0,38	0,04
167	Swedish	KGI02					53,0	2,0	2,4	10,0	5,4	0,4	160,0	-12,7	-91,4	3,0	0,05	0,06	0,80	0,05	0,05
168	Swedish	KKL09					16,0	1,0	2,0	30,0	5,5	4,0	121,0	-11,9	-85,4	2,1	0,05	0,10	0,76	0,05	0,05
169	Swedish	HLX06					56,1	2,8	4,9	24,5	5,7	8,7	219,0	-10,6	-77,0	17,0	0,02	0,26	0,67	0,02	0,02
170	Swedish	HLX03					67,0	5,0	4,3	17,0	5,8	21,5	204,0	-10,9	-80,0	34,0	0,03	0,23	0,68	0,03	0,03
171	Swedish	HBH02					10,3	1,7	3,3	42,5	6,0	19,2	114,0	-9,7	-72,9	42,0	0,03	0,26	0,64	0,03	0,03
172	Swedish	KFJ04					65,0	3,0	2,2	15,0	6,0	7,0	218,0	-11,5	-81,8	9,0	0,03	0,20	0,71	0,03	0,03
173	Swedish	KKM13					18,0	1,6	0,6	106,0	6,0	240,0	13,0	-13,7	-99,8	9,0	0,06	0,06	0,48	0,34	0,06
174	Swedish	KSV04					35,0	0,7	1,9	17,0	7,0	0,8	126,0	-13,1	-95,4	3,0	0,05	0,05	0,75	0,12	0,05
175	Swedish	KSV05					3,0	0,6	1,9	8,0	7,0	4,7	28,0	-12,6	-90,8	36,0	0,05	0,05	0,71	0,13	0,05
176	Swedish	KSV05					3,0	0,6	1,3	8,0	7,0	4,8	50,0	-12,1	-86,8	37,0	0,05	0,05	0,77	0,07	0,05
177	Swedish	HBH02					6,7	1,4	3,3	27,5	7,8	18,7	77,0	-8,6	-64,8	20,0	0,03	0,34	0,58	0,03	0,03
178	Swedish	KGI04					49,0	0,9	1,0	9,0	7,9	0,3	133,0	-12,6	-89,7	5,0	0,05	0,05	0,80	0,05	0,05
179	Swedish	KFJ02					26,0	2,3	3,3	19,0	8,0	10,0	144,0	-11,3	-80,5	19,0	0,04	0,17	0,72	0,04	0,04
180	Swedish	KFJ02					33,0	2,6	3,4	21,0	8,0	0,2	170,0	-11,4	-80,8	3,0	0,03	0,18	0,71	0,03	0,03
181	Swedish	KFJ04					62,0	2,0	2,0	14,0	8,0	3,9	198,0	-11,7	-84,7	6,0	0,03	0,16	0,74	0,03	0,03
182	Swedish	KSV04					35,0	0,9	2,0	17,0	8,0	1,2	130,0	-13,0	-95,0	3,0	0,05	0,05	0,76	0,11	0,05
183	Swedish	HBH02					5,3	1,7	2,4	16,7	8,3	17,5	40,0	-8,5	-61,6	25,0	0,03	0,34	0,57	0,03	0,03

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
184	Swedish	KFJ04					38,0	2,7	3,9	28,0	9,0	7,0	196,0	-11,5	-82,6	21,0	0,03	0,18	0,72	0,03	0,03
185	Swedish	HKM20					8,1	1,7	2,6	11,0	9,0	3,0	81,0	-13,7	-99,8	22,0	0,04	0,04	0,67	0,20	0,04
186	Swedish	KSV04					40,0	0,8	1,7	13,0	9,0	0,8	127,0	-13,2	-95,3	3,0	0,05	0,05	0,74	0,12	0,05
187	Swedish	HBH02					5,6	1,0	5,6	17,9	9,2	15,1	65,0	-9,1	-65,6	12,0	0,03	0,31	0,60	0,03	0,03
188	Swedish	HBH02					5,3	1,0	4,0	16,7	9,6	15,4	65,0	-8,9	-70,8	25,0	0,03	0,29	0,62	0,03	0,03
189	Swedish	HBH02					6,4	1,4	3,3	25,1	9,9	20,6	70,0	-9,2	-66,0	29,0	0,03	0,30	0,61	0,03	0,03
190	Swedish	KFI01					44,0	2,5	7,5	59,0	10,0	1,0	314,0	-11,6	-87,0	38,0	0,02	0,21	0,73	0,02	0,02
191	Swedish	KSV05					3,0	0,5	1,6	9,0	10,0	5,5	47,0	-12,0	-86,0	36,0	0,05	0,05	0,78	0,06	0,05
192	Swedish	HBH02					5,4	1,1	2,2	16,3	10,3	15,2	64,0	-9,9	-62,6	23,0	0,03	0,29	0,62	0,03	0,03
193	Swedish	HBH02					6,2	1,3	3,4	20,8	10,4	18,4	70,0	-7,9	-63,6	17,0	0,02	0,37	0,56	0,02	0,02
194	Swedish	HBH02					5,5	1,0	3,1	17,1	10,6	16,2	53,0	-8,0	-64,9	20,0	0,03	0,35	0,57	0,03	0,03
195	Swedish	KFI01					45,0	2,5	7,0	61,0	11,0	1,0	320,0	-11,6	-88,0	40,0	0,02	0,21	0,73	0,02	0,02
196	Swedish	HKM20					8,7	1,6	2,4	11,0	11,0	2,0	59,0	-13,6	-99,1	28,0	0,05	0,05	0,66	0,21	0,05
197	Swedish	KKM13					19,0	5,8	3,9	145,0	11,0	300,0	23,0	-13,5	-97,9	28,0	0,07	0,07	0,48	0,31	0,07
198	Swedish	HLX03					76,0	5,1	3,9	15,0	11,0	21,0	210,0	-10,8	-80,0	25,0	0,03	0,24	0,67	0,03	0,03
199	Swedish	HBH05					15,4	2,6	4,0	38,4	11,2	23,0	137,0	-9,6	-75,3	25,0	0,03	0,27	0,64	0,03	0,03
200	Swedish	HBH01					8,6	2,3	4,0	41,3	11,3	24,5	137,0	-8,8	-67,3	34,0	0,02	0,35	0,59	0,02	0,02
201	Swedish	HBH05					16,6	2,5	4,3	39,2	11,7	22,3	143,0	-9,5	-75,8	34,0	0,03	0,28	0,64	0,03	0,03
202	Swedish	HBH05					19,2	3,0	3,8	38,5	12,0	21,5	162,0	-9,9	-68,4	22,0	0,02	0,31	0,62	0,02	0,02
203	Swedish	HBH02					6,4	1,2	2,8	21,4	12,1	17,8	55,0	-9,1	-63,3	37,0	0,03	0,31	0,60	0,03	0,03
204	Swedish	HLX06					92,0	2,0	2,3	12,3	12,1	23,5	249,0	-10,6	-77,0	17,0	0,02	0,27	0,67	0,02	0,02
205	Swedish	HBH02					5,4	1,2	3,7	20,9	12,4	15,7	63,0	-9,5	-62,5	16,0	0,03	0,31	0,60	0,03	0,03
206	Swedish	HBH02					6,2	1,4	3,2	25,9	12,8	20,9	74,0	-9,4	-71,7	18,0	0,03	0,26	0,63	0,03	0,03
207	Swedish	KFI01					50,0	2,7	7,0	60,0	13,0	1,0	322,0	-11,6	-90,0	50,0	0,02	0,20	0,74	0,02	0,02
208	Swedish	HBH02					21,1	1,7	3,2	34,5	13,5	24,3	137,0	-10,0	-71,7	42,0	0,03	0,27	0,64	0,03	0,03
209	Swedish	HAV05					117,0	3,0	3,0	14,0	14,0	62,0	265,0	-9,8	-71,8	11,0	0,02	0,34	0,61	0,02	0,02
210	Swedish	HAV05					144,0	3,0	2,0	12,0	15,0	97,0	271,0	-9,8	-67,1	1,0	0,02	0,37	0,58	0,02	0,02
211	Swedish	KKR01					39,0	3,2	8,0	40,0	15,0	4,2	223,0	-10,3	-78,0	3,0	0,02	0,28	0,66	0,02	0,02
212	Swedish	KKR01					40,0	3,1	8,0	40,0	15,0	4,2	224,0	-10,3	-78,0	3,0	0,02	0,28	0,66	0,02	0,02
213	Swedish	KKR01					39,0	3,2	8,0	40,0	15,0	3,6	224,0	-10,3	-78,0	3,0	0,02	0,28	0,66	0,02	0,02
214	Swedish	KKR01					40,0	3,1	9,0	40,0	15,0	3,6	224,0	-10,3	-78,0	3,0	0,02	0,28	0,66	0,02	0,02
215	Swedish	HBH02					8,0	1,3	4,9	28,4	17,7	18,2	79,0	-8,5	-65,7	24,0	0,03	0,34	0,58	0,03	0,03
216	Swedish	KFI01					56,0	2,9	7,5	59,0	18,0	1,0	325,0	-11,6	-88,0	46,0	0,02	0,22	0,73	0,02	0,02
217	Swedish	KKL02					27,0	1,1	1,0	30,0	18,0	0,1	134,0	-12,4	-88,8	3,0	0,05	0,06	0,79	0,05	0,05
218	Swedish	HLX01					32,5	2,2	4,9	37,8	18,1	47,8	115,0	-10,9	-81,0	34,0	0,04	0,17	0,70	0,04	0,04
219	Swedish	KKA03					17,0	2,9	12,0	130,0	19,0	170,0	272,0	-8,7	-59,6	103,0	0,01	0,46	0,51	0,01	0,01
220	Swedish	HBH02					11,9	2,6	3,6	45,0	19,1	19,9	142,0	-9,7	-72,9	42,0	0,03	0,28	0,64	0,03	0,03
221	Swedish	HBH05					19,4	2,7	4,5	40,4	19,9	16,6	165,0	-8,8	-65,1	22,0	0,02	0,38	0,57	0,02	0,02
222	Swedish	KKA03					17,0	2,7	9,5	127,0	20,0	160,0	265,0	-8,8	-59,0	77,0	0,01	0,45	0,52	0,01	0,01
223	Swedish	KKA03					19,0	2,8	7,5	129,0	21,0	160,0	271,0	-8,7	-59,6	99,0	0,01	0,45	0,52	0,01	0,01
224	Swedish	HAV06					107,0	2,6	1,0	9,7	22,0	45,0	231,0	-10,0	-73,4	1,0	0,02	0,31	0,63	0,02	0,02
225	Swedish	KFI07					94,0	1,4	5,5	36,0	23,0	7,0	333,0	-11,6	-87,0	13,0	0,02	0,22	0,73	0,02	0,02
226	Swedish	KKR01					57,0	3,3	9,5	28,0	23,0	1,5	227,0	-10,4	-77,0	3,0	0,02	0,29	0,65	0,02	0,02
227	Swedish	KKL02					41,0	1,5	1,0	16,0	25,0	0,1	99,0	-11,3	-80,5	13,0	0,04	0,14	0,73	0,04	0,04
228	Swedish	KKR01					57,0	3,3	8,0	30,0	25,0	2,7	231,0	-10,4	-77,0	3,0	0,02	0,29	0,65	0,02	0,02
229	Swedish	KKR01					57,0	3,1	8,5	28,0	25,0	2,7	231,0	-10,4	-77,0	3,0	0,02	0,29	0,65	0,02	0,02
230	Swedish	KKR01					58,0	3,1	9,0	27,0	25,0	3,6	231,0	-10,4	-77,0	3,0	0,02	0,29	0,65	0,02	0,02
231	Swedish	KLX02					67,6	3,4	4,5	25,5	25,5	29,8	201,0	-10,4	-76,5	8,4	0,03	0,27	0,65	0,03	0,03
232	Swedish	KLX02					67,3	3,5	4,7	25,3	26,2	30,6	198,0	-10,6	-75,3	16,1	0,03	0,26	0,66	0,03	0,03
233	Swedish	KLX02					67,7	3,5	4,7	25,6	26,5	31,2	202,0	-10,6	-76,2	12,7	0,03	0,26	0,66	0,03	0,03
234	Swedish	HBH05					25,4	2,6	8,8	42,6	27,6	36,6	172,0	-9,4	-64,7	24,0	0,02	0,36	0,58	0,02	0,02
235	Swedish	KLX02					69,5	3,4	4,6	26,2	28,0	32,1	204,0	-10,6	-75,5	8,4	0,03	0,26	0,66	0,03	0,03
236	Swedish	KLX02					67,4	3,4	4,5	25,3	28,0	29,8	200,0	-10,4	-75,5	8,4	0,03	0,27	0,65	0,03	0,03
237	Swedish	KLX02					67,6	3,4	4,5	25,9	28,0	30,0	209,0	-10,5	-76,6	19,4	0,03	0,26	0,66	0,03	0,03
238	Swedish	KLX02					68,2	3,5	4,5	25,5	28,3	29,8	200,0	-10,4	-76,0	17,7	0,03	0,27	0,65	0,03	0,03
239	Swedish	KLX02					68,8	3,4	4,5	28,3	34,0	31,2	202,0	-10,5	-75,5	15,2	0,03	0,27	0,65	0,03	0,03
240	Swedish	KLX02					72,9	3,4	4,5	27,4	34,5	33,6	205,0	-10,7	-76,4	7,6	0,03	0,25	0,66	0,03	0,03
241	Swedish	HAV06					127,0	1,6	1,4	11,0	36,0	71,0	228,0	-10,2	-70,1	1,0	0,02	0,31	0,62	0,02	0,02
242	Swedish	KKA04					54,0	3,2	15,0	85,0	36,0	110,0	296,0	-9,8	-71,0	60,0	0,01	0,37	0,59	0,01	0,01
243	Swedish	KKA04					53,0	3,2	16,0	85,0	36,0	110,0	293,0	-10,0	-70,0	61,0	0,02	0,37	0,59	0,02	0,02
244	Swedish	KFI01					88,0	2,8	6,5	50,0	37,0	1,0	350,0	-11,6	-87,0	40,0	0,01	0,23	0,72	0,01	0,01

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
245	Swedish	KKA04					53,0	3,1	18,0	75,0	37,0	118,0	293,0	-10,0	-69,0	58,0	0,02	0,37	0,58	0,02	0,02
246	Swedish	KKA04					55,0	3,2	15,0	85,0	37,0	110,0	290,0	-9,5	-71,0	48,0	0,01	0,38	0,58	0,01	0,01
247	Swedish	KKA04					57,0	3,3	17,0	78,0	37,0	110,0	295,0	-9,9	-71,0	60,0	0,02	0,37	0,59	0,02	0,02
248	Swedish	KKA04					55,0	3,3	17,0	86,0	38,0	110,0	295,0	-9,7	-67,6	41,0	0,01	0,39	0,57	0,01	0,01
249	Swedish	HLX01					141,0	3,0	1,9	11,5	40,9	63,8	233,0	-10,9	-79,0	17,0	0,03	0,23	0,67	0,03	0,03
250	Swedish	KKA04					58,0	3,2	17,0	80,0	41,0	112,0	295,0	-9,9	-71,0	59,0	0,02	0,37	0,59	0,02	0,02
251	Swedish	KKA04					58,0	3,2	17,0	80,0	41,0	112,0	295,0	-9,9	-71,0	58,0	0,02	0,37	0,59	0,02	0,02
252	Swedish	KKA04					58,0	3,2	17,0	80,0	41,0	112,0	295,0	-9,9	-71,0	60,0	0,02	0,37	0,59	0,02	0,02
253	Swedish	HLX01					137,0	2,9	2,1	10,7	42,3	59,1	232,0	-10,8	-79,0	25,0	0,03	0,24	0,67	0,03	0,03
254	Swedish	KKR01					80,0	3,7	6,5	22,0	44,0	9,6	222,0	-10,4	-83,0	3,0	0,03	0,24	0,68	0,03	0,03
255	Swedish	KKR01					80,0	3,3	7,0	22,0	44,0	7,2	222,0	-10,4	-83,0	3,0	0,03	0,24	0,68	0,03	0,03
256	Swedish	KKR01					82,0	3,4	6,5	22,0	45,0	8,1	223,0	-10,4	-83,0	3,0	0,03	0,24	0,68	0,03	0,03
257	Swedish	KLX02					77,0	3,5	4,3	29,1	45,0	36,6	205,0	-10,7	-75,4	7,6	0,03	0,26	0,66	0,03	0,03
258	Swedish	KKR01					82,0	3,5	7,0	21,0	47,0	8,1	222,0	-10,4	-83,0	3,0	0,03	0,24	0,68	0,03	0,03
259	Swedish	KKL01					48,0	0,9	2,3	14,4	48,0	1,3	80,0	-11,9	-85,2	6,5	0,05	0,08	0,77	0,05	0,05
260	Swedish	KLX02					73,4	3,4	4,3	38,9	60,0	35,4	205,0	-10,7	-75,1	12,7	0,03	0,26	0,66	0,03	0,03
261	Swedish	BFI01					24,0	3,2	6,3	76,0	61,0	8,3	220,0	-12,0	-88,2	36,0	0,03	0,14	0,75	0,03	0,03
262	Swedish	HAV07					135,0	2,0	2,0	18,0	63,0	68,0	258,0	-9,9	-71,2	1,0	0,02	0,33	0,61	0,02	0,02
263	Swedish	KLX02					87,0	3,5	4,3	31,5	63,8	40,1	205,0	-10,5	-75,9	5,1	0,03	0,26	0,65	0,03	0,03
264	Swedish	KFI04					165,0	2,8	4,0	22,0	72,0	25,0	397,0	-11,4	-85,0	13,0	0,01	0,27	0,70	0,01	0,01
265	Swedish	KFI04					165,0	2,7	4,0	22,0	72,0	29,0	395,0	-10,9	-85,0	14,0	0,01	0,29	0,68	0,01	0,01
266	Swedish	HAV07					139,0	2,0	2,0	21,0	73,0	69,0	257,0	-10,2	-73,3	2,0	0,02	0,30	0,63	0,02	0,02
267	Swedish	KLX02					111,0	3,1	4,6	24,0	73,0	43,0	223,0	-10,3	-73,4	5,9	0,02	0,29	0,63	0,02	0,02
268	Swedish	KFI04					170,0	2,8	4,0	24,0	74,0	30,0	390,0	-11,5	-81,0	11,0	0,01	0,28	0,68	0,01	0,01
269	Swedish	KFI04					165,0	2,9	4,0	22,0	75,0	29,0	395,0	-11,3	-85,0	13,0	0,01	0,27	0,69	0,01	0,01
270	Swedish	KFI04					170,0	2,8	4,0	22,0	75,0	29,0	393,0	-11,5	-85,0	14,0	0,01	0,26	0,70	0,01	0,01
271	Swedish	KFI04					170,0	2,8	4,0	22,0	75,0	19,0	393,0	-11,4	-85,0	10,0	0,01	0,27	0,70	0,01	0,01
272	Swedish	KFI04					170,0	2,7	4,0	22,0	75,0	19,0	393,0	-11,6	-85,0	13,0	0,01	0,26	0,70	0,01	0,01
273	Swedish	KLX02					97,4	3,5	4,3	33,8	82,5	43,7	202,0	-10,5	-76,3	12,7	0,03	0,26	0,65	0,03	0,03
274	Swedish	HAV04					202,0	4,0	3,0	13,0	106,0	71,0	290,0	-9,9	-79,7	1,0	0,02	0,31	0,63	0,02	0,02
275	Swedish	HAV04					215,0	4,0	3,0	14,0	108,0	76,0	300,0	-10,1	-73,5	8,0	0,02	0,34	0,61	0,02	0,02
276	Swedish	KLX02					110,0	4,3	4,3	38,6	109,0	48,8	202,0	-10,4	-76,1	15,2	0,03	0,27	0,64	0,03	0,03
277	Swedish	HAS05					237,0	4,0	6,0	25,0	119,0	118,0	370,0	-9,9	-73,8	2,0	0,01	0,38	0,58	0,01	0,01
278	Swedish	HAS05					228,0	4,0	4,0	27,0	123,0	118,0	373,0	-9,8	-68,7	1,0	0,01	0,41	0,56	0,01	0,01
279	Swedish	KLX02					120,0	3,7	4,3	39,3	123,0	52,4	200,0	-10,3	-76,3	11,8	0,03	0,27	0,64	0,03	0,03
280	Swedish	KFI04					210,0	3,1	9,5	23,0	124,0	46,0	389,0	-11,3	-83,0	6,0	0,01	0,28	0,67	0,01	0,01
281	Swedish	KFI04					225,0	3,0	4,0	25,0	127,0	44,0	386,0	-11,3	-80,4	6,0	0,01	0,29	0,67	0,01	0,01
282	Swedish	KFI04					225,0	3,1	5,5	24,0	133,0	48,0	390,0	-11,3	-80,4	7,0	0,01	0,29	0,67	0,01	0,01
283	Swedish	KLX02					130,0	3,8	4,3	43,4	140,0	56,6	200,0	-10,7	-74,6	4,2	0,03	0,26	0,65	0,03	0,03
284	Swedish	KLX02					134,0	3,9	4,3	45,7	146,0	58,1	202,0	-10,5	-75,1	5,9	0,03	0,26	0,64	0,03	0,03
285	Swedish	KLX02					137,0	3,9	4,4	54,1	149,0	61,1	220,0	-9,9	-74,4	8,4	0,03	0,30	0,62	0,03	0,03
286	Swedish	KFJ02					130,0	1,0	0,8	12,0	170,0	0,2	83,0	-14,1	-102,9	3,0	0,04	0,04	0,62	0,25	0,04
287	Swedish	KFI07					164,0	1,6	7,5	57,0	173,0	18,0	314,0	-11,8	-87,0	10,0	0,03	0,19	0,73	0,03	0,03
288	Swedish	KLX02					103,0	3,4	4,5	82,6	175,0	48,2	202,0	-10,4	-76,1	11,0	0,03	0,26	0,65	0,03	0,03
289	Swedish	KGI04					105,0	1,9	1,1	21,0	178,0	0,1	18,0	-13,6	-99,4	8,0	0,05	0,05	0,61	0,25	0,05
290	Swedish	KFI04					215,0	3,0	7,0	40,0	200,0	40,0	360,0	-11,7	-83,6	10,0	0,02	0,24	0,70	0,02	0,02
291	Swedish	HLX07					170,0	5,2	6,1	27,5	215,0	72,0	151,0	-10,5	-76,0	25,0	0,04	0,24	0,64	0,04	0,04
292	Swedish	1569_2					110,0	1,8	3,5	33,8	219,0	10,4	12,4	-15,5	-120,6	0,1	0,04	0,04	0,41	0,49	0,04
293	Swedish	KLX02					206,0	3,1	5,9	36,0	235,0	84,0	201,0	-10,6	-75,7	13,0	0,04	0,25	0,64	0,04	0,04
294	Swedish	KGI04					145,0	3,0	1,5	58,0	260,0	0,1	50,0	-13,8	-100,8	10,0	0,05	0,05	0,61	0,25	0,05
295	Swedish	KKR01					235,0	3,2	8,5	25,0	260,0	36,0	210,0	-10,7	-79,0	3,0	0,03	0,24	0,66	0,03	0,03
296	Swedish	HAS06					254,0	3,0	11,0	44,0	280,0	96,0	271,0	-10,2	-73,3	24,0	0,03	0,32	0,61	0,03	0,03
297	Swedish	KKR01					250,0	3,3	8,5	29,0	280,0	40,0	215,0	-10,7	-79,0	3,0	0,03	0,24	0,66	0,03	0,03
298	Swedish	KKR01					250,0	3,3	8,0	29,0	280,0	39,0	215,0	-10,7	-79,0	3,0	0,03	0,24	0,66	0,03	0,03
299	Swedish	KKR01					250,0	3,2	7,5	29,0	280,0	38,0	215,0	-10,7	-79,0	3,0	0,03	0,24	0,66	0,03	0,03
300	Swedish	KFI07					195,0	1,7	13,0	96,0	320,0	32,0	300,0	-11,8	-88,0	11,0	0,03	0,18	0,73	0,03	0,03
301	Swedish	HBH01					262,9	3,2	14,3	81,0	348,0	104,2	319,0	-9,8	-68,6	14,4	0,02	0,39	0,56	0,02	0,02
302	Swedish	HBH01					260,5	3,3	14,3	82,1	352,0	105,0	311,0	-9,8	-68,5	14,4	0,02	0,38	0,56	0,02	0,02
303	Swedish	KFI07					224,0	1,8	16,0	107,0	380,0	35,0	292,0	-11,8	-88,0	11,0	0,03	0,18	0,72	0,03	0,03
304	Swedish	HLX07					430,0	5,6	9,2	42,0	440,0	260,0	200,0	-10,8	-78,0	8,4	0,06	0,21	0,61	0,06	0,06
305	Swedish	HBH01					305,0	4,6	17,8	97,6	450,0	114,2	315,0	-9,5	-67,8	25,0	0,02	0,41	0,54	0,02	0,02

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
306	Swedish	HBH01					349,0	5,1	19,1	115,0	461,0	104,7	309,0	-9,7	-71,8	22,0	0,02	0,38	0,56	0,02	0,02
307	Swedish	HBH01					304,0	4,0	15,8	94,3	476,0	123,0	305,0	-9,9	-75,1	25,0	0,03	0,34	0,59	0,03	0,03
308	Swedish	HBH01					312,0	5,0	16,8	98,2	484,0	125,0	311,0	-9,8	-71,4	14,0	0,02	0,37	0,56	0,02	0,02
309	Swedish	KR0012B					346,6	3,4	17,4	100,1	500,0	125,6	325,0	-9,8	-68,1	25,3	0,02	0,39	0,55	0,02	0,02
310	Swedish	KAS04					382,0	2,4	6,2	91,0	508,0	180,0	222,0	-11,0	-84,8	4,3	0,06	0,16	0,67	0,06	0,06
311	Swedish	HBH01					346,0	5,0	20,2	113,0	515,0	124,6	310,0	-9,5	-73,2	16,0	0,02	0,37	0,55	0,02	0,02
312	Swedish	HBH01					321,0	4,3	21,3	108,0	519,0	129,0	299,0	-9,9	-71,0	22,0	0,03	0,36	0,56	0,03	0,03
313	Swedish	HBH01					348,0	5,0	20,5	115,0	529,0	125,8	311,0	-9,5	-63,9	26,0	0,02	0,43	0,52	0,02	0,02
314	Swedish	KR0012B					343,9	3,5	17,9	100,2	531,8	128,7	326,0	-9,6	-67,9	30,4	0,02	0,40	0,54	0,02	0,02
315	Swedish	KR0015B					357,7	2,5	19,0	123,5	534,6	97,0	422,0	-9,7	-69,2	28,7	0,00	0,44	0,55	0,00	0,00
316	Swedish	KAS13					350,0	4,6	11,4	83,0	543,0	112,0	294,0	-11,1	-83,4	17,0	0,04	0,23	0,66	0,04	0,04
317	Swedish	KFI07					280,0	2,2	18,0	145,0	545,0	51,0	278,0	-12,0	-89,0	10,0	0,04	0,16	0,72	0,04	0,04
318	Swedish	KLX02					288,0	4,5	10,6	123,0	548,0	105,0	111,0	-10,9	-78,7	8,4	0,06	0,17	0,66	0,06	0,06
319	Swedish	KFI07					275,0	2,1	14,0	149,0	555,0	47,0	277,0	-11,9	-89,0	11,0	0,04	0,15	0,73	0,04	0,04
320	Swedish	KFI07					275,0	2,0	17,0	142,0	555,0	49,0	278,0	-11,9	-89,0	8,0	0,04	0,16	0,72	0,04	0,04
321	Swedish	HAS03					335,0	14,0	36,0	80,0	574,0	98,0	235,0	-10,8	-76,4	33,0	0,04	0,32	0,56	0,04	0,04
322	Swedish	KAV01					255,0	4,7	21,0	156,0	575,0	43,0	186,0	-10,6	-78,6	19,0	0,04	0,24	0,64	0,04	0,04
323	Swedish	HBH01					356,0	5,5	19,7	118,0	598,0	128,5	292,0	-10,0	-68,0	14,0	0,03	0,37	0,55	0,03	0,03
324	Swedish	HAS03					336,0	12,0	39,0	87,0	608,0	104,0	235,0	-10,9	-80,5	35,0	0,04	0,29	0,59	0,04	0,04
325	Swedish	KR0012B					381,3	4,5	21,7	109,5	608,4	129,8	308,0	-9,4	-68,8	16,9	0,02	0,40	0,53	0,02	0,02
326	Swedish	HBH01					361,0	3,7	19,9	120,0	610,0	128,0	291,0	-9,9	-70,1	15,0	0,03	0,36	0,56	0,03	0,03
327	Swedish	KR0012B					387,0	4,3	20,4	118,0	619,0	134,5	324,0	-9,6	-69,6	34,0	0,02	0,39	0,54	0,02	0,02
328	Swedish	KR0012B					375,3	4,5	23,2	115,9	642,4	119,6	295,0	-9,5	-66,7	42,0	0,02	0,40	0,53	0,02	0,02
329	Swedish	KR0012B					403,0	4,8	19,1	120,0	645,0	130,0	316,0	-9,9	-74,1	27,0	0,03	0,35	0,57	0,03	0,03
330	Swedish	KR0015B					404,0	2,8	23,1	146,0	646,0	120,0	427,0	-9,9	-73,9	7,6	0,01	0,40	0,56	0,01	0,01
331	Swedish	HBH01					369,0	5,0	21,4	130,0	654,0	140,0	294,0	-9,7	-72,4	9,3	0,03	0,36	0,55	0,03	0,03
332	Swedish	KR0012B					406,0	4,5	18,6	118,0	662,0	143,0	307,0	-9,9	-75,1	18,0	0,03	0,34	0,57	0,03	0,03
333	Swedish	KR0012B					411,0	4,5	20,1	126,0	665,0	137,0	317,0	-9,6	-74,1	21,0	0,03	0,36	0,56	0,03	0,03
334	Swedish	KFI07					390,0	2,9	18,0	114,0	665,0	71,0	233,0	-11,7	-90,0	3,0	0,05	0,14	0,71	0,05	0,05
335	Swedish	KR0012B					352,0	2,0	15,4	143,0	695,0	70,0	198,0	-11,4	-82,1	34,0	0,05	0,17	0,69	0,05	0,05
336	Swedish	KR0012B					424,0	4,3	25,1	136,0	710,0	142,0	315,0	-9,9	-72,0	17,0	0,03	0,36	0,55	0,03	0,03
337	Swedish	KR0015B					403,4	3,2	19,1	141,0	729,0	129,0	409,0	-10,1	-73,7	19,0	0,02	0,38	0,57	0,02	0,02
338	Swedish	HBH01					391,0	5,6	23,7	144,0	737,0	136,0	288,0	-9,6	-76,7	25,0	0,03	0,34	0,56	0,03	0,03
339	Swedish	HBH01					390,0	5,7	22,8	144,0	739,0	138,0	291,0	-9,7	-73,8	9,3	0,03	0,35	0,55	0,03	0,03
340	Swedish	KR0015B					481,0	3,7	25,1	179,0	755,0	131,8	417,0	-10,2	-71,4	13,0	0,02	0,40	0,55	0,02	0,02
341	Swedish	KR0015B					458,0	3,5	22,6	168,0	760,0	120,0	415,0	-10,1	-72,9	8,4	0,02	0,39	0,56	0,02	0,02
342	Swedish	KR0012B					453,0	5,0	22,3	144,0	780,0	124,0	306,0	-9,9	-68,1	12,0	0,03	0,38	0,54	0,03	0,03
343	Swedish	KR0012B					445,0	5,1	22,7	146,0	789,0	128,0	306,0	-9,7	-69,2	15,0	0,03	0,38	0,54	0,03	0,03
344	Swedish	KR0015B					455,0	3,0	22,6	169,0	792,0	122,0	415,0	-10,1	-69,6	17,0	0,01	0,41	0,55	0,01	0,01
345	Swedish	KR0015B					511,0	3,8	27,3	189,0	805,0	134,0	415,0	-10,1	-77,6	19,0	0,02	0,37	0,57	0,02	0,02
346	Swedish	HBH01					421,0	5,7	27,0	162,0	812,0	134,0	286,0	-9,8	-76,9	17,0	0,03	0,33	0,57	0,03	0,03
347	Swedish	KR0012B					452,0	5,2	23,8	155,0	823,0	127,0	306,0	-9,8	-72,9	9,3	0,03	0,36	0,55	0,03	0,03
348	Swedish	BFI01					420,0	6,1	24,0	170,0	830,0	102,0	250,0	-11,6	-85,2	5,0	0,05	0,19	0,66	0,05	0,05
349	Swedish	HBH01					420,0	7,1	26,5	163,0	833,0	137,5	280,0	-9,7	-78,1	17,0	0,04	0,33	0,56	0,04	0,04
350	Swedish	KR0012B					452,0	4,2	23,3	153,0	835,0	157,0	304,0	-9,8	-72,9	20,0	0,03	0,35	0,55	0,03	0,03
351	Swedish	KR0012B					461,0	4,5	23,7	156,0	840,0	142,0	311,0	-9,8	-71,9	11,0	0,03	0,36	0,55	0,03	0,03
352	Swedish	HBH01					434,0	6,4	26,8	169,0	843,0	142,0	280,0	-10,2	-77,8	25,0	0,04	0,31	0,58	0,04	0,04
353	Swedish	KR0015B					481,7	3,0	27,7	176,7	851,0	132,2	389,0	-9,8	-69,7	32,1	0,02	0,41	0,54	0,02	0,02
354	Swedish	HBH01					426,0	4,8	26,1	166,0	869,0	132,7	270,0	-10,3	-78,3	17,0	0,04	0,29	0,59	0,04	0,04
355	Swedish	KR0012B					468,0	4,3	24,7	163,0	876,0	137,0	307,0	-9,7	-72,4	18,0	0,03	0,36	0,55	0,03	0,03
356	Swedish	KR0015B					477,0	3,3	25,1	186,0	876,0	140,0	396,0	-10,1	-82,3	25,0	0,03	0,33	0,60	0,03	0,03
357	Swedish	KR0015B					496,0	3,0	26,8	187,0	878,0	126,0	408,0	-10,2	-76,7	21,0	0,02	0,36	0,58	0,02	0,02
358	Swedish	KR0012B					471,0	5,0	21,7	159,0	888,0	148,0	302,0	-9,1	-72,3	4,2	0,03	0,38	0,53	0,03	0,03
359	Swedish	KR0015B					452,5	3,2	29,2	159,0	889,9	121,4	309,0	-9,7	-71,8	61,7	0,03	0,37	0,55	0,03	0,03
360	Swedish	KR0015B					490,0	3,3	25,1	185,0	895,0	137,0	404,0	-10,7	-81,4	25,0	0,03	0,31	0,61	0,03	0,03
361	Swedish	KR0015B					487,0	3,5	23,2	190,0	895,0	139,0	400,0	-10,1	-76,4	11,0	0,02	0,36	0,57	0,02	0,02
362	Swedish	KR0015B					488,0	3,8	25,7	185,0	895,0	165,0	403,0	-10,1	-75,8	15,0	0,02	0,37	0,56	0,02	0,02
363	Swedish	KR0015B					499,0	3,8	26,4	189,0	901,0	142,0	404,0	-10,1	-75,2	14,0	0,02	0,37	0,56	0,02	0,02
364	Swedish	KR0012B					410,0	2,0	22,0	200,0	915,0	62,0	185,0	-11,5	-83,2	25,0	0,05	0,16	0,69	0,05	0,05
365	Swedish	KAS08					450,0	4,0	18,9	164,0	918,0	87,0	237,0	-11,5	-89,4	8,0	0,05	0,15	0,69	0,05	0,05
366	Swedish	KR0012B					478,0	5,3	25,7	171,0	918,0	141,4	301,0	-9,8	-78,7	17,0	0,04	0,32	0,57	0,04	0,04

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
367	Swedish	KR0015B					491,0	3,1	26,0	190,0	924,0	148,0	400,0	-10,3	-81,0	17,0	0,03	0,33	0,59	0,03	0,03
368	Swedish	HBH01					441,0	5,0	30,2	180,0	932,0	130,0	260,0	-10,7	-79,3	17,0	0,04	0,26	0,61	0,04	0,04
369	Swedish	KR0012B					475,0	5,0	22,9	168,0	932,0	150,0	299,0	-9,8	-72,4	10,0	0,03	0,35	0,55	0,03	0,03
370	Swedish	KR0012B					486,0	4,8	27,1	178,0	934,0	140,0	296,0	-9,7	-78,5	25,0	0,04	0,32	0,57	0,04	0,04
371	Swedish	KR0012B					497,0	5,0	27,9	186,0	970,0	176,0	292,0	-9,9	-79,9	17,0	0,04	0,30	0,57	0,04	0,04
372	Swedish	KR0015B					578,5	3,6	36,8	207,1	977,1	140,3	346,0	-9,6	-70,8	8,5	0,03	0,40	0,52	0,03	0,03
373	Swedish	KR0012B					513,0	5,5	29,1	191,0	1000,0	132,0	280,0	-9,8	-80,3	17,0	0,04	0,30	0,58	0,04	0,04
374	Swedish	KR0012B					503,0	5,5	28,3	187,0	1010,0	133,0	292,0	-9,8	-81,1	17,0	0,04	0,30	0,58	0,04	0,04
375	Swedish	KR0012B					510,0	7,0	28,0	187,0	1020,0	148,0	280,0	-9,9	-79,4	17,0	0,04	0,31	0,57	0,04	0,04
376	Swedish	KR0015B					504,0	3,1	26,5	207,0	1020,0	133,0	360,0	-10,5	-78,9	34,0	0,03	0,31	0,60	0,03	0,03
377	Swedish	KR0012B					522,0	4,5	29,6	196,0	1040,0	147,0	280,0	-10,4	-80,5	17,0	0,04	0,27	0,60	0,04	0,04
378	Swedish	KR0015B					527,0	4,6	28,2	210,0	1040,0	145,0	390,0	-10,2	-81,9	17,0	0,03	0,33	0,58	0,03	0,03
379	Swedish	KR0015B					520,0	3,7	27,9	205,0	1040,0	147,0	393,0	-7,9	-68,2	8,0	0,01	0,50	0,46	0,01	0,01
380	Swedish	HBH01					482,0	5,8	34,3	211,0	1056,0	126,0	243,0	-10,3	-75,8	34,0	0,04	0,30	0,57	0,04	0,04
381	Swedish	KR0012B					526,0	4,5	29,5	200,0	1070,0	141,0	280,0	-10,4	-80,2	8,0	0,04	0,27	0,60	0,04	0,04
382	Swedish	HBH01					494,0	5,9	34,8	224,0	1080,0	131,8	237,0	-10,1	-74,7	42,0	0,04	0,31	0,56	0,04	0,04
383	Swedish	KR0012B					516,0	5,5	28,5	195,0	1080,0	143,0	280,0	-10,3	-78,3	17,0	0,04	0,29	0,58	0,04	0,04
384	Swedish	KR0015B					566,0	3,9	32,9	210,0	1080,0	148,3	389,0	-9,8	-71,7	28,0	0,02	0,40	0,53	0,02	0,02
385	Swedish	KLX02					327,0	3,7	4,6	397,0	1080,0	125,5	181,0	-10,7	-77,8	13,5	0,06	0,19	0,64	0,06	0,06
386	Swedish	KR0012B					539,0	4,9	31,1	206,0	1110,0	140,0	260,0	-10,3	-81,1	17,0	0,05	0,26	0,60	0,05	0,05
387	Swedish	KR0015B					553,0	3,1	31,5	233,0	1120,0	138,0	360,0	-10,6	-82,2	17,0	0,04	0,29	0,61	0,04	0,04
388	Swedish	KR0015B					558,0	3,5	32,4	238,0	1120,0	140,0	370,0	-10,7	-82,4	17,0	0,04	0,29	0,60	0,04	0,04
389	Swedish	KR0015B					552,0	4,0	30,8	229,0	1120,0	146,0	380,0	-10,7	-82,6	25,0	0,03	0,29	0,60	0,03	0,03
390	Swedish	KR0012B					540,0	4,7	31,9	213,0	1130,0	147,0	260,0	-10,2	-77,5	25,0	0,05	0,29	0,58	0,05	0,05
391	Swedish	KR0012B					527,0	4,6	31,1	206,0	1130,0	139,0	270,0	-10,4	-79,7	17,0	0,05	0,27	0,59	0,05	0,05
392	Swedish	KR0015B					562,0	3,2	31,8	235,0	1130,0	141,0	370,0	-10,9	-81,3	17,0	0,04	0,28	0,61	0,04	0,04
393	Swedish	KR0015B					531,0	3,3	30,4	228,0	1140,0	129,4	348,0	-10,5	-83,6	42,0	0,04	0,28	0,61	0,04	0,04
394	Swedish	KR0015B					578,0	3,2	30,6	247,0	1150,0	129,1	342,0	-10,7	-81,9	25,0	0,04	0,27	0,61	0,04	0,04
395	Swedish	SA1680A					606,0	5,9	26,9	171,0	1160,0	166,0	237,0	-10,4	-77,4	7,6	0,05	0,26	0,58	0,05	0,05
396	Swedish	KR0015B					589,0	4,1	35,2	245,0	1170,0	162,0	380,0	-10,2	-80,6	17,0	0,03	0,33	0,57	0,03	0,03
397	Swedish	HBH01					487,0	6,7	37,6	257,0	1200,0	130,0	222,0	-10,0	-74,7	34,0	0,05	0,31	0,55	0,05	0,05
398	Swedish	KAS03					613,0	2,4	21,0	162,0	1220,0	31,1	61,0	-15,8	-124,8	0,1	0,04	0,04	0,33	0,53	0,04
399	Swedish	KR0015B					562,0	3,2	31,1	229,0	1250,0	145,0	370,0	-10,6	-82,3	17,0	0,04	0,29	0,60	0,04	0,04
400	Swedish	KR0012B					572,0	4,9	34,9	235,0	1270,0	125,0	250,0	-11,0	-76,8	34,0	0,05	0,26	0,60	0,05	0,05
401	Swedish	KR0015B					602,0	4,0	36,9	254,0	1270,0	145,0	376,0	-10,1	-76,3	8,4	0,03	0,36	0,55	0,03	0,03
402	Swedish	PROV 6b					713,2	26,3	85,6	26,3	1290,0	176,4	11,0	-14,1	-102,8	0,0	0,10	0,10	0,47	0,23	0,10
403	Swedish	KR0012B					597,0	5,1	36,9	255,0	1290,0	131,2	248,0	-9,9	-80,5	34,0	0,05	0,28	0,58	0,05	0,05
404	Swedish	KR0012B					591,0	5,2	37,2	252,0	1300,0	138,7	250,0	-10,3	-77,6	51,0	0,05	0,28	0,58	0,05	0,05
405	Swedish	KR0015B					635,0	3,7	38,5	279,0	1300,0	144,0	360,0	-10,8	-80,1	17,0	0,04	0,29	0,59	0,04	0,04
406	Swedish	KR0012B					604,0	4,9	37,7	268,0	1330,0	134,2	245,0	-10,2	-77,3	25,0	0,05	0,28	0,57	0,05	0,05
407	Swedish	KR0012B					629,0	5,0	37,8	280,0	1360,0	133,6	243,0	-10,2	-76,4	25,0	0,05	0,29	0,57	0,05	0,05
408	Swedish	KR0013B					619,5	4,0	47,1	269,9	1458,9	125,5	267,0	-9,5	-70,6	71,0	0,04	0,37	0,52	0,04	0,04
409	Swedish	KR0015B					641,0	3,7	40,4	296,0	1480,0	133,3	327,0	-10,4	-81,1	25,0	0,04	0,29	0,58	0,04	0,04
410	Swedish	KR0015B					720,0	4,0	48,6	345,0	1500,0	146,8	320,0	-10,6	-80,7	25,0	0,05	0,28	0,58	0,05	0,05
411	Swedish	BFI01					650,0	8,7	41,0	320,0	1500,0	140,0	260,0	-11,7	-85,7	3,0	0,06	0,19	0,62	0,06	0,06
412	Swedish	KR0013B					715,7	4,2	52,2	308,5	1520,9	142,7	273,0	-9,3	-69,8	17,7	0,04	0,39	0,49	0,04	0,04
413	Swedish	SA1680B					657,0	4,9	30,6	217,0	1560,0	178,0	224,0	-10,7	-85,5	17,0	0,06	0,19	0,62	0,06	0,06
414	Swedish	SA1696B					693,0	5,8	33,3	285,0	1560,0	169,0	213,0	-11,0	-84,0	5,1	0,07	0,18	0,61	0,07	0,07
415	Swedish	HAS07					669,0	5,0	48,0	347,0	1650,0	122,0	102,0	-11,2	-81,2	1,0	0,08	0,15	0,62	0,08	0,08
416	Swedish	KR0013B					721,0	4,5	47,7	330,0	1650,0	123,0	315,0	-10,0	-70,8	9,3	0,04	0,37	0,52	0,04	0,04
417	Swedish	KR0013B					736,0	3,7	49,5	342,0	1680,0	146,0	313,0	-9,9	-74,6	14,0	0,04	0,34	0,53	0,04	0,04
418	Swedish	KR0013B					734,0	4,6	50,6	343,0	1690,0	127,0	309,0	-9,9	-74,6	14,0	0,04	0,35	0,53	0,04	0,04
419	Swedish	KR0013B					751,0	4,7	51,6	351,0	1690,0	126,0	305,0	-9,9	-67,9	10,0	0,04	0,39	0,50	0,04	0,04
420	Swedish	KR0013B					740,0	4,0	53,5	343,0	1690,0	134,0	311,0	-9,9	-72,8	19,0	0,04	0,36	0,52	0,04	0,04
421	Swedish	KLX01					860,0	6,1	18,0	223,0	1700,0	106,0	78,0	-12,2	-94,5	8,0	0,08	0,08	0,58	0,19	0,08
422	Swedish	KR0013B					735,0	4,2	49,8	328,8	1710,0	144,0	307,0	-10,0	-75,9	15,0	0,04	0,33	0,54	0,04	0,04
423	Swedish	KR0013B					769,0	4,7	52,2	346,0	1720,0	148,0	307,0	-9,8	-72,2	47,0	0,04	0,36	0,51	0,04	0,04
424	Swedish	KR0013B					737,0	4,1	54,5	324,2	1737,2	148,0	291,0	-9,4	-68,3	21,1	0,04	0,40	0,48	0,04	0,04
425	Swedish	HAS07					656,0	5,0	55,0	361,0	1740,0	116,0	106,0	-11,4	-83,4	1,0	0,08	0,14	0,63	0,08	0,08
426	Swedish	KR0013B					745,0	4,5	48,0	360,0	1740,0	143,0	307,0	-9,9	-74,6	14,0	0,04	0,34	0,53	0,04	0,04
427	Swedish	KR0013B					740,0	4,7	51,1	353,0	1740,0	137,0	308,0	-9,9	-73,2	5,9	0,04	0,36	0,52	0,04	0,04

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
428	Swedish	KR0013B					742,0	3,9	50,9	359,0	1750,0	145,0	305,0	-9,7	-80,0	25,0	0,05	0,32	0,54	0,05	0,05
429	Swedish	HAS06					900,0	12,0	56,0	297,0	1760,0	283,0	155,0	-9,4	-66,6	11,0	0,07	0,35	0,43	0,07	0,07
430	Swedish	KR0013B					743,0	4,0	50,5	347,0	1790,0	128,0	310,0	-9,9	-72,7	26,0	0,04	0,36	0,52	0,04	0,04
431	Swedish	KR0013B					784,8	4,1	56,5	339,3	1790,0	147,2	289,0	-9,7	-68,7	27,0	0,04	0,38	0,49	0,04	0,04
432	Swedish	KR0013B					749,0	4,0	52,7	365,0	1800,0	147,0	299,0	-9,8	-80,1	25,0	0,05	0,31	0,55	0,05	0,05
433	Swedish	KR0013B					764,0	4,4	54,7	378,0	1840,0	148,0	300,0	-9,9	-80,2	17,0	0,05	0,31	0,54	0,05	0,05
434	Swedish	KR0013B					830,6	4,5	57,0	384,0	1870,0	147,4	297,0	-9,7	-75,8	19,0	0,05	0,34	0,51	0,05	0,05
435	Swedish	KR0013B					776,0	4,7	55,0	378,0	1880,0	135,0	299,0	-9,9	-81,9	8,0	0,05	0,30	0,55	0,05	0,05
436	Swedish	KR0013B					795,0	5,8	55,3	386,0	1900,0	146,0	290,0	-10,0	-80,0	17,0	0,05	0,31	0,54	0,05	0,05
437	Swedish	KR0013B					802,0	4,9	59,1	398,0	1920,0	146,0	290,0	-9,9	-81,1	8,0	0,05	0,30	0,54	0,05	0,05
438	Swedish	KR0013B					793,0	4,6	51,9	384,0	1920,0	145,0	293,0	-9,9	-75,7	4,2	0,05	0,33	0,52	0,05	0,05
439	Swedish	SA0158A					852,8	15,5	104,2	239,9	1942,8	253,0	245,0	-8,8	-63,1	22,8	0,05	0,51	0,33	0,05	0,05
440	Swedish	KAV01					750,0	7,4	42,0	440,0	1970,0	118,0	81,0	-10,9	-80,3	13,0	0,08	0,15	0,60	0,08	0,08
441	Swedish	KR0013B					806,0	6,3	57,7	405,0	1990,0	148,0	290,0	-10,4	-81,3	17,0	0,06	0,28	0,55	0,06	0,06
442	Swedish	KR0013B					860,0	4,8	64,0	403,0	2010,0	153,4	298,0	-9,8	-70,7	24,0	0,05	0,37	0,49	0,05	0,05
443	Swedish	KR0013B					831,0	4,0	58,8	413,0	2020,0	153,0	280,0	-10,3	-80,0	17,0	0,06	0,28	0,55	0,06	0,06
444	Swedish	KR0013B					821,0	4,0	58,2	413,0	2040,0	150,0	280,0	-10,3	-80,6	17,0	0,06	0,28	0,55	0,06	0,06
445	Swedish	KLX01					1040,0	6,2	28,0	243,0	2050,0	48,0	83,0	-11,5	-89,9	8,0	0,08	0,08	0,64	0,11	0,08
446	Swedish	KR0013B					836,0	4,1	61,0	424,0	2110,0	149,0	270,0	-10,3	-79,8	8,0	0,06	0,28	0,55	0,06	0,06
447	Swedish	KR0013B					848,0	4,0	61,9	433,0	2130,0	148,0	270,0	-10,4	-80,0	8,0	0,06	0,27	0,55	0,06	0,06
448	Swedish	KR0013B					851,0	4,1	64,0	440,0	2150,0	136,0	260,0	-10,4	-80,1	25,0	0,06	0,27	0,55	0,06	0,06
449	Swedish	KAS13					894,0	10,9	44,2	408,0	2160,0	190,0	188,0	-11,9	-92,2	8,0	0,09	0,10	0,63	0,09	0,09
450	Swedish	KR0013B					888,0	6,4	65,7	466,0	2290,0	140,0	260,0	-10,5	-78,9	34,0	0,06	0,28	0,54	0,06	0,06
451	Swedish	1569_1					1190,0	5,8	37,1	297,0	2318,0	62,6	111,8	-16,6	-125,7	0,1	0,06	0,06	0,24	0,58	0,06
452	Swedish	KR0013B					926,0	4,5	70,3	502,0	2340,0	142,6	245,0	-10,1	-77,8	34,0	0,06	0,29	0,52	0,06	0,06
453	Swedish	KR0013B					913,0	6,3	71,3	490,0	2340,0	148,6	250,0	-10,1	-77,2	34,0	0,06	0,31	0,51	0,06	0,06
454	Swedish	SA1693F					941,0	5,4	38,9	489,0	2400,0	219,0	160,0	-12,0	-90,3	4,2	0,09	0,09	0,58	0,14	0,09
455	Swedish	KAS06					945,0	5,5	48,8	484,0	2450,0	117,0	135,0	-12,0	-94,0	8,0	0,09	0,09	0,60	0,14	0,09
456	Swedish	KR0013B					964,0	5,1	75,5	540,0	2450,0	146,8	243,0	-10,4	-81,4	17,0	0,07	0,26	0,54	0,07	0,07
457	Swedish	KAS07					971,0	8,1	39,3	522,0	2460,0	205,0	167,0	-11,2	-87,1	8,0	0,09	0,12	0,60	0,09	0,09
458	Swedish	KR0013B					986,0	4,7	71,5	535,0	2460,0	148,6	237,0	-10,3	-78,5	25,0	0,07	0,27	0,53	0,07	0,07
459	Swedish	KR0013B					876,0	4,8	63,7	571,0	2500,0	83,0	133,0	-11,4	-93,3	17,0	0,09	0,09	0,65	0,09	0,09
460	Swedish	SA0311A					1031,3	6,5	85,1	508,0	2655,4	200,0	221,0	-9,3	-67,8	10,1	0,07	0,38	0,42	0,07	0,07
461	Swedish	PASSEA01					1380,0	58,0	168,0	67,7	2670,0	383,5	61,0	-7,0	-54,6	26,0	0,20	0,58	0,08	0,08	0,08
462	Swedish	SA0435A					1094,6	4,0	71,2	509,9	2712,2	163,0	220,0	-9,7	-71,4	14,4	0,07	0,32	0,48	0,07	0,07
463	Swedish	SA1420A					1334,4	20,3	129,4	247,4	2721,0	267,4	204,0	-7,3	-58,4	33,0	0,06	0,61	0,20	0,06	0,06
464	Swedish	SA1713A					960,0	14,0	26,4	602,0	2730,0	192,0	25,0	-12,0	-90,2	4,2	0,10	0,10	0,47	0,22	0,10
465	Swedish	KAS04					1060,0	8,0	24,9	597,0	2760,0	207,0	69,0	-13,6	-103,4	8,0	0,09	0,09	0,35	0,39	0,09
466	Swedish	SA1680B					1100,0	10,0	63,3	583,0	2790,0	194,0	137,0	-10,8	-83,8	5,1	0,10	0,17	0,54	0,10	0,10
467	Swedish	KFI09					950,0	7,0	49,0	370,0	2800,0	210,0	162,0	-11,6	-84,0	3,0	0,09	0,13	0,60	0,09	0,09
468	Swedish	KAS09					1465,1	33,9	139,7	198,9	2804,3	298,3	175,0	-7,0	-56,7	33,8	0,07	0,68	0,11	0,07	0,07
469	Swedish	KAS03					1200,0	6,3	61,0	472,0	2850,0	31,9	54,0	-14,6	-115,3	8,0	0,07	0,07	0,34	0,44	0,07
470	Swedish	SA1420A					1347,5	20,5	135,8	284,4	2900,1	301,4	199,0	-7,1	-60,3	23,7	0,07	0,60	0,19	0,07	0,07
471	Swedish	KAS09					1490,0	39,5	141,0	191,0	2930,0	364,0	192,0	-6,9	-51,5	38,0	0,10	0,70	0,07	0,07	0,07
472	Swedish	SA1420A					1441,8	18,2	125,2	368,7	2949,7	304,5	199,0	-7,1	-50,5	32,1	0,07	0,63	0,17	0,07	0,07
473	Swedish	KAS03					1290,0	6,5	58,0	490,0	2950,0	39,0	53,0	-14,5	-118,1	8,0	0,07	0,07	0,31	0,47	0,07
474	Swedish	SA0813B					1470,9	16,2	114,8	279,8	2979,8	582,1	318,0	-7,5	-58,9	18,6	0,08	0,57	0,18	0,08	0,08
475	Swedish	KAS04					1180,0	6,1	30,0	740,0	3030,0	220,0	69,0	-13,0	-99,6	0,5	0,09	0,09	0,36	0,36	0,09
476	Swedish	SA1009B					1526,0	30,3	145,5	240,0	3045,4	330,3	234,0	-7,0	-57,4	24,5	0,07	0,69	0,11	0,07	0,07
477	Swedish	KR0015B					1060,0	5,0	74,2	679,0	3050,0	89,0	122,0	-11,6	-86,8	17,0	0,09	0,11	0,61	0,09	0,09
478	Swedish	SA1420A					1426,5	15,7	116,8	395,8	3052,5	303,0	206,0	-7,5	-57,0	28,7	0,07	0,56	0,23	0,07	0,07
479	Swedish	SA0813B					1551,0	17,5	124,3	282,3	3080,9	273,3	311,0	-6,8	-53,2	19,4	0,05	0,69	0,16	0,05	0,05
480	Swedish	SA0813B					1572,7	20,3	120,8	318,1	3112,8	298,0	292,0	-7,2	-53,7	30,4	0,06	0,66	0,16	0,06	0,06
481	Swedish	PASSEA02					1640,0	66,0	197,0	76,1	3160,0	434,4	73,0	-6,9	-54,5	38,0	0,28	0,49	0,07	0,07	0,07
482	Swedish	KAS09					1628,0	38,0	144,8	219,0	3162,0	363,0	206,0	-7,1	-58,8	30,0	0,08	0,68	0,08	0,08	0,08
483	Swedish	SA0237B					1417,7	16,8	129,5	418,6	3173,0	356,0	160,0	-8,2	-60,5	30,4	0,09	0,49	0,24	0,09	0,09
484	Swedish	SA2074A					1425,0	9,1	111,8	510,1	3238,6	251,3	140,0	-8,4	-65,1	33,0	0,08	0,41	0,34	0,08	0,08
485	Swedish	KAS02					1150,0	7,5	48,5	671,0	3250,0	200,0	138,0	-13,3	-94,9	8,0	0,09	0,09	0,45	0,26	0,09
486	Swedish	SA1210A					1661,0	27,0	147,6	226,7	3254,6	325,0	264,0	-6,9	-52,4	30,4	0,06	0,72	0,09	0,06	0,06
487	Swedish	SA0813B					1578,0	11,9	121,1	322,1	3272,3	282,0	302,0	-7,2	-53,7	22,8	0,06	0,63	0,20	0,06	0,06
488	Swedish	SA0813B					1660,0	20,0	127,0	325,0	3300,0	276,0	326,0	-7,0	-57,6	19,0	0,06	0,67	0,17	0,06	0,06

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
489	Swedish	PASSEA02					1810,0	69,0	212,0	88,0	3320,0	461,4	83,0	-6,0	-50,8	33,0	0,35	0,46	0,06	0,06	0,06
490	Swedish	SA0813B					1640,0	19,1	124,0	310,0	3350,0	261,0	317,0	-7,3	-50,4	14,0	0,05	0,69	0,15	0,05	0,05
491	Swedish	KAS03					1340,0	5,8	47,8	659,0	3360,0	167,4	48,0	-14,9	-116,0	8,0	0,08	0,08	0,20	0,56	0,08
492	Swedish	SA0813B					1670,0	19,0	124,0	317,0	3360,0	226,8	420,0	-7,5	-58,2	14,0	0,04	0,69	0,19	0,04	0,04
493	Swedish	SA1210A					1770,3	45,1	152,4	255,7	3369,7	328,0	309,0	-6,9	-55,4	27,0	0,12	0,71	0,06	0,06	0,06
494	Swedish	SA0205A					1475,8	16,4	135,0	511,8	3376,9	388,0	197,0	-7,6	-57,3	35,5	0,08	0,55	0,20	0,08	0,08
495	Swedish	PASSEA01					1810,0	69,0	215,0	88,8	3380,0	501,0	84,0	-6,0	-50,7	36,0	0,36	0,44	0,07	0,07	0,07
496	Swedish	SA1009B					1568,0	31,2	151,8	275,2	3385,8	352,4	228,0	-6,7	-54,3	20,3	0,07	0,71	0,07	0,07	0,07
497	Swedish	KAS09					1700,0	42,5	150,0	268,0	3390,0	362,5	240,0	-6,7	-55,8	10,0	0,13	0,67	0,07	0,07	0,07
498	Swedish	SA1009B					1590,0	27,1	137,9	371,7	3390,0	313,0	234,0	-7,3	-53,1	36,3	0,07	0,67	0,12	0,07	0,07
499	Swedish	KAS14					1766,0	47,4	154,8	271,0	3399,9	361,0	328,0	-7,1	-56,6	29,0	0,13	0,70	0,06	0,06	0,06
500	Swedish	KFI05					1100,0	10,0	110,0	875,0	3400,0	325,0	85,0	-10,5	-86,0	7,0	0,12	0,15	0,48	0,12	0,12
501	Swedish	HA0982B					1557,1	21,0	125,2	427,9	3403,5	299,0	225,0	-7,4	-54,5	22,8	0,07	0,62	0,17	0,07	0,07
502	Swedish	KAS14					1775,0	46,8	156,2	265,0	3403,5	350,0	349,0	-6,8	-57,8	29,0	0,12	0,72	0,05	0,05	0,05
503	Swedish	SA2074A					1454,0	9,3	119,3	560,4	3414,1	261,9	128,0	-8,7	-66,3	8,5	0,09	0,39	0,34	0,09	0,09
504	Swedish	SA1420A					1484,2	9,7	124,5	487,9	3419,9	307,0	215,0	-7,5	-59,0	31,0	0,07	0,53	0,25	0,07	0,07
505	Swedish	SA1420A					1539,0	15,8	127,4	485,0	3434,5	308,8	212,0	-7,2	-57,6	27,0	0,07	0,57	0,20	0,07	0,07
506	Swedish	HA1749A					1260,0	13,0	65,9	726,5	3450,0	284,6	116,0	-10,9	-69,3	4,2	0,11	0,22	0,45	0,11	0,11
507	Swedish	SA0813B					1700,0	21,0	123,0	364,0	3450,0	194,0	481,0	-7,5	-59,8	6,8	0,03	0,72	0,18	0,03	0,03
508	Swedish	SA1210A					1728,0	45,4	150,2	272,4	3450,0	327,8	278,0	-6,9	-53,9	30,0	0,12	0,70	0,06	0,06	0,06
509	Swedish	SA1210A					1760,0	47,3	171,0	246,0	3450,0	368,5	256,0	-6,6	-49,6	23,0	0,18	0,66	0,05	0,05	0,05
510	Swedish	SA1420A					1550,0	14,0	129,0	482,0	3450,0	335,6	226,0	-7,2	-55,5	32,0	0,07	0,58	0,20	0,07	0,07
511	Swedish	KFI05					1100,0	9,4	110,0	900,0	3450,0	325,0	83,0	-10,9	-86,0	7,0	0,12	0,13	0,50	0,12	0,12
512	Swedish	SA0327B					1226,8	5,9	83,1	724,2	3453,1	177,0	96,0	-10,0	-81,6	8,4	0,10	0,18	0,51	0,10	0,10
513	Swedish	SA1229A					1620,6	24,4	136,3	440,4	3481,5	224,4	314,0	-7,3	-54,7	23,7	0,05	0,70	0,14	0,05	0,05
514	Swedish	KA3105A					1260,0	8,0	101,0	754,0	3520,0	217,0	125,0	-8,7	-73,5	8,5	0,09	0,32	0,40	0,09	0,09
515	Swedish	KAS03					1340,0	5,8	42,8	800,0	3530,0	175,9	49,0	-14,6	-111,2	5,1	0,09	0,09	0,21	0,53	0,09
516	Swedish	SA1420A					1600,0	13,7	139,0	480,0	3530,0	335,0	214,0	-7,0	-52,5	22,0	0,07	0,61	0,17	0,07	0,07
517	Swedish	PASSEA03					1820,0	75,0	223,0	82,6	3540,0	491,4	80,0	-6,9	-54,8	29,0	0,37	0,41	0,07	0,07	0,07
518	Swedish	KAS09					1770,0	40,0	148,0	291,0	3541,8	352,0	264,0	-7,1	-56,2	35,0	0,10	0,69	0,07	0,07	0,07
519	Swedish	PASSEA05					1935,0	73,0	231,0	90,0	3610,0	516,0	84,0	-7,0	-54,1	34,0	0,38	0,39	0,08	0,08	0,08
520	Swedish	PASSEA03					1920,0	64,0	227,0	91,0	3620,0	514,0	84,0	-6,5	-52,3	36,0	0,35	0,42	0,07	0,07	0,07
521	Swedish	KAS06					1230,0	7,4	82,0	893,0	3630,0	150,0	89,0	-10,9	-94,3	3,8	0,11	0,11	0,53	0,15	0,11
522	Swedish	SA0958B					1634,1	21,4	125,1	477,8	3641,0	303,0	274,0	-7,2	-55,6	22,8	0,07	0,64	0,16	0,07	0,07
523	Swedish	SA1009B					1682,1	23,6	144,5	440,5	3672,9	304,0	242,0	-7,3	-54,2	12,7	0,07	0,65	0,13	0,07	0,07
524	Swedish	SA1229A					1628,5	24,1	146,7	466,9	3674,7	247,6	310,0	-6,5	-46,3	15,2	0,05	0,78	0,07	0,05	0,05
525	Swedish	PASSEA04					1990,0	66,0	234,0	94,0	3680,0	535,0	89,0	-6,7	-53,6	58,0	0,37	0,40	0,08	0,08	0,08
526	Swedish	SA1229A					1707,7	25,9	147,7	525,8	3687,1	242,0	325,0	-7,1	-49,7	27,0	0,05	0,75	0,09	0,05	0,05
527	Swedish	KAS07					1479,0	10,8	125,0	559,0	3743,8	74,4	335,0	-8,0	-65,4	22,0	0,04	0,57	0,30	0,04	0,04
528	Swedish	KLX02					1000,0	5,1	4,7	1340,0	3780,0	302,6	126,0	-11,3	-81,5	11,0	0,11	0,11	0,47	0,21	0,11
529	Swedish	SA1742A					1300,0	8,4	41,5	968,0	3800,0	286,0	71,0	-12,8	-98,3	4,2	0,11	0,11	0,30	0,38	0,11
530	Swedish	KAS07					1540,0	11,0	126,0	655,0	3810,0	347,6	182,0	-8,1	-65,3	24,0	0,09	0,44	0,28	0,09	0,09
531	Swedish	KA3110A					1590,0	26,0	131,0	585,0	3820,0	273,0	164,0	-7,7	-60,7	27,0	0,09	0,56	0,18	0,09	0,09
532	Swedish	KAS02					1300,0	6,6	65,0	990,0	3820,0	106,0	71,0	-13,9	-108,9	0,3	0,09	0,09	0,31	0,43	0,09
533	Swedish	KAS09					1790,0	33,2	152,0	403,0	3820,0	228,0	396,0	-7,4	-61,9	25,0	0,05	0,74	0,10	0,05	0,05
534	Swedish	KAS03					1370,0	5,5	45,7	872,0	3840,0	198,0	42,0	-14,4	-108,3	4,2	0,09	0,09	0,21	0,52	0,09
535	Swedish	SA1229A					1732,0	27,4	145,0	456,0	3871,5	224,0	330,0	-7,1	-51,7	16,9	0,05	0,75	0,09	0,05	0,05
536	Swedish	SA2142A					1720,0	25,0	128,0	581,0	3880,0	367,3	127,0	-7,2	-56,2	21,0	0,10	0,56	0,14	0,10	0,10
537	Swedish	SA0452A					1464,0	4,8	107,3	770,1	3882,1	227,0	134,0	-8,9	-68,5	16,9	0,09	0,33	0,39	0,09	0,09
538	Swedish	SA1696B					1330,0	9,4	74,3	916,0	3910,0	266,0	102,0	-11,5	-93,2	8,0	0,11	0,11	0,44	0,22	0,11
539	Swedish	SA1327B					1610,0	9,4	128,0	648,0	3920,0	225,0	252,0	-7,4	-65,3	17,0	0,07	0,51	0,27	0,07	0,07
540	Swedish	SA1229A					1735,4	26,1	151,7	512,1	3928,2	243,0	336,0	-7,0	-52,8	16,9	0,05	0,75	0,09	0,05	0,05
541	Swedish	SA1420A					1540,0	10,2	123,0	715,0	3930,0	225,9	170,0	-8,7	-72,0	17,0	0,09	0,38	0,35	0,09	0,09
542	Swedish	KA3110A					1600,0	20,0	133,0	656,0	3940,0	286,0	161,0	-9,2	-64,3	11,8	0,10	0,44	0,27	0,10	0,10
543	Swedish	KA3105A					1400,0	9,5	97,6	856,0	3960,0	243,0	102,0	-9,4	-72,4	22,0	0,11	0,27	0,41	0,11	0,11
544	Swedish	SA2074A					1521,7	10,3	126,4	627,0	3967,2	263,0	103,0	-8,4	-61,3	8,4	0,10	0,42	0,30	0,10	0,10
545	Swedish	SA1009B					1769,8	26,6	153,1	506,1	3984,1	250,0	292,0	-7,3	-58,1	15,0	0,07	0,68	0,12	0,07	0,07
546	Swedish	PASSEA04					2050,0	83,0	251,0	93,0	4030,0	548,3	94,0	-6,5	-53,0	40,0	0,47	0,33	0,07	0,07	0,07
547	Swedish	KA1639A					1626,0	6,0	41,0	733,0	4060,0	114,5	17,0	-14,7	-110,9	7,6	0,09	0,09	0,18	0,56	0,09
548	Swedish	SA1009B					1740,0	25,8	164,0	514,0	4080,0	252,0	276,0	-7,3	-47,3	8,0	0,06	0,74	0,07	0,06	0,06
549	Swedish	SA0958B					1829,2	22,4	137,2	595,2	4087,9	243,0	371,0	-7,5	-56,0	8,4	0,06	0,69	0,14	0,06	0,06

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
550	Swedish	SA0468A					1543,1	6,0	118,7	782,7	4098,4	240,0	129,0	-9,0	-66,8	15,2	0,10	0,34	0,36	0,10	0,10
551	Swedish	PASSEA05					2030,0	81,0	246,0	91,8	4100,0	536,3	91,0	-6,8	-54,8	30,0	0,44	0,34	0,07	0,07	0,07
552	Swedish	SA1229A					1810,4	27,0	151,4	579,6	4105,5	209,7	388,0	-7,4	-58,1	14,0	0,05	0,73	0,11	0,05	0,05
553	Swedish	SA1009B					1847,1	26,3	163,6	535,3	4125,6	250,0	300,0	-11,1	-84,8	5,1	0,10	0,37	0,33	0,10	0,10
554	Swedish	SA1229A					1820,0	24,7	159,0	549,0	4140,0	216,0	378,0	-6,6	-50,1	14,0	0,05	0,80	0,06	0,05	0,05
555	Swedish	SA1420A					1610,0	11,0	126,0	760,0	4140,0	225,0	202,0	-8,5	-68,8	10,0	0,09	0,42	0,32	0,09	0,09
556	Swedish	KAS12					1460,0	12,0	84,4	880,0	4158,6	168,0	103,0	-11,2	-86,1	5,1	0,12	0,12	0,53	0,12	0,12
557	Swedish	KBH02					1800,0	21,0	160,0	638,0	4210,0	227,4	340,0	-7,3	-52,4	10,0	0,06	0,72	0,11	0,06	0,06
558	Swedish	SA1229A					1847,9	24,5	156,1	598,5	4210,9	208,3	426,0	-7,3	-60,0	16,0	0,05	0,73	0,12	0,05	0,05
559	Swedish	KAS12					1440,0	11,3	91,5	891,0	4220,0	171,0	76,0	-11,4	-90,7	8,0	0,12	0,12	0,48	0,17	0,12
560	Swedish	KA1639A					1620,0	6,0	45,9	774,0	4230,0	130,0	19,0	-14,2	-107,1	4,2	0,09	0,09	0,21	0,51	0,09
561	Swedish	KAS03					1450,0	6,9	48,4	964,0	4230,0	212,4	38,0	-14,3	-108,5	4,0	0,10	0,10	0,18	0,53	0,10
562	Swedish	KA1639A					1670,0	6,3	38,8	773,0	4260,0	123,1	15,0	-14,6	-107,6	12,0	0,09	0,09	0,18	0,54	0,09
563	Swedish	SA0958B					1810,0	19,6	144,0	657,0	4260,0	241,0	296,0	-7,4	-57,5	14,0	0,07	0,63	0,16	0,07	0,07
564	Swedish	SA2074A					1701,7	10,2	141,5	723,2	4275,6	275,0	94,0	-8,5	-63,3	8,4	0,11	0,40	0,29	0,11	0,11
565	Swedish	KXTT3					1621,3	12,1	79,9	947,3	4296,9	295,1	130,0	-9,3	-73,4	20,0	0,11	0,26	0,39	0,11	0,11
566	Swedish	KAV01					1500,0	6,0	60,0	1100,0	4300,0	220,0	42,0	-11,7	-86,2	8,0	0,12	0,12	0,39	0,26	0,12
567	Swedish	HA1327B					1760,0	13,7	157,0	684,0	4310,0	255,0	259,0	-7,5	-50,6	18,0	0,07	0,64	0,16	0,07	0,07
568	Swedish	SA0923A					1800,0	30,0	162,0	678,0	4310,0	127,6	655,0	-7,7	-59,7	8,4	0,01	0,88	0,08	0,01	0,01
569	Swedish	SA0958B					1803,1	21,5	139,6	697,7	4310,0	225,3	311,0	-7,7	-61,9	14,0	0,07	0,61	0,18	0,07	0,07
570	Swedish	KBH02					1870,0	20,5	154,0	692,0	4320,0	212,7	366,0	-7,2	-58,1	14,0	0,06	0,69	0,14	0,06	0,06
571	Swedish	SA2273A					1778,6	13,2	140,3	795,9	4346,5	241,7	180,0	-8,1	-62,8	20,3	0,09	0,48	0,25	0,09	0,09
572	Swedish	HA1327B					1790,0	12,3	153,0	674,0	4350,0	241,0	265,0	-7,4	-54,5	13,0	0,07	0,61	0,18	0,07	0,07
573	Swedish	KBH02					1850,0	19,4	158,0	647,0	4350,0	210,0	354,0	-7,3	-52,0	4,0	0,05	0,72	0,12	0,05	0,05
574	Swedish	SA1062B					1930,0	34,0	177,0	545,0	4350,0	187,0	403,0	-7,3	-57,6	9,3	0,05	0,80	0,05	0,05	0,05
575	Swedish	KXTT2					1632,2	11,6	79,7	963,7	4389,1	326,9	124,0	-9,3	-68,4	39,0	0,12	0,28	0,37	0,12	0,12
576	Swedish	SA2109B					1730,0	17,0	107,0	884,0	4480,0	302,6	67,0	-8,2	-64,5	5,9	0,12	0,37	0,28	0,12	0,12
577	Swedish	KAS05					1490,0	8,6	53,5	1070,0	4500,0	116,0	97,0	-13,3	-100,3	8,0	0,10	0,10	0,35	0,36	0,10
578	Swedish	SA0923A					1850,0	31,0	172,0	746,0	4500,0	90,0	669,0	-7,9	-63,4	4,2	0,01	0,87	0,09	0,01	0,01
579	Swedish	HA1327B					1860,0	11,0	155,0	746,0	4600,0	208,0	280,0	-7,6	-57,5	18,0	0,07	0,59	0,20	0,07	0,07
580	Swedish	KAS03					1550,0	6,2	40,0	1190,0	4600,0	300,0	27,0	-13,6	-109,6	8,0	0,11	0,11	0,11	0,58	0,11
581	Swedish	SA1420A					1650,0	7,6	117,0	981,0	4610,0	200,0	830,0	-11,2	-86,6	4,2	0,03	0,49	0,42	0,03	0,03
582	Swedish	SA1210A					1980,0	30,5	208,0	572,0	4620,0	129,1	540,0	-7,4	-61,5	17,0	0,03	0,86	0,05	0,03	0,03
583	Swedish	KAS03					1564,0	6,7	48,4	1162,0	4637,0	270,0	38,0	-13,6	-106,3	6,8	0,11	0,11	0,15	0,53	0,11
584	Swedish	KFI05					1380,0	7,2	70,0	1500,0	4650,0	300,0	39,0	-11,8	-88,0	5,0	0,12	0,12	0,31	0,31	0,12
585	Swedish	SA2074A					1730,0	11,0	144,0	764,0	4670,0	277,0	79,0	-8,4	-60,0	7,0	0,11	0,41	0,26	0,11	0,11
586	Swedish	KLX01					1610,0	7,3	24,0	1330,0	4680,0	390,0	24,0	-11,8	-98,8	8,0	0,12	0,12	0,16	0,48	0,12
587	Swedish	KAS03					1626,8	7,1	44,3	1263,8	4701,1	274,8	33,0	-13,9	-105,8	5,0	0,11	0,11	0,12	0,56	0,11
588	Swedish	SA1342B					1680,0	11,0	152,0	950,0	4730,0	148,3	170,0	-8,7	-61,9	5,9	0,09	0,46	0,28	0,09	0,09
589	Swedish	KA2512A					1877,0	10,0	117,0	903,0	4750,7	302,0	196,0	-8,1	-63,8	11,0	0,10	0,42	0,28	0,10	0,10
590	Swedish	HA1327B					1850,0	12,0	158,0	778,0	4770,0	198,0	277,0	-7,5	-59,2	8,0	0,07	0,59	0,20	0,07	0,07
591	Swedish	SA2273A					1866,0	12,4	151,1	852,2	4787,9	241,0	182,0	-7,8	-64,0	8,5	0,09	0,48	0,23	0,09	0,09
592	Swedish	SA1696B					1653,4	6,3	73,3	1195,8	4828,0	365,0	68,0	-11,2	-85,6	8,4	0,13	0,13	0,33	0,27	0,13
593	Swedish	KAS12					1650,0	12,5	107,0	1070,0	4860,0	232,5	61,0	-10,5	-82,0	4,0	0,13	0,15	0,45	0,13	0,13
594	Swedish	KA3005A					1730,0	12,5	84,9	1160,0	4870,0	288,0	81,0	-9,7	-76,0	15,2	0,13	0,20	0,41	0,13	0,13
595	Swedish	KLX01					1680,0	7,1	23,0	1400,0	4870,0	351,0	24,0	-13,3	-102,1	8,0	0,11	0,11	0,11	0,55	0,12
596	Swedish	KA3005A					1730,0	13,6	82,5	1191,4	4878,3	350,6	93,0	-10,0	-75,5	30,0	0,14	0,19	0,40	0,14	0,14
597	Swedish	KA0483A					1480,0	9,1	132,0	1250,0	4890,0	60,0	42,0	-11,3	-85,9	8,0	0,12	0,12	0,51	0,12	0,12
598	Swedish	SA1077A					2180,0	32,6	200,0	650,0	4890,0	127,3	690,0	-7,5	-58,7	17,0	0,02	0,94	0,01	0,01	0,01
599	Swedish	KXTT4					1731,7	14,1	83,2	1191,8	4920,9	329,8	106,0	-9,9	-77,0	25,0	0,13	0,19	0,40	0,13	0,13
600	Swedish	SA2273A					1911,1	14,4	165,3	848,6	4920,9	203,0	205,0	-7,9	-56,7	12,7	0,08	0,56	0,19	0,08	0,08
601	Swedish	SA1861A					1720,0	11,0	112,0	1050,0	4940,0	302,0	79,0	-9,2	-73,9	4,2	0,13	0,25	0,37	0,13	0,13
602	Swedish	SA2273A					1932,0	13,4	166,0	900,5	4998,9	218,0	201,0	-7,8	-60,5	8,4	0,09	0,53	0,20	0,09	0,09
603	Swedish	KXTT4					1763,7	14,2	81,5	1253,8	5013,1	343,0	98,0	-10,1	-78,6	18,0	0,14	0,16	0,41	0,14	0,14
604	Swedish	SA2322A					1908,3	9,4	142,5	977,4	5034,3	213,0	184,0	-8,1	-63,4	8,4	0,10	0,45	0,26	0,10	0,10
605	Swedish	HAS13					1880,0	32,8	219,0	1040,0	5070,0	136,0	132,0	-7,2	-69,3	1,2	0,10	0,62	0,10	0,10	0,10
606	Swedish	SA2322A					1910,0	9,8	139,0	998,0	5070,0	231,6	165,0	-8,5	-62,9	7,6	0,10	0,42	0,27	0,10	0,10
607	Swedish	KXTT1					1768,9	14,1	81,4	1285,5	5084,0	343,3	91,0	-10,2	-76,9	16,0	0,14	0,16	0,41	0,14	0,14
608	Swedish	KXTT3					1775,9	14,3	82,3	1301,1	5091,1	347,0	92,0	-10,2	-78,4	24,0	0,14	0,16	0,42	0,14	0,14
609	Swedish	KFI09					1600,0	8,0	57,0	1000,0	5100,0	320,0	34,0	-11,9	-89,9	3,0	0,12	0,12	0,28	0,35	0,12
610	Swedish	KFI09					1400,0	8,0	57,0	1000,0	5100,0	300,0	33,0	-11,1	-87,4	3,0	0,12	0,12	0,35	0,27	0,12

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
611	Swedish	SA2273B					1761,7	7,8	127,5	1135,1	5105,2	196,0	117,0	-9,5	-71,3	8,4	0,11	0,29	0,37	0,11	0,11
612	Swedish	KXTT2					1754,3	13,8	80,8	1263,3	5119,4	357,7	91,0	-10,2	-78,4	22,0	0,14	0,15	0,42	0,14	0,14
613	Swedish	SA1828B					1861,5	11,7	138,8	1063,9	5123,0	251,0	111,0	-8,9	-67,8	8,4	0,12	0,35	0,30	0,12	0,12
614	Swedish	SA1111B					2160,0	18,7	200,0	736,0	5130,0	110,9	340,0	-7,7	-60,3	25,0	0,06	0,68	0,13	0,06	0,06
615	Swedish	HAS02					2250,0	28,0	244,0	741,0	5160,0	155,0	219,0	-7,8	-63,7	1,0	0,11	0,64	0,08	0,08	0,08
616	Swedish	SA1614B					1570,0	8,3	80,2	1250,0	5160,0	308,0	37,0	-13,1	-103,1	8,0	0,12	0,12	0,17	0,47	0,12
617	Swedish	SA2289B					1952,7	12,2	162,1	968,6	5167,3	219,0	178,0	-8,0	-60,8	8,4	0,10	0,49	0,22	0,10	0,10
618	Swedish	SA1614B					1831,3	7,4	98,3	1207,0	5176,1	333,0	109,0	-9,7	-71,9	8,4	0,13	0,21	0,39	0,13	0,13
619	Swedish	KAS03					1770,0	5,9	40,0	1400,0	5180,0	370,0	12,0	-13,3	-104,9	8,0	0,11	0,11	0,11	0,55	0,13
620	Swedish	SA1828B					1700,0	8,5	92,2	1290,0	5200,0	302,6	43,0	-10,8	-84,4	4,2	0,14	0,14	0,36	0,23	0,14
621	Swedish	BFI01					1700,0	14,0	120,0	1500,0	5200,0	370,0	59,0	-11,8	-89,0	3,0	0,14	0,14	0,29	0,28	0,14
622	Swedish	SA1844B					1810,0	9,5	113,0	1220,0	5250,0	330,0	62,0	-9,5	-75,8	4,2	0,14	0,20	0,38	0,14	0,14
623	Swedish	SA2074A					1959,4	8,6	172,0	992,6	5282,5	305,0	47,0	-8,5	-65,2	5,9	0,13	0,36	0,26	0,13	0,13
624	Swedish	SA1062B					2230,0	23,5	220,0	770,0	5320,0	100,7	531,0	-7,7	-58,0	8,0	0,04	0,83	0,05	0,04	0,04
625	Swedish	KAS02					1700,0	9,0	72,0	1540,0	5340,0	270,0	27,0	-12,3	-100,6	8,0	0,12	0,12	0,19	0,44	0,12
626	Swedish	SA2322A					2170,0	8,6	129,0	1070,0	5340,0	227,0	152,0	-8,8	-66,0	4,0	0,11	0,36	0,30	0,11	0,11
627	Swedish	SA2322A					1924,0	11,6	140,0	1024,0	5353,0	223,0	169,0	-8,6	-68,0	8,4	0,11	0,39	0,29	0,11	0,11
628	Swedish	KAS02					1710,0	8,8	75,0	1480,0	5360,0	291,0	33,0	-12,7	-99,8	8,0	0,12	0,12	0,17	0,46	0,12
629	Swedish	KA3005A					1740,0	12,7	85,6	1310,0	5400,0	305,0	57,0	-10,0	-80,5	8,5	0,14	0,14	0,42	0,15	0,14
630	Swedish	KAS02					1800,0	8,1	66,0	1580,0	5440,0	290,0	25,0	-12,8	-99,9	8,0	0,12	0,12	0,14	0,49	0,12
631	Swedish	SA0850B					1920,0	18,0	141,0	1210,0	5440,0	90,5	170,0	-8,3	-67,2	6,8	0,09	0,46	0,26	0,09	0,09
632	Swedish	SA2175B					1959,5	15,3	161,6	1037,1	5442,0	267,0	127,0	-8,2	-62,0	8,4	0,11	0,45	0,21	0,11	0,11
633	Swedish	SA2240B					2110,0	17,5	180,0	1010,0	5460,0	253,5	171,0	-8,1	-57,3	5,9	0,10	0,54	0,15	0,10	0,10
634	Swedish	SA2273B					1830,0	8,0	136,0	1280,0	5460,0	231,3	104,0	-9,4	-75,8	5,9	0,13	0,25	0,37	0,13	0,13
635	Swedish	HAS02					2320,0	26,0	217,0	818,0	5470,0	162,0	227,0	-7,5	-57,6	1,0	0,11	0,64	0,08	0,08	0,08
636	Swedish	SA1730A					1740,0	10,0	64,8	1420,0	5470,0	464,0	39,0	-12,4	-91,6	4,2	0,14	0,14	0,14	0,45	0,14
637	Swedish	SA1696B					1817,0	8,9	72,3	1400,6	5498,8	419,0	54,0	-11,1	-82,8	4,2	0,14	0,14	0,27	0,30	0,14
638	Swedish	BFI01					1700,0	16,0	140,0	1500,0	5500,0	390,0	61,0	-11,5	-86,9	3,0	0,15	0,15	0,31	0,24	0,15
639	Swedish	BFI01					1700,0	13,0	110,0	1650,0	5500,0	370,0	47,0	-11,8	-88,7	3,0	0,14	0,14	0,25	0,32	0,14
640	Swedish	SA1828B					1860,0	9,6	118,0	1250,0	5540,0	340,0	72,0	-9,3	-71,1	32,0	0,14	0,24	0,35	0,14	0,14
641	Swedish	SA2240B					2150,0	17,1	177,0	1040,0	5560,0	258,0	158,0	-8,0	-60,7	4,0	0,11	0,51	0,17	0,11	0,11
642	Swedish	SA2273A					2070,0	13,4	172,0	1110,0	5570,0	252,9	146,0	-8,4	-61,1	4,2	0,11	0,46	0,21	0,11	0,11
643	Swedish	SA2289B					2040,0	12,0	164,0	1160,0	5570,0	252,0	138,0	-8,4	-66,6	10,0	0,12	0,41	0,25	0,12	0,12
644	Swedish	SA0976B					2170,0	20,6	203,0	993,0	5590,0	58,7	500,0	-7,4	-60,4	14,0	0,04	0,78	0,10	0,04	0,04
645	Swedish	SA1229A					2170,0	11,2	194,0	1060,0	5590,0	101,0	510,0	-8,1	-63,6	17,0	0,05	0,68	0,18	0,05	0,05
646	Swedish	KA3067A					1720,0	11,8	85,9	1510,0	5650,0	307,0	53,0	-10,6	-81,2	8,5	0,14	0,14	0,36	0,21	0,14
647	Swedish	SA1614B					1880,0	6,7	90,8	1390,0	5650,0	350,0	81,0	-10,4	-77,6	4,0	0,14	0,14	0,38	0,19	0,14
648	Swedish	SA2175B					2030,0	17,1	172,0	1100,0	5650,0	276,0	94,0	-8,3	-61,1	14,0	0,12	0,45	0,19	0,12	0,12
649	Swedish	KFI05					1500,0	8,3	100,0	1790,0	5650,0	324,0	44,0	-12,2	-88,0	3,0	0,13	0,13	0,25	0,34	0,13
650	Swedish	KAS06					2000,0	11,0	126,0	1280,0	5670,0	357,0	52,0	-9,2	-77,7	8,0	0,15	0,20	0,35	0,15	0,15
651	Swedish	KAS06					1820,0	9,1	119,0	1490,0	5680,0	283,0	49,0	-9,2	-77,8	0,3	0,14	0,19	0,38	0,14	0,14
652	Swedish	SA1696B					1880,0	8,0	76,2	1450,0	5690,0	428,0	57,0	-11,1	-81,0	7,0	0,15	0,15	0,26	0,30	0,15
653	Swedish	KA3010A					1820,0	15,5	90,5	1530,0	5770,0	315,0	56,0	-10,5	-80,3	8,5	0,15	0,15	0,37	0,19	0,15
654	Swedish	SA1614B					1944,3	7,5	84,5	1516,2	5815,5	339,0	67,0	-10,5	-78,3	4,0	0,14	0,14	0,35	0,22	0,14
655	Swedish	KAS04					1890,0	7,8	61,0	1660,0	5840,0	407,0	21,0	-11,9	-92,3	0,0	0,14	0,14	0,14	0,45	0,14
656	Swedish	SA1828B					1909,2	8,0	113,9	1392,4	5849,7	387,0	48,0	-10,3	-75,9	4,2	0,15	0,15	0,36	0,19	0,15
657	Swedish	KAS03					1920,0	6,2	38,0	1740,0	5880,0	470,0	11,0	-13,3	-103,4	8,0	0,10	0,10	0,10	0,54	0,16
658	Swedish	KA2162B					2200,0	15,0	166,0	1260,0	5940,0	311,6	102,0	-8,7	-60,2	4,2	0,13	0,41	0,20	0,13	0,13
659	Swedish	KAS07					1890,0	9,5	59,6	1610,0	5960,0	446,0	13,0	-11,2	-80,4	12,7	0,15	0,15	0,19	0,36	0,15
660	Swedish	KAS06					2070,0	11,7	153,0	1410,0	5970,0	362,0	64,0	-7,4	-69,2	0,6	0,14	0,35	0,23	0,14	0,14
661	Swedish	KA2162B					2150,0	13,0	153,0	1330,0	5990,0	314,6	116,0	-8,9	-61,5	4,2	0,13	0,38	0,23	0,13	0,13
662	Swedish	SA1828B					1930,0	10,0	108,0	1450,0	6010,0	376,0	48,0	-10,3	-71,4	4,0	0,16	0,16	0,37	0,16	0,16
663	Swedish	SA2600A					2094,0	7,6	90,7	1499,0	6023,5	407,3	90,0	-9,4	-70,4	11,0	0,15	0,18	0,36	0,15	0,15
664	Swedish	KA1750A					1986,0	6,9	70,7	1607,0	6030,0	434,4	33,0	-11,4	-86,2	5,1	0,14	0,14	0,17	0,40	0,14
665	Swedish	KAS07					1940,0	9,8	50,1	1650,0	6060,0	486,0	18,0	-12,1	-94,2	25,0	0,13	0,13	0,13	0,46	0,16
666	Swedish	SA1730A					1944,4	6,1	61,8	1709,4	6062,5	459,0	39,0	-11,9	-89,2	12,0	0,14	0,14	0,14	0,44	0,15
667	Swedish	SA1730A					2001,9	8,1	59,0	1860,8	6064,5	470,8	40,0	-11,7	-87,2	4,0	0,14	0,14	0,14	0,42	0,15
668	Swedish	KA2162B					2130,0	12,0	126,0	1420,0	6070,0	329,6	96,0	-9,6	-73,5	4,2	0,15	0,23	0,33	0,15	0,15
669	Swedish	KAS07					1980,0	10,2	51,2	1600,0	6120,0	452,4	52,0	-11,3	-89,1	9,0	0,14	0,14	0,15	0,41	0,14
670	Swedish	KAS06					2200,0	11,1	130,0	1570,0	6150,0	459,0	50,0	-8,2	-70,8	3,5	0,16	0,25	0,26	0,16	0,16
671	Swedish	SA2600A					2140,2	7,6	89,3	1542,4	6183,0	382,1	95,0	-9,8	-75,5	11,0	0,15	0,15	0,36	0,18	0,15

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
672	Swedish	SA1614B					1953,7	5,2	65,9	1710,4	6207,3	424,0	32,0	-11,5	-85,5	4,2	0,14	0,14	0,16	0,42	0,14
673	Swedish	KA1750A					2062,0	7,8	71,2	1684,0	6230,0	461,4	33,0	-11,4	-83,5	4,2	0,15	0,15	0,15	0,40	0,15
674	Swedish	SA2355B					1959,0	8,4	68,7	1634,0	6240,0	443,0	23,0	-10,6	-83,1	5,9	0,15	0,15	0,20	0,35	0,15
675	Swedish	SA1696B					1932,5	9,1	71,4	1740,4	6275,2	459,0	89,0	-11,2	-81,3	8,4	0,15	0,15	0,23	0,32	0,15
676	Swedish	KA1639A					2005,0	6,8	66,7	1711,0	6290,0	434,4	22,0	-12,1	-89,8	5,1	0,13	0,13	0,13	0,45	0,15
677	Swedish	KAS08					2000,0	8,3	64,3	1670,0	6300,0	413,0	27,0	-10,8	-84,3	8,0	0,15	0,15	0,19	0,37	0,15
678	Swedish	KA1750A					1907,0	7,4	76,4	1540,0	6310,0	431,5	37,0	-11,5	-89,6	4,2	0,14	0,14	0,16	0,41	0,14
679	Swedish	KA1750A					2003,0	7,0	69,0	1630,0	6320,0	449,4	31,0	-11,6	-80,0	8,4	0,15	0,15	0,17	0,38	0,15
680	Swedish	KA1639A					1995,0	6,8	67,6	1723,0	6390,0	437,4	25,0	-12,1	-91,2	8,4	0,13	0,13	0,13	0,45	0,15
681	Swedish	KAS02					2100,0	8,1	42,0	1890,0	6410,0	560,0	10,0	-12,3	-97,2	8,0	0,11	0,11	0,11	0,48	0,18
682	Swedish	KAS08					2180,0	13,3	144,8	1522,0	6452,0	391,0	63,0	-9,2	-73,8	13,0	0,16	0,23	0,29	0,16	0,16
683	Swedish	SA2734B					2071,0	8,5	94,5	1726,0	6490,0	436,0	37,0	-10,7	-83,6	10,0	0,16	0,16	0,20	0,33	0,16
684	Swedish	SA2649A					2123,0	8,3	76,1	1715,0	6523,0	501,0	39,0	-10,9	-82,7	14,0	0,16	0,16	0,16	0,38	0,16
685	Swedish	SA2681A					2139,0	8,1	77,8	1675,0	6523,0	486,0	41,0	-10,7	-82,1	15,0	0,16	0,16	0,17	0,36	0,16
686	Swedish	SA1828B					1933,1	11,6	107,8	1493,5	6550,0	363,0	49,0	-10,3	-80,1	4,0	0,15	0,15	0,32	0,22	0,15
687	Swedish	KA3067A					1880,0	11,2	66,6	1950,0	6560,0	350,0	26,0	-11,7	-91,1	8,5	0,14	0,14	0,14	0,43	0,14
688	Swedish	KA3010A					1890,0	15,1	82,2	1820,0	6600,0	336,0	43,0	-11,3	-87,9	8,5	0,15	0,15	0,22	0,34	0,15
689	Swedish	SA2583A					2099,0	8,3	56,9	1870,0	6647,0	508,0	13,0	-10,7	-85,9	4,2	0,15	0,15	0,15	0,40	0,17
690	Swedish	KA3385A					2080,0	8,5	60,5	1861,0	6650,0	443,0	10,0	-10,4	-79,3	9,3	0,16	0,16	0,17	0,36	0,16
691	Swedish	KA3191F					2128,5	9,5	90,0	1722,5	6691,8	368,0	61,0	-10,4	-76,7	12,7	0,16	0,16	0,29	0,24	0,16
692	Swedish	SA2664A					2124,0	8,2	75,1	1753,0	6701,0	515,0	39,0	-10,9	-83,4	11,0	0,15	0,15	0,15	0,38	0,16
693	Swedish	KA3385A					2090,0	8,4	63,1	1860,0	6710,0	450,0	10,0	-10,5	-81,8	8,5	0,15	0,15	0,15	0,38	0,16
694	Swedish	SA2600A					2171,1	7,6	72,2	1825,4	6718,3	498,0	92,0	-10,8	-80,4	4,2	0,16	0,16	0,19	0,34	0,16
695	Swedish	SA2681B					2187,0	10,6	114,0	1772,0	6842,0	406,0	64,0	-10,4	-80,4	9,3	0,16	0,16	0,26	0,26	0,16
696	Swedish	SA1730A					2060,0	7,6	65,4	1830,0	6890,0	513,0	32,0	-12,1	-81,7	4,0	0,14	0,14	0,14	0,41	0,17
697	Swedish	SA2583A					2170,0	8,5	73,9	1859,6	6895,6	492,0	44,0	-11,1	-83,5	5,9	0,15	0,15	0,15	0,38	0,16
698	Swedish	KA1639A					2113,0	6,8	68,3	1900,0	6950,0	485,0	23,0	-12,4	-90,2	4,2	0,13	0,13	0,13	0,45	0,17
699	Swedish	KA1639A					2218,0	8,2	68,3	1967,0	6960,0	479,4	23,0	-12,4	-89,1	4,2	0,13	0,13	0,13	0,44	0,18
700	Swedish	SA2634B					2273,0	10,2	91,4	1986,0	7197,0	414,0	64,0	-11,3	-86,2	18,0	0,15	0,15	0,15	0,38	0,16
701	Swedish	KAS05					2270,0	7,7	42,7	2020,0	7290,0	576,0	12,0	-12,9	-95,6	8,0	0,11	0,11	0,11	0,48	0,20
702	Swedish	SA1730A					2149,1	8,2	54,2	2160,0	7329,9	512,0	45,0	-12,2	-86,4	8,4	0,13	0,13	0,13	0,43	0,18
703	Swedish	KA3191F					2225,3	8,6	64,3	2093,1	7409,7	444,7	29,0	-11,2	-81,6	8,4	0,15	0,15	0,15	0,39	0,17
704	Swedish	SA2768B					2190,0	7,9	70,3	2226,0	7640,0	490,0	14,0	-11,8	-84,2	4,2	0,14	0,14	0,14	0,41	0,18
705	Swedish	SA2600A					2260,0	9,1	65,0	2180,0	7734,7	470,0	37,0	-11,2	-77,9	8,4	0,15	0,15	0,15	0,37	0,17
706	Swedish	SA2783A					2258,0	8,4	59,6	2363,0	8030,0	508,0	14,0	-12,2	-88,3	4,2	0,12	0,12	0,12	0,43	0,20
707	Swedish	KAS03					2130,0	6,6	45,0	2670,0	8080,0	680,0	11,0	-13,0	-99,7	8,0	0,09	0,09	0,09	0,50	0,23
708	Swedish	SA2600A					2398,0	9,9	52,0	2541,0	8349,0	560,0	17,0	-12,2	-93,7	9,3	0,11	0,11	0,11	0,45	0,21
709	Swedish	KAS05					2450,0	10,0	42,1	2560,0	8402,0	534,0	5,0	-13,0	-96,8	8,4	0,10	0,10	0,10	0,48	0,22
710	Swedish	SA2783A					2347,6	9,1	62,5	2532,4	8411,2	523,0	20,0	-12,1	-90,5	9,3	0,12	0,12	0,12	0,43	0,21
711	Swedish	SA1730A					2430,5	9,4	48,6	2793,3	8499,9	549,0	31,0	-12,4	-85,1	8,4	0,12	0,12	0,12	0,43	0,21
712	Swedish	KA3067A					2374,3	12,7	49,3	2705,6	8584,9	426,3	10,0	-13,0	-95,2	14,0	0,11	0,11	0,11	0,47	0,20
713	Swedish	SA2600B					2453,0	9,9	49,0	2681,0	8597,0	575,0	13,0	-12,4	-94,3	5,9	0,11	0,11	0,11	0,45	0,22
714	Swedish	SA1730A					2384,2	8,2	56,4	2616,5	8650,5	530,5	36,0	-12,1	-88,8	16,0	0,12	0,12	0,12	0,43	0,21
715	Swedish	SA1730A					2440,3	8,2	53,5	2755,1	8671,8	539,3	32,0	-12,0	-90,2	8,5	0,12	0,12	0,12	0,43	0,21
716	Swedish	SA2663B					2447,0	10,0	53,4	2639,0	8686,0	589,0	20,0	-12,2	-92,8	4,2	0,11	0,11	0,11	0,44	0,22
717	Swedish	SA2783A					2448,4	9,6	57,9	2813,0	9022,8	513,0	18,0	-12,2	-83,2	8,4	0,12	0,12	0,12	0,41	0,21
718	Swedish	SA2768A					2459,0	9,4	55,1	2904,0	9058,0	580,0	11,0	-12,9	-92,6	4,2	0,10	0,10	0,10	0,46	0,23
719	Swedish	SA2834B					2522,0	10,7	95,9	2734,0	9094,0	571,0	15,0	-12,3	-86,8	4,2	0,13	0,13	0,13	0,39	0,23
720	Swedish	KAV01					3100,0	8,0	31,0	2900,0	9700,0	400,0	9,0	-12,8	-92,6	3,0	0,10	0,10	0,10	0,48	0,23
721	Swedish	KLX02					2460,0	8,5	4,0	3590,0	9910,0	644,2	53,0	-11,9	-84,5	10,1	0,11	0,11	0,11	0,44	0,24
722	Swedish	SA2703A					2694,0	11,0	43,2	3285,0	10140,0	659,0	12,0	-12,8	-93,2	10,0	0,09	0,09	0,09	0,45	0,27
723	Swedish	SA2718A					2707,2	7,9	41,9	3360,3	10148,4	648,0	15,0	-12,9	-93,8	4,2	0,09	0,09	0,09	0,47	0,27
724	Swedish	KAS02					2850,0	13,7	30,1	3310,0	10200,0	668,2	25,0	-13,6	-99,7	8,0	0,08	0,08	0,08	0,48	0,28
725	Swedish	KA2858A					2630,0	9,7	49,7	3360,0	10300,0	577,0	9,0	-13,1	-96,6	8,5	0,09	0,09	0,09	0,47	0,26
726	Swedish	KA1755A					2682,1	9,3	40,7	3400,3	10407,2	640,3	9,0	-13,1	-91,9	8,5	0,09	0,09	0,09	0,46	0,27
727	Swedish	SA2703A					2824,0	7,8	40,3	3581,3	10591,6	683,0	12,0	-13,1	-93,7	4,2	0,08	0,08	0,08	0,47	0,28
728	Swedish	SA2783A					2839,8	11,7	50,1	3712,7	10910,7	599,5	18,0	-12,5	-90,0	22,0	0,10	0,10	0,10	0,43	0,27
729	Swedish	SA2783A					2811,3	10,3	53,3	3661,9	10944,3	584,0	14,0	-12,0	-88,6	8,5	0,11	0,11	0,11	0,41	0,27
730	Swedish	KAS02					2850,0	11,5	31,0	3690,0	11100,0	522,0	7,0	-13,0	-96,8	8,0	0,08	0,08	0,08	0,48	0,27
731	Swedish	KAS02					3000,0	10,9	31,0	3830,0	11100,0	519,0	11,0	-13,1	-96,8	0,2	0,08	0,08	0,08	0,48	0,27
732	Swedish	SA2880A					2846,8	12,1	46,4	3812,5	11371,5	609,4	30,0	-12,1	-84,5	21,0	0,11	0,11	0,11	0,40	0,27

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
733	Swedish	KAS03					3020,0	7,3	49,5	4380,0	12300,0	709,0	11,0	-12,7	-96,4	0,4	0,07	0,07	0,07	0,46	0,32
734	Swedish	SA2880A					3156,4	13,6	41,1	4378,1	12956,3	625,3	22,0	-12,3	-87,7	17,0	0,09	0,09	0,09	0,41	0,31
735	Swedish	KA2862A					3160,0	13,6	46,5	4600,0	13200,0	667,0	8,0	-12,5	-91,3	8,5	0,08	0,08	0,08	0,42	0,33
736	Swedish	KA2862A					3230,0	13,6	41,4	4720,0	13300,0	666,0	8,0	-12,7	-90,8	8,5	0,08	0,08	0,08	0,42	0,33
737	Swedish	KLX02					3300,0	11,3	3,2	4820,0	13600,0	806,0	24,0	-12,1	-85,2	4,2	0,08	0,08	0,08	0,41	0,35
738	Swedish	KLX02					3800,0	10,4	2,1	5620,0	15800,0	1010,0	8,0	-11,7	-78,6	7,6	0,07	0,07	0,07	0,37	0,42
739	Swedish	KLX02					3780,0	10,5	2,5	5720,0	16000,0	898,9	13,0	-12,0	-83,7	0,2	0,06	0,06	0,06	0,40	0,41
740	Swedish	KLX02					3930,0	10,2	2,2	6110,0	16800,0	928,8	12,0	-12,0	-82,3	4,2	0,06	0,06	0,06	0,39	0,43
741	Swedish	KLX02					4190,0	12,0	2,1	6810,0	18500,0	949,8	11,0	-11,9	-80,7	0,2	0,05	0,05	0,05	0,37	0,47
742	Swedish	KLX02					4640,0	14,2	2,6	8000,0	21500,0	943,8	11,0	-11,4	-77,1	4,2	0,05	0,05	0,05	0,33	0,52
743	Swedish	KLX02					5750,0	18,2	2,2	11000,0	29100,0	949,8	10,0	-10,4	-66,0	0,2	0,03	0,03	0,03	0,24	0,66
744	Swedish	KLX02					6520,0	20,5	2,3	12700,0	33100,0	955,8	11,0	-9,9	-60,2	4,2	0,03	0,03	0,03	0,19	0,74
745	Swedish	KLX02					7330,0	25,6	2,6	15800,0	39700,0	946,8	12,0	-9,5	-53,2	0,2	0,01	0,01	0,01	0,12	0,86
746	Swedish	KLX02					7740,0	30,6	3,1	17100,0	43300,0	925,8	12,0	-9,8	-49,4	4,2	-1.#IND	-1.#IND	-1.#IND	-1.#IND	-1.#IND
747	Swedish	KLX02					7690,0	30,0	2,9	16900,0	43500,0	913,8	11,0	-9,0	-49,8	0,2	0,00	0,00	0,00	0,08	0,91
748	Swedish	KLX02					7860,0	34,2	2,9	17500,0	44800,0	913,8	10,0	-9,1	-48,1	4,2	0,00	0,00	0,00	0,06	0,94
749	Swedish	KLX02					8030,0	29,0	2,7	18600,0	45500,0	832,0	9,0	-8,9	-47,4	26,0	-1.#IND	-1.#IND	-1.#IND	-1.#IND	-1.#IND
750	Äspö_Geom_K	KA1061A	1998-03-04 14:00	1551541,366	6367258,175	-144,902	1690,0	45,00	183,0	163,0	3630,0	395,0	193	-6,70	-58,7	0,00	0,17	0,61	0,07	0,07	0,07
751	Äspö_Geom_K	KA1061A	1998-09-30 11:00	1551541,366	6367258,175	-144,902	1440,0	46,40	142,0	134,0	2780,0	311,0	186	-7,30	-73,5	17,90	0,08	0,64	0,12	0,08	0,08
752	Äspö_Geom_K	KA1061A	1999-04-12 14:00	1551541,366	6367258,175	-144,902	1600,0	46,10	166,5	147,0	2940,0	354,0	187	-7,00	-58,6	17,10	0,13	0,66	0,07	0,07	0,07
753	Äspö_Geom_K	KA1061A	1999-10-01 08:30	1551541,366	6367258,175	-144,902	1580,0	44,50	166,0	162,0	2870,0	353,0	185	-7,00	-58,9	16,50	0,12	0,66	0,07	0,07	0,07
754	Äspö_Geom_K	KA1061A	2000-09-22 10:00	1551541,366	6367258,175	-144,902	1620,0	45,00	172,0	174,0	3080,0	350,0	181	-7,00	-59,5	17,90	0,13	0,65	0,07	0,07	0,07
755	Äspö_Geom_K	KA1061A	2001-09-26 09:00	1551541,366	6367258,175	-144,902	1510,0	42,10	144,0	144,0	2680,0	308,0	190	-6,90	-57,2	11,50	0,08	0,71	0,07	0,07	0,07
756	Äspö_Geom_K	KA1131B	1997-10-08 10:00	1551531,090	6367328,062	-155,272	1650,0	26,00	136,0	440,0	3538,4	258,0	272	-7,30	-61,5	0,00	0,07	0,64	0,16	0,07	0,07
757	Äspö_Geom_K	KA1131B	1998-03-04 14:00	1551531,090	6367328,062	-155,272	1680,0	22,80	140,0	448,0	3720,0	263,0	277	-7,40	-61,5	0,00	0,07	0,62	0,17	0,07	0,07
758	Äspö_Geom_K	KA1131B	1998-09-30 11:30	1551531,090	6367328,062	-155,272	1540,0	22,60	119,0	405,0	3410,0	245,0	274	-7,00	-67,8	13,50	0,06	0,59	0,22	0,06	0,06
759	Äspö_Geom_K	KA1131B	1999-04-09 08:20	1551531,090	6367328,062	-155,272	1670,0	21,50	130,3	419,0	3370,0	257,5	272	-7,30	-60,2	12,70	0,07	0,62	0,18	0,07	0,07
760	Äspö_Geom_K	KA1131B	1999-09-30 10:00	1551531,090	6367328,062	-155,272	1600,0	20,70	125,0	417,0	3380,0	244,0	260	-7,50	-60,9	13,90	0,07	0,60	0,20	0,07	0,07
761	Äspö_Geom_K	KA1131B	2000-09-21 09:00	1551531,090	6367328,062	-155,272	1590,0	23,50	130,0	407,0	3240,0	261,0	257	-7,30	-61,6	10,60	0,07	0,62	0,18	0,07	0,07
762	Äspö_Geom_K	KA1131B	2001-09-26 09:00	1551531,090	6367328,062	-155,272	1610,0	24,40	127,0	365,0	3110,0	259,0	249	-7,20	-58,1	10,10	0,06	0,64	0,16	0,06	0,06
763	Äspö_Geom_K	KA1755A	1995-10-12 12:47	1551287,263	6367977,691	-267,499	2682,1	9,30	40,7	3400,3	10425,0	640,3	9	-13,10	-91,9	0,00	0,09	0,09	0,09	0,46	0,27
764	Äspö_Geom_K	KA1755A	1996-05-21 12:08	1551287,263	6367977,691	-267,499	2836,0	9,50	37,6	3540,5	10565,0	697,6	9	-13,70	-92,2	0,00	0,08	0,08	0,08	0,47	0,29
765	Äspö_Geom_K	KA1755A	1997-03-11 17:04	1551287,263	6367977,691	-267,499	2953,4	8,65	39,3	3744,3	11283,1	646,9	8	-13,00	-95,3	0,00	0,08	0,08	0,08	0,47	0,29
766	Äspö_Geom_K	KA1755A	1997-10-01 17:00	1551287,263	6367977,691	-267,499	2960,0	10,40	36,1	4020,0	11097,8	658,8	8	-12,80	-95,3	1,20	0,08	0,08	0,08	0,46	0,30
767	Äspö_Geom_K	KA1755A	1998-03-05 15:00	1551287,263	6367977,691	-267,499	2840,0	10,10	38,0	3620,0	11400,0	663,0	8	-12,80	-94,7	0,00	0,08	0,08	0,08	0,46	0,29
768	Äspö_Geom_K	KA1755A	1998-09-29 09:45	1551287,263	6367977,691	-267,499	2820,0	9,20	34,0	3730,0	11300,0	654,0	7	-12,70	-102,4	2,90	0,07	0,07	0,07	0,49	0,29
769	Äspö_Geom_K	KA1755A	1999-04-08 11:30	1551287,263	6367977,691	-267,499	2900,0	9,50	35,6	3817,0	11460,0	626,0	8	-12,80	-94,8	1,30	0,08	0,08	0,08	0,46	0,29
770	Äspö_Geom_K	KA1755A	1999-09-30 08:30	1551287,263	6367977,691	-267,499	2890,0	10,00	37,6	3898,0	11360,0	615,0	4	-12,80	-92,3	1,10	0,09	0,09	0,09	0,45	0,29
771	Äspö_Geom_K	KA1755A	2000-09-21 09:00	1551287,263	6367977,691	-267,499	2960,0	10,50	35,5	4130,0	11430,0	613,0	9	-12,90	-95,2	0,80	0,08	0,08	0,08	0,46	0,29
772	Äspö_Geom_K	KA1755A	2001-10-16 10:00	1551287,263	6367977,691	-267,499	3050,0	11,60	36,6	4200,0	11720,0	646,0	9	-12,80	-91,9	0,80	0,08	0,08	0,08	0,44	0,30
773	Äspö_Geom_K	KA2050A	1997-09-30 14:45	1551671,590	6367976,487	-400,222	1660,0	18,40	66,6	1280,0	4960,5	329,6	28	-10,30	-83,2	0,00	0,14	0,14	0,37	0,20	0,14
774	Äspö_Geom_K	KA2050A	1998-03-06 11:00	1551671,590	6367976,487	-400,222	1700,0	15,60	70,7	1250,0	5220,0	330,0	34	-10,40	-82,7	0,00	0,14	0,14	0,36	0,21	0,14
775	Äspö_Geom_K	KA2050A	1998-09-30 10:00	1551671,590	6367976,487	-400,222	1540,0	15,10	63,1	1120,0	4720,0	324,0	41	-10,30	-86,8	6,10	0,14	0,14	0,39	0,21	0,14
776	Äspö_Geom_K	KA2050A	1999-04-08 11:30	1551671,590	6367976,487	-400,222	1600,0	15,50	65,6	1085,0	4510,0	301,0	52	-10,00	-80,0	4,40	0,14	0,15	0,44	0,14	0,14
777	Äspö_Geom_K	KA2050A	1999-09-30 08:30	1551671,590	6367976,487	-400,222	1510,0	15,30	67,7	975,0	4180,0	303,0	65	-9,70	-76,3	9,00	0,13	0,20	0,42	0,13	0,13
778	Äspö_Geom_K	KA2050A	2000-09-21 09:30	1551671,590	6367976,487	-400,222	1500,0	15,80	70,0	857,0	3670,0	274,0	94	-9,10	-72,0	8,90	0,11	0,28	0,39	0,11	0,11
779	Äspö_Geom_K	KA2050A	2001-09-24 09:00	1551671,590	6367976,487	-400,222	1450,0	15,70	66,2	624,0	3180,0	262,0	131	-8,70	-68,7	7,00	0,09	0,35	0,37	0,09	0,09
780	Äspö_Geom_K	KA2162B	1997-09-30 18:00	1551403,010	6367767,539	-342,439	2105,5	9,33	85,7	1516,8	6000,8	377,3	57	-9,40	-76,4	0,00	0,16	0,16	0,35	0,18	0,16
781	Äspö_Geom_K	KA2162B	1998-03-04 19:00	1551403,010	6367767,539	-342,439	2060,0	9,75	87,5	1480,0	5940,0	365,0	64	-9,40	-74,3	2,80	0,15	0,16	0,38	0,15	0,15
782	Äspö_Geom_K	KA2162B	1998-09-28 16:00	1551403,010	6367767,539	-342,439	1870,0	9,30	76,7	1370,0	5930,0	364,0	60	-9,40	-82,5	4,20	0,15	0,15	0,36	0,20	0,15
783	Äspö_Geom_K	KA2162B	1999-04-08 16:25	1551403,010	6367767,539	-342,439	2000,0	9,20	75,3	1489,0	5830,0	358,0	70	-9,50	-74,1	3,70	0,15	0,15	0,39	0,15	0,15
784	Äspö_Geom_K	KA2162B	1999-09-30 10:00	1551403,010	6367767,539	-342,439	2070,0	9,10	74,5	1651,0	6190,0	373,0	49	-9,80	-76,1	3,70	0,15	0,15	0,32	0,22	0,15
785	Äspö_Geom_K	KA2162B	2000-09-21 13:00	1551403,010	6367767,539	-342,439	2080,0	10,30	70,9	1890,0	6390,0	349,0	45	-10,10	-78,6	2,70	0,15	0,15	0,28	0,26	0,15
786	Äspö_Geom_K	KA2162B	2001-09-24 10:30	1551403,010	6367767,539	-342,439	2260,0	11,10	71,8	1700,0	6550,0	372,0	42	-10,10	-77,9	1,60	0,16	0,16	0,26	0,27	0,16
787	Äspö_Geom_K	KA2511A	1997-09-30 10:00	1551249,207	6367641,832	-412,569	1560,0	11,10	80,7	496,0	3380,0	335,0	232	-7,50	-64,1	0,00	0,08	0,46	0,30	0,08	0,08
788	Äspö_Geom_K	KA2511A	1998-03-05 16:30	1551298,965	6367694,228	-364,119	1650,0	7,60	88,1	748,0	4080,0	263,0	170	-8,30	-68,0	0,00	0,10	0,36	0,36	0,10	0,10
789	Äspö_Geom_K	KA2511A	1998-03-05 16:30	1551276,108	6367670,158	-386,435	1600,0	10,90	97,9	452,0	3350,0	315,0	217	-7,30	-60,7	14,60	0,08	0,50	0,27	0,08	0,08
790	Äspö_Geom_K	KA2511A	1998-09-28 15:00	1551298,965	6367694,228	-364,119	1530,0	6,60	76,4	690,0	3890,0	258,0	171	-8,30	-73,0	9,10	0,09	0,32	0,40	0,09	0,09
791	Äspö_Geom_K	KA2511A	1998-09-28 20:00	1551276,108	6367670,158	-386,435	1490,0	11,60	91,2	408,0	3230,0	300,0	221	-7,30	-67,5	14,40	0,08	0,47	0,30	0,08	0,08
792	Äspö_Geom_K	KA2511A	1999-04-08 13:50	1551265,235	6367658,718	-397,012	1580,0	6,80	66,1	522,0	3360,0	270,0	162	-8,00	-64,6	10,70	0,09	0,37	0,36	0,09	0,09
793	Äspö_Geom_K	KA2511A	1999-04-08 15:30	1551269,812	6367663,534	-392,559	1560,0	10,10	93,9	405,0	3120,0	282,0	223	-7,40	-63,6	14,30	0,07	0,49	0,29	0,07	0,07

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
794	Äspö_Geom_K	KA2511A	1999-09-30 09:00	1551269,812	6367663,534	-392,559	1540,0	10,70	91,9	428,0	3060,0	282,0	219	-7,40	-60,7	14,20	0,07	0,50	0,28	0,07	0,07
795	Äspö_Geom_K	KA2511A	1999-09-30 09:00	1551265,235	6367658,718	-397,012	1610,0	6,90	62,0	582,0	3470,0	286,0	147	-8,20	-65,8	11,70	0,09	0,34	0,38	0,09	0,09
796	Äspö_Geom_K	KA2511A	2001-09-24 10:30	1551269,812	6367663,534	-392,559	1600,0	10,60	86,0	464,0	3110,0	288,0	221	-7,60	-61,2	8,60	0,08	0,48	0,29	0,08	0,08
797	Äspö_Geom_K	KA2511A	2001-09-24 14:00	1551265,235	6367658,718	-397,012	1640,0	7,31	59,9	587,0	3420,0	272,0	147	-8,20	-64,6	10,60	0,09	0,35	0,37	0,09	0,09
798	Äspö_Geom_K	KA2512A	1997-03-11 14:27	1551328,270	6367727,154	-335,442	1681,2	9,80	99,5	541,1	3720,0	274,9	234	-7,60	-62,5	0,00	0,08	0,48	0,28	0,08	0,08
799	Äspö_Geom_K	KA2563A	1997-09-30 13:00	1551219,958	6367688,756	-465,555	2140,0	8,97	44,6	1670,0	6296,5	452,1	10	-9,90	-78,0	0,00	0,16	0,16	0,20	0,33	0,16
800	Äspö_Geom_K	KA2563A	1998-03-05 16:30	1551201,410	6367671,978	-487,082	1960,0	9,00	61,8	1170,0	5160,0	335,0	80	-8,80	-71,0	0,00	0,14	0,21	0,38	0,14	0,14
801	Äspö_Geom_K	KA2563A	1998-09-28 19:30	1551219,958	6367688,756	-465,555	1800,0	8,70	57,8	1000,0	4830,0	332,0	78	-8,70	-73,5	7,60	0,13	0,21	0,40	0,13	0,13
802	Äspö_Geom_K	KA2563A	1999-04-08 10:00	1551219,958	6367688,756	-465,555	2000,0	9,70	45,3	1310,0	5350,0	331,0	29	-9,10	-72,9	4,20	0,15	0,15	0,40	0,16	0,15
803	Äspö_Geom_K	KA2563A	1999-04-08 10:50	1551209,313	6367679,089	-477,974	1960,0	8,10	41,7	1210,0	5010,0	343,0	71	-9,70	-76,5	4,30	0,14	0,14	0,40	0,18	0,14
804	Äspö_Geom_K	KA2563A	1999-09-28 09:15	1551219,958	6367688,756	-465,555	1790,0	8,00	54,7	938,0	4480,0	338,0	95	-8,60	-69,3	6,40	0,12	0,24	0,39	0,12	0,12
805	Äspö_Geom_K	KA2563A	1999-09-28 09:15	1551209,313	6367679,089	-477,974	2090,0	8,86	41,3	1370,0	5730,0	388,0	21	-11,00	-84,7	5,40	0,14	0,14	0,20	0,37	0,14
806	Äspö_Geom_K	KA2563A	1999-09-28 12:45	1551188,911	6367660,810	-501,332	1790,0	8,22	48,2	946,0	4620,0	310,0	74	-8,50	-69,1	5,90	0,12	0,23	0,40	0,12	0,12
807	Äspö_Geom_K	KA2563A	2000-04-11 09:27	1551188,911	6367660,810	-501,332	1860,0	9,10	52,4	1030,0	4760,0	349,0	63	-8,50	-70,4	4,90	0,13	0,22	0,39	0,13	0,13
808	Äspö_Geom_K	KA2563A	2000-04-11 10:15	1551219,958	6367688,756	-465,555	1550,0	10,80	86,2	396,0	3100,0	263,0	239	-7,30	-60,3	14,10	0,07	0,52	0,28	0,07	0,07
809	Äspö_Geom_K	KA2563A	2001-09-24 10:30	1551219,958	6367688,756	-465,555	1650,0	8,70	68,4	579,0	3410,0	289,0	176	-7,90	-60,5	8,90	0,09	0,41	0,33	0,09	0,09
810	Äspö_Geom_K	KA2858A	1995-03-10 12:16	1551434,047	6368018,275	-382,338	2630,0	9,70	49,7	3360,0	10300,0	577,0	9	-13,10	-96,6	0,00	0,09	0,09	0,09	0,47	0,26
811	Äspö_Geom_K	KA2862A	1995-01-27 09:15	1551477,164	6368018,173	-379,562	3230,0	13,60	41,4	4720,0	13300,0	666,0	8	-12,70	-90,8	0,00	0,08	0,08	0,08	0,42	0,33
812	Äspö_Geom_K	KA2862A	1995-03-10 11:44	1551478,234	6368033,006	-381,635	3160,0	13,60	46,5	4600,0	13200,0	667,0	8	-12,50	-91,3	0,00	0,08	0,08	0,08	0,42	0,33
813	Äspö_Geom_K	KA2862A	1998-03-12 15:00	1551477,689	6368025,451	-380,579	3510,0	13,50	37,6	5250,0	15400,0	764,0	7	-12,50	-89,0	1,40	0,07	0,07	0,07	0,40	0,38
814	Äspö_Geom_K	KA2862A	1998-07-07 10:00	1551477,689	6368025,451	-380,579	3540,0	15,10	29,0	5500,0	15400,0	753,0	2	-12,40	-87,6	0,80	0,07	0,07	0,07	0,40	0,38
815	Äspö_Geom_K	KA2862A	1998-07-22 10:00	1551477,689	6368025,451	-380,579	3610,0	13,10	31,2	5670,0	15700,0	1690,0	2	-12,20	-94,1	0,80	0,03	0,03	0,03	0,36	0,53
816	Äspö_Geom_K	KA2862A	1999-04-12 15:00	1551477,689	6368025,451	-380,579	3690,0	12,00	32,3	5530,0	15860,0	730,0	7	-12,30	-88,1	3,50	0,07	0,07	0,07	0,40	0,39
817	Äspö_Geom_K	KA2862A	1999-10-06 09:20	1551477,689	6368025,451	-380,579	3650,0	14,10	33,3	5632,0	15870,0	712,0	8	-12,30	-87,5	0,80	0,07	0,07	0,07	0,40	0,38
818	Äspö_Geom_K	KA2862A	2000-09-20 10:30	1551477,689	6368025,451	-380,579	3620,0	14,80	29,1	5690,0	15680,0	674,0	8	-12,20	-87,2	0,80	0,08	0,08	0,08	0,40	0,38
819	Äspö_Geom_K	KA2862A	2001-09-24 10:00	1551477,689	6368025,451	-380,579	3850,0	15,80	30,6	5200,0	16140,0	770,0	8	-12,00	-85,3	0,80	0,08	0,08	0,08	0,37	0,39
820	Äspö_Geom_K	KA2865A01	1999-04-27 10:00	1551497,499	6368033,608	-381,348	1990,0	11,40	67,1	1858,0	6540,0	374,0	123	-10,10	-77,3	7,30	0,15	0,15	0,35	0,20	0,15
821	Äspö_Geom_K	KA3005A	1995-03-10 12:33	1551588,974	6367998,520	-402,753	1740,0	12,70	85,6	1310,0	5400,0	305,0	57	-10,00	-80,5	0,00	0,14	0,14	0,42	0,15	0,14
822	Äspö_Geom_K	KA3005A	1996-04-11 07:10	1551581,518	6368000,899	-403,346	1730,0	13,60	82,5	1191,4	4878,3	350,6	93	-10,00	-75,5	6,70	0,14	0,19	0,40	0,14	0,14
823	Äspö_Geom_K	KA3010A	1995-03-10 12:44	1551638,836	6367986,325	-400,555	1890,0	15,10	82,2	1820,0	6600,0	336,0	43	-11,30	-87,9	0,00	0,15	0,15	0,22	0,34	0,15
824	Äspö_Geom_K	KA3065A03	2000-02-07 08:35				2010,0	11,70	49,5	1910,0	6270,0	366,0	46	-11,30	-84,8	3,10	0,14	0,14	0,19	0,38	0,14
825	Äspö_Geom_K	KA3067A	1995-03-10 13:49	1551693,774	6367933,350	-410,919	1880,0	11,20	66,6	1950,0	6560,0	350,0	26	-11,70	-91,1	0,00	0,14	0,14	0,14	0,43	0,14
826	Äspö_Geom_K	KA3067A	1996-04-10 10:55	1551672,397	6367931,984	-409,116	2374,3	12,70	49,3	2705,7	8584,9	426,1	10	-13,00	-95,2	1,20	0,11	0,11	0,11	0,47	0,20
827	Äspö_Geom_K	KA3105A	1995-03-10 13:21	1551660,452	6367894,541	-415,508	1260,0	8,00	101,0	754,0	3520,0	217,0	125	-8,70	-73,5	0,00	0,09	0,32	0,40	0,09	0,09
828	Äspö_Geom_K	KA3110A	1995-03-10 13:31	1551618,056	6367877,261	-415,580	1600,0	20,00	133,0	656,0	3940,0	286,0	161	-9,20	-64,3	0,00	0,10	0,44	0,27	0,10	0,10
829	Äspö_Geom_K	KA3110A	1998-03-06 09:00	1551618,056	6367877,261	-415,580	1530,0	23,60	125,0	432,0	3390,0	303,0	178	-7,70	-63,1	15,60	0,08	0,54	0,21	0,08	0,08
830	Äspö_Geom_K	KA3110A	1998-09-28 14:30	1551618,056	6367877,261	-415,580	1370,0	26,80	113,0	362,0	3100,0	283,0	177	-7,70	-68,0	13,50	0,08	0,52	0,23	0,08	0,08
831	Äspö_Geom_K	KA3110A	1999-04-12 11:00	1551618,056	6367877,261	-415,580	1480,0	24,30	121,2	385,0	3080,0	276,0	181	-7,80	-63,6	12,70	0,08	0,54	0,22	0,08	0,08
832	Äspö_Geom_K	KA3110A	1999-10-01 09:00	1551618,056	6367877,261	-415,580	1500,0	29,10	141,3	416,0	3200,0	325,0	184	-7,60	-61,1	13,60	0,08	0,60	0,15	0,08	0,08
833	Äspö_Geom_K	KA3110A	2000-09-20 10:00	1551618,056	6367877,261	-415,580	1470,0	30,40	128,0	372,0	3080,0	277,0	185	-6,90	-62,0	12,40	0,07	0,63	0,15	0,07	0,07
834	Äspö_Geom_K	KA3110A	2001-10-15 10:00	1551618,056	6367877,261	-415,580	1430,0	35,10	128,0	257,0	2730,0	269,0	196	-7,30	-58,9	12,20	0,07	0,66	0,13	0,07	0,07
835	Äspö_Geom_K	KA3385A	1995-01-11 08:05	1551383,969	6367776,707	-445,982	2080,0	8,50	60,5	1861,0	6650,0	443,0	10	-10,40	-79,3	0,00	0,16	0,16	0,17	0,36	0,16
836	Äspö_Geom_K	KA3385A	1995-03-10 13:03	1551400,315	6367749,279	-448,710	2090,0	8,40	63,1	1860,0	6710,0	450,0	10	-10,50	-81,8	0,00	0,15	0,15	0,15	0,38	0,16
837	Äspö_Geom_K	KA3385A	1998-03-02 16:00	1551400,290	6367749,322	-448,705	2180,0	9,00	67,6	1820,0	6630,0	428,0	11	-10,10	-79,2	4,60	0,16	0,16	0,19	0,33	0,16
838	Äspö_Geom_K	KA3385A	1998-09-28 14:00	1551400,290	6367749,322	-448,705	2150,0	8,81	61,6	1800,0	6690,0	395,3	11	-10,10	-87,1	2,80	0,15	0,15	0,17	0,38	0,15
839	Äspö_Geom_K	KA3385A	1999-04-06 16:45	1551387,536	6367770,717	-446,575	2160,0	7,90	65,9	1855,0	6930,0	428,0	10	-10,10	-78,1	2,40	0,16	0,16	0,19	0,34	0,16
840	Äspö_Geom_K	KA3385A	1999-09-29 09:15	1551400,290	6367749,322	-448,705	2350,0	9,60	66,1	1974,0	7010,0	403,0	10	-10,50	-83,2	1,10	0,15	0,15	0,15	0,38	0,16
841	Äspö_Geom_K	KA3385A	2000-04-10 09:30	1551400,315	6367749,279	-448,710	2200,0	10,30	64,9	1890,0	6900,0	411,0	10	-10,30	-82,1	2,60	0,16	0,16	0,16	0,36	0,16
842	Äspö_Geom_K	KA3385A	2001-09-28 09:00	1551400,315	6367749,279	-448,710	2220,0	10,70	70,9	1850,0	6670,0	375,0	12	-12,50	-79,4	0,80	0,15	0,15	0,15	0,41	0,16
843	Äspö_Geom_K	KA3539G	1998-03-02 08:00	1551225,352	6367761,715	-449,163	1720,0	8,90	90,5	632,0	3750,0	308,0	202	-7,70	-62,5	0,00	0,09	0,44	0,30	0,09	0,09
844	Äspö_Geom_K	KA3539G	1998-08-02 16:00	1551222,890	6367761,384	-463,956	1610,0	9,20	77,7	643,0	3840,0	322,0	180	-7,70	-71,9	0,80	0,10	0,36	0,35	0,10	0,10
845	Äspö_Geom_K	KA3542G01	1998-07-31 09:07	1551222,214	6367750,169	-459,644	1640,0	9,70	76,1	695,0	4020,0	358,0	172	-7,90	-70,1	11,90	0,10	0,35	0,34	0,10	0,10
846	Äspö_Geom_K	KA3542G01	1998-07-31 10:00	1551222,445	6367745,929	-463,883	1680,0	9,70	75,9	755,0	4150,0	361,0	156	-7,90	-67,7	8,30	0,11	0,35	0,33	0,11	0,11
847	Äspö_Geom_K	KA3542G01	1998-07-31 10:45	1551222,330	6367748,049	-461,764	1610,0	9,20	73,8	678,0	3940,0	355,0	170	-7,80	-70,6	8,90	0,10	0,35	0,35	0,10	0,10
848	Äspö_Geom_K	KA3542G02	1998-07-27 12:05	1551221,326	6367763,905	-451,134	1620,0	9,20	72,8	697,0	3980,0	354,0	156	-7,90	-71,3	11,60	0,11	0,33	0,36	0,11	0,11
849	Äspö_Geom_K	KA3542G02	1998-07-27 16:20	1551221,187	6367765,331	-452,528	1590,0	8,90	83,3	573,0	3730,0	325,0	200	-7,40	-72,8	11,80	0,09	0,39	0,34	0,09	0,09
850	Äspö_Geom_K	KA3542G02	1998-07-28 15:22	1551220,770	6367769,612	-456,712	1620,0	9,50	79,4	624,0	3890,0	328,0	188	-7,40	-64,6	12,60	0,09	0,42	0,31	0,09	0,09
851	Äspö_Geom_K	KA3545G	1998-03-02 08:00	1551219,325	6367761,297	-449,075	1730,0	8,20	87,2	639,0	3790,0	297,0	192	-7,70	-61,7	0,00	0,09	0,43	0,30	0,09	0,09
852	Äspö_Geom_K	KA3548A01	1998-08-05 09:53	1551216,042	6367753,391	-446,819	1540,0	8,70	81,8	555,0	3630,0	296,0	190	-7,00	-77,0	10,20	0,09	0,38	0,36	0,09	0,09
853	Äspö_Geom_K	KA3548A01	1998-08-06 08:48	1551216,283	6367749,403	-447,037	1560,0	8,70	79,6	586,0	3620,0	299,0	190	-7,60	-63,0	0,00	0,09	0,43	0,32	0,09	0,09
854	Äspö_Geom_K	KA3548A01	1998-08-07 12:30	1551216,825	6367740,433	-447,526	1580,0	8,80	84,0	561,0	3650,0	306,0	204	-7,60	-71,4	12,40	0,09	0,39	0,34	0,09	0,09

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
855	Äspö_Geom_K	KA3554G01	1998-07-24 08:58	1551210,718	6367743,037	-465,787	1870,0	11,90	89,0	753,0	4200,0	346,0	170	-7,90	-72,4	12,20	0,11	0,35	0,32	0,11	0,11
856	Äspö_Geom_K	KA3554G01	1998-07-24 09:40	1551210,584	6367745,153	-463,664	1750,0	9,70	67,1	898,0	4580,0	338,4	130	-8,40	-76,9	8,00	0,12	0,25	0,39	0,12	0,12
857	Äspö_Geom_K	KA3554G02	1998-07-21 10:00	1551209,058	6367768,759	-456,569	1630,0	9,90	89,1	553,0	3790,0	299,0	213	-7,40	-64,4	13,00	0,08	0,45	0,30	0,08	0,08
858	Äspö_Geom_K	KA3554G02	1998-07-21 13:10	1551209,013	6367769,464	-457,276	1640,0	9,50	74,8	643,0	3910,0	326,0	178	-7,80	-72,5	10,20	0,10	0,35	0,36	0,10	0,10
859	Äspö_Geom_K	KA3566G01	1999-04-09 10:00	1551198,109	6367750,511	-457,215	1850,0	9,30	85,3	783,0	4020,0	317,0	165	-8,10	-64,2	10,10	0,10	0,38	0,32	0,10	0,10
860	Äspö_Geom_K	KA3566G01	1999-04-16 08:00	1551198,428	6367744,495	-463,211	1810,0	8,80	83,0	783,0	4070,0	321,0	164	-8,00	-67,4	11,00	0,10	0,36	0,33	0,10	0,10
861	Äspö_Geom_K	KA3566G02	1999-04-08 16:00	1551196,973	6367769,078	-457,054	1840,0	9,90	98,0	693,0	4110,0	277,0	192	-7,60	-62,9	7,00	0,09	0,44	0,28	0,09	0,09
862	Äspö_Geom_K	KA3566G02	1999-04-15 08:00	1551196,612	6367774,117	-461,899	1880,0	8,10	89,0	754,0	4210,0	298,0	165	-8,00	-66,4	7,60	0,10	0,37	0,33	0,10	0,10
863	Äspö_Geom_K	KA3566G02	1999-05-03 08:00	1551197,206	6367765,839	-453,939	1860,0	7,30	74,0	775,0	4240,0	303,0	101	-8,40	-69,7	7,80	0,12	0,28	0,38	0,12	0,12
864	Äspö_Geom_K	KA3573A	1998-09-28 16:00	1551192,744	6367738,875	-446,700	1610,0	9,70	89,5	541,0	3640,0	302,0	214	-7,50	-70,0	10,70	0,09	0,42	0,32	0,09	0,09
865	Äspö_Geom_K	KA3573A	1998-09-28 16:30	1551191,919	6367752,341	-446,197	1610,0	10,00	88,2	542,0	3670,0	289,0	215	-7,40	-69,5	11,40	0,08	0,43	0,32	0,08	0,08
866	Äspö_Geom_K	KA3573A	1999-04-07 09:10	1551192,744	6367738,875	-446,700	1770,0	9,10	73,2	872,0	4290,0	339,0	136	-8,30	-66,8	10,90	0,11	0,32	0,35	0,11	0,11
867	Äspö_Geom_K	KA3573A	1999-04-07 15:00	1551191,919	6367752,341	-446,197	1720,0	9,70	81,0	742,0	4060,0	311,0	171	-8,00	-65,3	8,90	0,10	0,38	0,32	0,10	0,10
868	Äspö_Geom_K	KA3573A	1999-09-29 09:15	1551191,919	6367752,341	-446,197	1660,0	9,90	89,4	530,0	3450,0	278,0	215	-7,40	-63,7	14,30	0,08	0,47	0,30	0,08	0,08
869	Äspö_Geom_K	KA3573A	1999-09-29 10:00	1551192,744	6367738,875	-446,700	1530,0	10,10	90,9	475,0	3230,0	276,0	231	-7,50	-61,4	14,30	0,07	0,49	0,29	0,07	0,07
870	Äspö_Geom_K	KA3590G01	1998-07-07 08:30	1551173,770	6367756,973	-448,735	1660,0	10,30	74,7	723,0	4200,0	349,0	167	-8,80	-64,8	7,00	0,11	0,34	0,34	0,11	0,11
871	Äspö_Geom_K	KA3590G01	1998-07-08 08:40	1551174,220	6367751,991	-453,632	1820,0	11,20	91,5	803,0	4250,0	304,0	184	-8,80	-63,7	10,50	0,10	0,37	0,32	0,10	0,10
872	Äspö_Geom_K	KA3590G02	1998-06-26 10:00	1551172,487	6367775,974	-464,670	1780,0	11,46	96,2	655,0	3940,0	291,7	210	-8,40	-62,8	0,00	0,09	0,43	0,30	0,09	0,09
873	Äspö_Geom_K	KA3590G02	1999-04-13 08:00	1551173,254	6367764,673	-453,799	1940,0	8,80	94,5	767,0	4270,0	294,0	151	-8,10	-65,0	7,70	0,10	0,37	0,31	0,10	0,10
874	Äspö_Geom_K	KA3590G02	1999-04-13 08:00	1551172,814	6367771,151	-460,031	1910,0	11,10	95,8	715,0	4220,0	279,0	198	-7,70	-64,5	7,60	0,09	0,43	0,29	0,09	0,09
875	Äspö_Geom_K	KA3593G	1998-03-02 08:00	1551171,521	6367758,213	-448,045	2020,0	8,50	75,9	950,0	4900,0	366,0	105	-9,00	-71,7	0,00	0,13	0,22	0,37	0,13	0,13
876	Äspö_Geom_K	KA3593G	1999-04-15 08:00	1551171,294	6367758,187	-449,325	2100,0	8,90	76,7	974,0	4810,0	406,0	105	-9,10	-74,1	4,50	0,14	0,20	0,38	0,14	0,14
877	Äspö_Geom_K	KA3600F	1998-03-09 10:05	1551160,281	6367753,219	-445,698	1750,0	9,40	91,3	656,0	3730,0	298,0	194	-7,60	-63,0	10,00	0,09	0,44	0,29	0,09	0,09
878	Äspö_Geom_K	KA3600F	1998-09-28 17:00	1551160,281	6367753,219	-445,698	1580,0	9,00	77,8	590,0	3830,0	298,0	195	-7,70	-73,4	9,80	0,09	0,36	0,36	0,09	0,09
879	Äspö_Geom_K	KA3600F	1998-09-28 18:30	1551145,680	6367743,586	-446,215	1750,0	12,10	97,1	632,0	4150,0	291,0	220	-7,50	-66,0	8,10	0,09	0,46	0,28	0,09	0,09
880	Äspö_Geom_K	KA3600F	1999-04-09 09:00	1551160,281	6367753,219	-445,698	1990,0	7,70	66,4	1157,0	4870,0	346,0	99	-8,70	-69,7	6,80	0,13	0,23	0,37	0,13	0,13
881	Äspö_Geom_K	KA3600F	1999-04-09 09:00	1551145,680	6367743,586	-446,215	2090,0	9,50	70,0	1243,0	5180,0	365,0	100	-8,90	-72,1	5,50	0,14	0,21	0,37	0,14	0,14
882	Äspö_Geom_K	KA3600F	1999-09-29 08:30	1551160,281	6367753,219	-445,698	1680,0	10,20	80,0	548,0	3480,0	284,0	204	-7,70	-64,3	11,90	0,08	0,43	0,31	0,08	0,08
883	Äspö_Geom_K	KA3600F	1999-09-29 08:30	1551145,680	6367743,586	-446,215	1980,0	8,00	47,2	1225,0	5420,0	391,0	58	-9,40	-74,7	5,30	0,15	0,15	0,38	0,18	0,15
884	Äspö_Geom_K	KA3600F	2001-10-15 10:30	1551130,244	6367733,404	-446,758	2130,0	9,17	43,7	1650,0	5950,0	454,0	19	-9,90	-76,4	2,20	0,16	0,16	0,23	0,31	0,16
885	Äspö_Geom_K	KA3600F	2001-10-15 10:45	1551128,158	6367732,029	-446,831	1830,0	9,76	66,9	934,0	4600,0	341,0	110	-8,50	-67,2	5,10	0,12	0,28	0,35	0,12	0,12
886	Äspö_Geom_K	KAS03	1997-03-13 10:30	1550972,501	6368271,565	-520,198	2083,6	7,30	42,1	1961,3	6502,0	490,4	8	-13,40	-100,8	0,00	0,10	0,10	0,10	0,52	0,18
887	Äspö_Geom_K	KAS03	1997-03-13 10:35	1550998,327	6368225,950	-97,447	772,0	3,20	26,2	217,0	1542,0	30,2	67	-15,70	-121,7	0,00	0,05	0,05	0,33	0,51	0,05
888	Äspö_Geom_K	KAS03	1997-10-02 16:00	1550972,501	6368271,565	-520,198	2140,0	7,72	38,6	2050,0	6725,7	393,8	8	-13,30	-101,4	0,00	0,10	0,10	0,10	0,53	0,17
889	Äspö_Geom_K	KAS03	1997-10-03 11:00	1550998,327	6368225,950	-97,447	1110,0	5,51	52,6	365,0	2578,0	22,4	65	-14,60	-114,4	0,00	0,07	0,07	0,37	0,42	0,07
890	Äspö_Geom_K	KAS03	1998-03-31 09:15	1550998,327	6368225,950	-97,447	1240,0	6,00	65,1	385,0	2770,0	23,3	66	-14,20	-113,7	0,00	0,07	0,07	0,38	0,40	0,07
891	Äspö_Geom_K	KAS03	1998-10-01 16:00	1550972,501	6368271,565	-520,198	2080,0	6,40	38,2	1900,0	6400,0	449,2	9	-13,20	-110,5	0,80	0,09	0,09	0,09	0,56	0,17
892	Äspö_Geom_K	KAS03	1998-10-05 13:30	1550998,327	6368225,950	-97,447	1180,0	5,30	55,4	369,0	2630,0	25,8	65	-14,50	-126,2	0,80	0,07	0,07	0,30	0,50	0,07
893	Äspö_Geom_K	KAS03	1999-04-12 11:00	1550998,327	6368225,950	-97,447	1280,0	5,40	62,5	411,0	2730,0	24,0	66	-14,40	-111,5	0,80	0,07	0,07	0,38	0,40	0,07
894	Äspö_Geom_K	KAS03	1999-04-14 10:00	1550972,501	6368271,565	-520,198	2010,0	5,80	36,4	1848,0	6370,0	477,0	9	-13,30	-98,6	1,00	0,10	0,10	0,10	0,52	0,17
895	Äspö_Geom_K	KAS03	1999-10-05 10:00	1550998,327	6368225,950	-97,447	1190,0	6,00	64,6	413,0	2940,0	23,0	66	-14,40	-111,6	1,70	0,07	0,07	0,38	0,39	0,07
896	Äspö_Geom_K	KAS03	1999-10-06 10:00	1550972,501	6368271,565	-520,198	2030,0	6,10	37,5	1865,0	6350,0	491,0	10	-13,30	-100,4	0,90	0,10	0,10	0,10	0,53	0,17
897	Äspö_Geom_K	KAS03	2000-09-18 08:25	1550972,501	6368271,565	-520,198	2000,0	6,88	35,1	1820,0	6230,0	378,0	9	-13,40	-99,5	0,80	0,10	0,10	0,10	0,53	0,15
898	Äspö_Geom_K	KAS03	2000-09-22 09:10	1550998,327	6368225,950	-97,447	1170,0	6,07	58,7	426,0	2720,0	19,8	64	-14,50	-111,7	0,80	0,07	0,07	0,38	0,40	0,07
899	Äspö_Geom_K	KAS03	2001-09-25 12:00	1550998,327	6368225,950	-97,447	1290,0	6,76	63,5	425,0	2690,0	22,0	65	-14,40	-112,4	0,80	0,08	0,08	0,37	0,40	0,08
900	Äspö_Geom_K	KAS03	2001-09-27 14:00	1550972,501	6368271,565	-520,198	2070,0	7,34	36,5	1800,0	6100,0	398,0	9	-13,40	-100,2	0,80	0,10	0,10	0,10	0,53	0,16
901	Äspö_Geom_K	KAS09	1995-10-12 12:35	1551466,467	6367401,286	-95,987	1465,1	33,90	139,7	198,9	2804,3	298,3	175	-7,00	-56,7	0,00	0,07	0,68	0,10	0,07	0,07
902	Äspö_Geom_K	KAS09	1997-03-13 08:35	1551466,467	6367401,286	-95,987	1563,0	39,51	168,1	171,2	2874,4	364,3	162	-7,20	-57,2	0,00	0,11	0,65	0,08	0,08	0,08
903	Äspö_Geom_K	KAS09	1997-10-08 14:00	1551466,467	6367401,286	-95,987	1640,0	45,40	177,0	184,0	3199,0	366,6	171	-6,60	-58,1	0,00	0,16	0,63	0,07	0,07	0,07
904	Äspö_Geom_K	KAS09	1998-03-31 10:00	1551466,467	6367401,286	-95,987	1660,0	41,80	178,0	167,0	3100,0	369,0	172	-6,70	-57,6	0,00	0,14	0,64	0,07	0,07	0,07
905	Äspö_Geom_K	KAS09	1998-10-01 11:30	1551466,467	6367401,286	-95,987	1430,0	44,60	141,0	138,0	2780,0	310,0	172	-7,00	-66,7	17,80	0,08	0,67	0,09	0,08	0,08
906	Äspö_Geom_K	KAS09	1999-04-14 10:00	1551466,467	6367401,286	-95,987	1620,0	41,70	169,9	160,0	3020,0	381,0	169	-7,00	-56,3	20,10	0,13	0,64	0,08	0,08	0,08
907	Äspö_Geom_K	KAS09	1999-10-06 10:00	1551466,467	6367401,286	-95,987	1600,0	42,40	163,1	173,0	2910,0	407,0	170	-7,00	-57,9	15,50	0,13	0,63	0,08	0,08	0,08
908	Äspö_Geom_K	KAS09	2000-09-21 10:30	1551466,467	6367401,286	-95,987	1610,0	43,60	173,0	212,0	3020,0	345,0	177	-7,00	-59,4	16,80	0,12	0,65	0,07	0,07	0,07
909	Äspö_Geom_K	KAS09	2001-09-26 10:00	1551466,467	6367401,286	-95,987	1550,0	42,60	149,0	149,0	2720,0	312,0	187	-7,10	-57,1	10,90	0,09	0,70	0,07	0,07	0,07
910	Äspö_Geom_K	KF0051A01	2001-10-16 10:00	1551297,937	6367811,269	-448,234	2460,0	14,50	8,3	916,0	4780,0	1,5	303	-11,70	-89,7	0,00	0,10	0,11	0,58	0,10	0,10
911	Äspö_Geom_K	KF0051A01	2001-10-16 11:00	1551299,156	6367810,607	-449,032	2480,0	9,28	4,2	908,0	5020,0	84,1	371	-12,20	-92,4	0,00	0,10	0,10	0,55	0,14	0,10
912	Äspö_Geom_K	KG0021A01	1998-12-03 09:25	1551228,311	6367784,658	-442,095	1610,0	9,10	86,4	537,0	3630,0	286,0	213	-7,30	-60,2	12,10	0,08	0,48	0,29	0,08	0,08
913	Äspö_Geom_K	KG0021A01	1998-12-07 09:01	1551221,539	6367772,073	-437,540	1600,0	8,00	90,0	516,0	3470,0	285,0	214	-7,40	-60,4	6,00	0,08	0,48	0,29	0,08	0,08
914	Äspö_Geom_K	KG0021A01	1998-12-07 12:57	1551220,637	6367770,395	-436,932	1610,0	9,60	91,7	530,0	3610,0	286,0	217	-7,40	-59,0	8,00	0,08	0,49	0,28	0,08	0,08
915	Äspö_Geom_K	KG0021A01	1998-12-07 16:30	1551220,185	6367769,556	-436,629	1640,0	9,30	92,3	520,0	3560,0	287,0	219	-7,40	-59,2	8,00	0,08	0,49	0,28	0,08	0,08

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
916	Äspö_Geom_K	KG0021A01	1998-12-08 08:45	1551219,734	6367768,717	-436,325	1690,0	9,70	94,8	549,0	3570,0	285,0	217	-7,30	-59,6	6,00	0,08	0,50	0,27	0,08	0,08
917	Äspö_Geom_K	KG0021A01	1998-12-08 12:43	1551219,282	6367767,878	-436,021	1660,0	9,00	93,3	541,0	3480,0	292,0	217	-7,40	-59,6	6,00	0,08	0,49	0,28	0,08	0,08
918	Äspö_Geom_K	KG0021A01	1998-12-09 08:45	1551218,380	6367766,200	-435,414	1580,0	8,70	87,4	504,0	3380,0	294,0	213	-7,20	-59,5	6,00	0,08	0,49	0,28	0,08	0,08
919	Äspö_Geom_K	KG0021A01	1998-12-09 15:00	1551217,025	6367763,682	-434,503	1560,0	8,20	83,9	494,0	3420,0	295,0	208	-7,50	-62,4	7,00	0,08	0,45	0,31	0,08	0,08
920	Äspö_Geom_K	KG0021A01	1998-12-11 08:46	1551214,768	6367759,487	-432,984	1640,0	7,90	90,1	501,0	3340,0	308,0	208	-7,50	-60,7	14,00	0,08	0,47	0,29	0,08	0,08
921	Äspö_Geom_K	KG0048A01	1998-10-08 16:55	1551203,489	6367792,558	-443,246	1720,0	9,90	92,4	617,0	3760,0	300,0	210	-7,60	-73,7	8,10	0,09	0,39	0,33	0,09	0,09
922	Äspö_Geom_K	KG0048A01	1998-10-14 10:00	1551183,765	6367759,131	-433,574	1630,0	9,60	96,1	536,0	3530,0	302,0	219	-7,50	-74,2	11,10	0,09	0,40	0,33	0,09	0,09
923	Äspö_Geom_K	KG0048A01	1998-10-14 12:54	1551183,272	6367758,295	-433,332	1600,0	9,60	94,5	521,0	3490,0	285,0	218	-7,50	-71,3	9,60	0,08	0,42	0,33	0,08	0,08
924	Äspö_Geom_K	KG0048A01	1998-10-16 08:40	1551179,820	6367752,446	-431,640	1730,0	9,80	88,7	687,0	3880,0	312,0	189	-12,70	-117,1	10,70	0,11	0,11	0,30	0,38	0,11
925	Äspö_Geom_K	KI0023B	1998-03-05 09:40	1551240,282	6367704,044	-462,405	1780,0	9,30	60,2	1030,0	5060,0	368,0	96	-8,80	-70,0	0,00	0,13	0,23	0,38	0,13	0,13
926	Äspö_Geom_K	KI0023B	1998-03-05 09:40	1551229,933	6367678,525	-472,983	1920,0	7,80	43,6	1290,0	5590,0	366,0	26	-9,20	-72,2	0,00	0,15	0,15	0,38	0,18	0,15
927	Äspö_Geom_K	KI0023B	1998-03-05 09:40	1551225,154	6367666,565	-477,936	2030,0	6,90	41,5	1450,0	6130,0	406,0	14	-11,30	-87,3	0,00	0,14	0,14	0,15	0,43	0,14
928	Äspö_Geom_K	KI0023B	1998-03-05 09:40	1551216,061	6367643,545	-487,405	1780,0	8,90	47,5	1050,0	5060,0	344,0	61	-8,70	-69,0	0,00	0,13	0,21	0,39	0,13	0,13
929	Äspö_Geom_K	KI0023B	1998-09-28 12:00	1551240,282	6367704,044	-462,405	1650,0	11,20	76,7	735,0	4140,0	339,0	164	-8,00	-70,7	13,90	0,10	0,34	0,34	0,10	0,10
930	Äspö_Geom_K	KI0023B	1998-09-28 12:00	1551229,933	6367678,525	-472,983	1860,0	8,10	43,0	1200,0	5330,0	352,0	31	-9,10	-78,4	4,20	0,14	0,14	0,38	0,19	0,14
931	Äspö_Geom_K	KI0023B	1998-09-28 13:00	1551225,154	6367666,565	-477,936	1960,0	7,00	41,8	1320,0	5750,0	394,0	15	-10,70	-97,3	2,70	0,13	0,13	0,15	0,44	0,13
932	Äspö_Geom_K	KI0023B	1998-09-28 14:00	1551216,061	6367643,545	-487,405	1750,0	7,80	46,1	1020,0	4880,0	350,0	47	-8,60	-76,3	7,60	0,14	0,16	0,43	0,14	0,14
933	Äspö_Geom_K	KI0023B	1999-04-07 11:05	1551240,282	6367704,044	-462,405	1980,0	7,90	44,8	1392,0	5830,0	369,0	24	-9,30	-74,1	4,60	0,15	0,15	0,34	0,21	0,15
934	Äspö_Geom_K	KI0023B	1999-04-07 13:50	1551229,933	6367678,525	-472,983	1930,0	7,50	44,5	1289,0	5360,0	334,0	27	-9,20	-71,7	5,30	0,14	0,14	0,40	0,16	0,14
935	Äspö_Geom_K	KI0023B	1999-04-07 14:00	1551225,154	6367666,565	-477,936	1990,0	6,10	38,8	1365,0	5570,0	354,0	14	-10,80	-83,5	4,60	0,14	0,14	0,24	0,36	0,14
936	Äspö_Geom_K	KI0023B	1999-04-07 14:20	1551253,442	6367735,867	-449,288	1830,0	7,50	61,0	1006,0	4890,0	351,0	81	-8,80	-70,2	4,10	0,13	0,22	0,39	0,13	0,13
937	Äspö_Geom_K	KI0023B	1999-09-27 09:10	1551229,933	6367678,525	-472,983	1970,0	8,00	43,0	1246,0	5060,0	384,0	32	-9,10	-72,6	4,20	0,15	0,15	0,39	0,17	0,15
938	Äspö_Geom_K	KI0023B	1999-09-27 09:15	1551239,576	6367702,314	-463,118	1950,0	7,80	46,0	1203,0	4880,0	350,0	50	-9,20	-72,1	5,70	0,14	0,15	0,42	0,14	0,14
939	Äspö_Geom_K	KI0023B	1999-09-27 09:15	1551225,154	6367666,565	-477,936	2090,0	6,80	39,0	1368,0	5360,0	370,0	15	-10,70	-82,6	1,20	0,14	0,14	0,23	0,35	0,14
940	Äspö_Geom_K	KI0023B	2000-04-10 09:27	1551225,154	6367666,565	-477,936	2090,0	7,40	40,8	1390,0	5890,0	382,0	11	-10,90	-90,1	3,00	0,14	0,14	0,16	0,42	0,14
941	Äspö_Geom_K	KI0023B	2000-04-10 10:00	1551229,933	6367678,525	-472,983	2020,0	9,07	45,5	1360,0	5660,0	369,0	24	-9,60	-74,7	4,50	0,15	0,15	0,33	0,22	0,15
942	Äspö_Geom_K	KI0023B	2000-04-10 10:40	1551216,061	6367643,545	-487,405	1890,0	9,02	44,6	1190,0	5140,0	387,0	26	-8,90	-75,4	4,40	0,15	0,15	0,39	0,17	0,15
943	Äspö_Geom_K	KI0023B	2001-09-24 15:30	1551229,933	6367678,525	-472,983	2070,0	9,53	47,4	1340,0	5530,0	360,0	25	-9,60	-72,7	77,30	0,15	0,15	0,36	0,20	0,15
944	Äspö_Geom_K	KI0023B	2001-09-24 15:30	1551225,154	6367666,565	-477,936	2210,0	7,47	38,3	1370,0	5790,0	366,0	9	-11,10	-85,1	891,50	0,12	0,12	0,30	0,35	0,12
945	Äspö_Geom_K	KI0025F	1997-09-29 18:00	1551265,200	6367656,519	-476,736	2200,0	9,02	40,5	1820,0	6669,9	462,6	8	-10,50	-83,5	0,00	0,15	0,15	0,15	0,40	0,16
946	Äspö_Geom_K	KI0025F	1997-09-29 18:00	1551270,976	6367588,232	-498,812	2090,0	9,83	45,7	1630,0	6100,3	510,8	11	-9,30	-74,5	0,00	0,16	0,16	0,23	0,29	0,16
947	Äspö_Geom_K	KI0025F	1998-03-05 09:41	1551265,200	6367656,519	-476,736	2140,0	7,50	46,4	1540,0	6050,0	377,0	17	-9,80	-77,5	3,60	0,15	0,15	0,27	0,29	0,15
948	Äspö_Geom_K	KI0025F	1998-03-05 09:41	1551271,456	6367582,527	-500,607	2100,0	9,02	47,7	1580,0	6190,0	424,0	16	-9,60	-77,1	0,00	0,15	0,15	0,25	0,29	0,15
949	Äspö_Geom_K	KI0025F	1998-09-28 14:00	1551265,200	6367656,519	-476,736	2150,0	7,50	37,3	1700,0	6200,0	423,0	9	-10,60	-89,0	5,10	0,14	0,14	0,14	0,43	0,15
950	Äspö_Geom_K	KI0025F	1998-09-28 14:00	1551271,456	6367582,527	-500,607	1840,0	9,10	42,1	1270,0	5410,0	414,0	13	-8,80	-79,0	5,50	0,15	0,15	0,34	0,22	0,15
951	Äspö_Geom_K	KI0025F	1999-04-07 10:45	1551271,456	6367582,527	-500,607	1910,0	8,80	42,3	1346,0	5380,0	385,0	13	-8,50	-71,3	4,80	0,15	0,15	0,39	0,15	0,15
952	Äspö_Geom_K	KI0025F	1999-04-07 13:00	1551265,200	6367656,519	-476,736	2090,0	7,60	38,4	1672,0	6560,0	406,0	9	-10,60	-82,0	3,00	0,15	0,15	0,17	0,39	0,15
953	Äspö_Geom_K	KI0025F	1999-09-29 09:15	1551271,576	6367581,101	-501,055	1940,0	8,40	44,0	1297,0	5270,0	378,0	14	-8,80	-69,2	5,10	0,15	0,15	0,40	0,15	0,15
954	Äspö_Geom_K	KI0025F	1999-09-29 10:00	1551265,317	6367655,100	-477,208	2070,0	7,80	39,3	1672,0	6210,0	409,0	11	-10,40	-80,4	2,80	0,15	0,15	0,19	0,36	0,15
955	Äspö_Geom_K	KI0025F	2000-04-10 11:00	1551265,200	6367656,519	-476,736	2150,0	7,86	36,9	1640,0	6220,0	395,0	18	-10,50	-85,7	2,80	0,14	0,14	0,17	0,40	0,14
956	Äspö_Geom_K	KI0025F	2001-09-25 10:00	1551271,576	6367581,101	-501,055	1900,0	9,63	39,5	1260,0	4860,0	374,0	16	-8,90	-69,4	2,80	0,15	0,16	0,40	0,15	0,15
957	Äspö_Geom_K	KI0025F	2001-09-25 12:00	1551265,317	6367655,100	-477,208	2200,0	8,76	37,8	1480,0	6240,0	396,0	9	-10,30	-79,0	1,20	0,15	0,15	0,21	0,34	0,15
958	Äspö_Geom_K	KI0025F02	1998-08-18 08:00	1551247,415	6367671,638	-479,175	1980,0	8,40	43,2	1460,0	5640,0	356,0	53	-10,00	-88,2	1,90	0,14	0,14	0,27	0,31	0,14
959	Äspö_Geom_K	KI0025F02	1999-04-07 16:30	1551249,514	6367686,906	-472,143	2000,0	7,30	42,4	1427,0	5680,0	357,0	14	-9,70	-75,7	2,40	0,15	0,15	0,31	0,25	0,15
960	Äspö_Geom_K	KI0025F02	1999-04-08 14:20	1551247,383	6367671,403	-479,282	2070,0	8,00	43,1	1430,0	5540,0	323,0	22	-9,50	-73,4	3,40	0,15	0,15	0,36	0,21	0,15
961	Äspö_Geom_K	KI0025F02	1999-04-08 15:30	1551248,538	6367679,787	-475,427	1930,0	7,70	42,4	1271,0	5310,0	338,0	27	-9,10	-71,0	5,10	0,15	0,15	0,41	0,15	0,15
962	Äspö_Geom_K	KI0025F02	1999-04-08 15:50	1551244,908	6367653,304	-487,548	2060,0	7,50	39,1	1547,0	5990,0	391,0	11	-10,20	-78,2	2,30	0,15	0,15	0,24	0,32	0,15
963	Äspö_Geom_K	KI0025F02	1999-09-28 09:00	1551249,514	6367686,906	-472,143	2030,0	8,00	41,8	1386,0	5400,0	366,0	19	-9,60	-76,9	7,10	0,15	0,15	0,32	0,24	0,15
964	Äspö_Geom_K	KI0025F02	1999-09-28 09:20	1551247,383	6367671,403	-479,282	1970,0	7,99	38,9	1360,0	5570,0	353,0	25	-9,50	-76,2	5,80	0,14	0,14	0,34	0,23	0,14
965	Äspö_Geom_K	KI0025F02	1999-09-28 09:30	1551248,538	6367679,787	-475,427	2020,0	10,70	46,3	1370,0	5560,0	359,0	26	-9,50	-74,5	4,40	0,15	0,15	0,35	0,20	0,15
966	Äspö_Geom_K	KI0025F02	1999-09-28 10:00	1551244,908	6367653,304	-487,548	2130,0	10,00	40,7	1580,0	6110,0	407,0	11	-10,30	-79,9	3,00	0,15	0,15	0,21	0,34	0,15
967	Äspö_Geom_K	KI0025F02	2000-04-11 09:30	1551247,383	6367671,403	-479,282	2060,0	9,31	45,1	1430,0	5870,0	368,0	21	-9,80	-85,9	2,60	0,14	0,14	0,25	0,32	0,14
968	Äspö_Geom_K	KI0025F02	2000-04-11 09:35	1551251,664	6367702,766	-464,822	1970,0	8,72	50,7	1220,0	5410,0	372,0	28	-9,40	-81,5	5,50	0,14	0,14	0,33	0,24	0,14
969	Äspö_Geom_K	KI0025F02	2000-04-11 10:00	1551250,052	6367690,871	-470,314	2030,0	8,62	48,2	1310,0	5570,0	367,0	24	-9,60	-81,0	4,40	0,14	0,14	0,31	0,26	0,14
970	Äspö_Geom_K	KI0025F03	2000-04-12 10:00	1551242,284	6367687,475	-477,461	2030,0	9,46	46,3	1370,0	5690,0	353,0	23	-9,60	-74,3	4,90	0,15	0,15	0,34	0,21	0,15
971	Äspö_Geom_K	KI0025F03	2000-04-12 10:00	1551236,543	6367665,965	-489,895	2130,0	7,71	39,7	1490,0	5990,0	401,0	10	-10,50	-81,2	3,30	0,15	0,15	0,20	0,36	0,15
972	Äspö_Geom_K	KI0025F03	2000-04-12 10:00	1551235,643	6367662,584	-491,834	2110,0	8,54	38,6	1520,0	5990,0	418,0	11	-10,00	-78,1	4,70	0,15	0,15	0,23	0,32	0,15
973	Äspö_Geom_K	KI0025F03	2000-04-12 10:45	1551243,300	6367691,262	-475,252	2040,0	7,88	44,3	1320,0	5540,0	362,0	20	-9,60	-75,1	4,30	0,15	0,15	0,33	0,23	0,15
974	Äspö_Geom_K	KJ0044F01	2000-02-23 09:10	1551274,112	6367814,596	-448,262	2310,0	10,40	47,8	2080,0	7030,0	451,0	28	-10,30	-74,6	3,70	0,16	0,16	0,16	0,35	0,16
975	Äspö_Geom_K	KJ0050F01	2000-02-23 09:05	1551266,849	6367824,126	-448,188	2260,0	9,61	59,3	1890,0	6580,0	426,0	64	-10,30	-75,1	4,40	0,16	0,16	0,24	0,29	0,16
976	Äspö_Geom_K	KJ0050F01	2000-04-14 09:40	1551266,849	6367824,126	-448,188	2330,0	8,70	48,8	2020,0	7130,0	460,0	33	-10,40	-78,9	4,50	0,16	0,16	0,16	0,37	0,17

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
977	Äspö_Geom_K	KJ0052F01	2000-02-23 09:05	1551239,396	6367857,818	-450,508	2370,0	7,73	47,1	2140,0	7230,0	485,0	11	-11,70	-86,2	1,00	0,13	0,13	0,13	0,43	0,18
978	Äspö_Geom_K	KJ0052F01	2000-04-14 09:05	1551239,396	6367857,818	-450,508	2380,0	7,11	42,5	2100,0	7510,0	503,0	15	-11,50	-86,9	4,30	0,13	0,13	0,13	0,43	0,19
979	Äspö_Geom_K	KJ0052F02	2000-02-23 16:45	1551256,707	6367830,998	-447,530	2430,0	9,07	51,6	2410,0	8130,0	487,0	28	-11,10	-87,6	1,50	0,13	0,13	0,13	0,41	0,19
980	Äspö_Geom_K	KJ0052F03	1999-05-10 15:00	1551255,685	6367823,942	-447,501	2060,0	8,00	59,0	1630,0	6180,0	486,0	61	-9,80	-77,8	4,80	0,16	0,16	0,25	0,28	0,16
981	Äspö_Geom_K	KJ0052F03	2000-02-23 09:05	1551255,996	6367825,025	-447,576	2060,0	8,76	64,7	1460,0	5750,0	388,0	71	-9,70	-74,7	3,90	0,15	0,15	0,36	0,19	0,15
982	Äspö_Geom_K	KJ0052F03	2000-04-14 09:12	1551255,996	6367825,025	-447,576	2160,0	8,63	59,7	1480,0	5970,0	404,0	63	-9,70	-75,9	4,10	0,15	0,15	0,32	0,22	0,15
983	Äspö_Geom_K	KR0012B	1995-05-18 11:44	1551686,795	6366730,901	-69,119	381,3	4,50	21,7	109,5	608,4	129,8	308	-9,40	-68,8	0,00	0,02	0,40	0,53	0,02	0,02
984	Äspö_Geom_K	KR0012B	1995-10-10 16:16	1551686,795	6366730,901	-69,119	375,3	4,50	23,2	115,9	642,4	119,6	295	-9,50	-66,7	0,00	0,02	0,40	0,53	0,02	0,02
985	Äspö_Geom_K	KR0012B	1996-05-21 15:46	1551686,795	6366730,901	-69,119	326,9	3,70	14,3	83,6	495,6	93,9	302	-9,90	-70,4	0,00	0,02	0,36	0,57	0,02	0,02
986	Äspö_Geom_K	KR0012B	1997-03-11 18:26	1551686,795	6366730,901	-69,119	417,8	4,23	23,9	123,0	654,2	110,4	279	-9,60	-73,5	0,00	0,03	0,35	0,56	0,03	0,03
987	Äspö_Geom_K	KR0012B	1997-09-30 19:00	1551686,795	6366730,901	-69,119	489,4	5,35	34,5	153,4	856,7	143,9	278	-9,40	-72,3	21,00	0,03	0,37	0,53	0,03	0,03
988	Äspö_Geom_K	KR0012B	1998-03-03 09:53	1551686,795	6366730,901	-69,119	492,0	5,70	34,7	141,0	876,0	114,0	281	-9,50	-71,5	0,00	0,03	0,38	0,53	0,03	0,03
989	Äspö_Geom_K	KR0012B	1998-09-29 14:00	1551686,795	6366730,901	-69,119	450,0	5,90	30,9	112,0	818,0	109,0	253	-9,30	-80,1	15,00	0,04	0,33	0,57	0,04	0,04
990	Äspö_Geom_K	KR0012B	1998-10-20 13:50	1551686,795	6366730,901	-69,119	472,0	5,80	32,3	121,0	874,0	125,0	254	-9,20	-89,1	21,00	0,04	0,27	0,60	0,04	0,04
991	Äspö_Geom_K	KR0012B	1999-04-15 10:00	1551686,795	6366730,901	-69,119	550,0	6,80	38,0	132,0	900,0	122,0	252	-9,40	-74,7	15,50	0,04	0,36	0,53	0,04	0,04
992	Äspö_Geom_K	KR0012B	1999-09-27 10:00	1551686,795	6366730,901	-69,119	630,0	7,80	46,0	148,0	1040,0	142,0	265	-9,30	-72,5	14,70	0,04	0,39	0,50	0,04	0,04
993	Äspö_Geom_K	KR0012B	2000-09-18 13:00	1551689,976	6366728,822	-69,053	217,0	3,69	11,6	54,1	250,0	47,0	311	-9,90	-75,3	14,30	0,01	0,35	0,61	0,01	0,01
994	Äspö_Geom_K	KR0012B	2001-10-15 13:00	1551689,976	6366728,822	-69,053	172,0	2,60	7,8	40,2	168,0	37,4	328	-10,20	-73,9	13,10	0,01	0,35	0,62	0,01	0,01
995	Äspö_Geom_K	KR0013B	1995-05-18 10:11	1551682,915	6366728,888	-69,155	715,7	4,20	52,2	308,5	1520,9	142,6	273	-9,30	-69,8	0,00	0,04	0,39	0,49	0,04	0,04
996	Äspö_Geom_K	KR0013B	1995-10-10 16:04	1551682,915	6366728,888	-69,155	619,5	4,00	47,1	269,9	1458,9	125,5	267	-9,50	-70,6	0,00	0,04	0,37	0,51	0,04	0,04
997	Äspö_Geom_K	KR0013B	1997-03-11 18:24	1551682,915	6366728,888	-69,155	579,1	3,70	36,5	228,0	1144,7	110,8	275	-9,80	-74,8	0,00	0,04	0,33	0,55	0,04	0,04
998	Äspö_Geom_K	KR0013B	1997-09-30 19:00	1551682,915	6366728,888	-69,155	563,1	3,57	36,7	211,3	1060,6	125,4	285	-9,60	-73,4	0,00	0,04	0,35	0,54	0,04	0,04
999	Äspö_Geom_K	KR0013B	1998-09-29 14:00	1551682,915	6366728,888	-69,155	464,0	4,20	31,0	171,0	947,0	105,0	270	-9,50	-86,9	17,00	0,04	0,28	0,61	0,04	0,04
1000	Äspö_Geom_K	KR0013B	1998-10-20 14:30	1551682,915	6366728,888	-69,155	480,0	4,00	31,3	178,0	938,0	100,0	274	-9,50	-87,0	10,00	0,04	0,28	0,61	0,04	0,04
1001	Äspö_Geom_K	KR0013B	1999-04-15 10:00	1551682,915	6366728,888	-69,155	470,0	4,20	29,6	161,0	840,0	91,0	285	-9,60	-77,0	13,00	0,03	0,34	0,57	0,03	0,03
1002	Äspö_Geom_K	KR0013B	1999-09-27 10:00	1551682,915	6366728,888	-69,155	530,0	4,60	30,8	165,0	890,0	102,0	287	-9,60	-75,5	15,80	0,03	0,35	0,56	0,03	0,03
1003	Äspö_Geom_K	KR0013B	2000-09-18 11:00	1551688,586	6366727,456	-69,053	285,0	3,53	15,7	91,5	415,0	59,0	333	-9,90	-74,1	12,70	0,01	0,37	0,59	0,01	0,01
1004	Äspö_Geom_K	KR0013B	2001-09-25 09:30	1551688,586	6366727,456	-69,053	177,0	2,93	8,0	46,8	133,0	36,4	343	-10,20	-75,0	14,50	0,01	0,35	0,62	0,01	0,01
1005	Äspö_Geom_K	KR0015B	1995-05-18 10:01	1551668,557	6366728,163	-69,418	578,5	3,50	36,8	207,1	977,1	140,2	346	-9,60	-70,8	0,00	0,03	0,40	0,52	0,03	0,03
1006	Äspö_Geom_K	KR0015B	1995-10-10 15:46	1551668,557	6366728,163	-69,418	452,5	3,20	29,2	159,0	889,9	121,4	309	-9,70	-71,8	0,00	0,03	0,37	0,55	0,03	0,03
1007	Äspö_Geom_K	KR0015B	1996-05-21 15:50	1551668,557	6366728,163	-69,418	441,5	3,40	23,1	142,9	726,1	94,1	340	-9,70	-72,9	0,00	0,02	0,38	0,56	0,02	0,02
1008	Äspö_Geom_K	KR0015B	1997-03-11 18:22	1551668,557	6366728,163	-69,418	486,9	3,30	26,6	158,2	771,3	107,4	336	-9,80	-72,9	0,00	0,02	0,37	0,56	0,02	0,02
1009	Äspö_Geom_K	KR0015B	1997-09-30 19:00	1551668,557	6366728,163	-69,418	463,4	2,55	27,3	153,1	733,5	117,7	344	-9,60	-75,0	13,00	0,02	0,37	0,56	0,02	0,02
1010	Äspö_Geom_K	KR0015B	1998-03-03 09:55	1551668,557	6366728,163	-69,418	413,0	4,18	24,5	139,0	668,0	101,0	401	-9,80	-73,7	0,00	0,01	0,41	0,55	0,01	0,01
1011	Äspö_Geom_K	KR0015B	1998-09-29 14:00	1551668,557	6366728,163	-69,418	360,0	3,50	21,0	122,0	628,0	93,5	338	-9,70	-80,5	19,00	0,02	0,34	0,60	0,02	0,02
1012	Äspö_Geom_K	KR0015B	1998-10-20 15:01	1551668,557	6366728,163	-69,418	393,0	3,40	22,3	132,0	643,0	94,4	336	-9,70	-86,9	20,00	0,03	0,30	0,62	0,03	0,03
1013	Äspö_Geom_K	KR0015B	1999-04-15 10:00	1551668,557	6366728,163	-69,418	360,0	3,30	19,1	116,0	560,0	75,0	343	-9,90	-78,3	15,90	0,02	0,34	0,60	0,02	0,02
1014	Äspö_Geom_K	KR0015B	1999-09-27 10:00	1551668,557	6366728,163	-69,418	390,0	3,50	19,0	117,0	560,0	76,0	338	-9,80	-75,3	13,30	0,02	0,36	0,58	0,02	0,02
1015	Äspö_Geom_K	KR0015B	2000-09-18 12:30	1551687,029	6366725,837	-69,093	301,0	3,35	16,4	104,0	440,0	61,0	362	-10,00	-73,5	11,80	0,01	0,38	0,59	0,01	0,01
1016	Äspö_Geom_K	KR0015B	2001-09-25 09:00	1551687,029	6366725,837	-69,093	227,0	2,96	11,0	68,0	220,0	44,0	401	-10,00	-73,0	9,40	0,00	0,40	0,59	0,00	0,00
1017	Äspö_Geom_K	KXTT1	1996-04-10 06:49	1551578,410	6368005,447	-402,812	1768,9	14,10	81,4	1285,5	5084,0	343,3	91	-10,20	-76,9	3,80	0,14	0,16	0,41	0,14	0,14
1018	Äspö_Geom_K	KXTT1	2001-11-22 10:39	1551578,410	6368005,447	-402,812	1390,0	12,70	63,7	665,0	3110,0	252,0	171	-8,60	-66,9	18,10	0,09	0,37	0,37	0,09	0,09
1019	Äspö_Geom_K	KXTT2	1996-04-11 14:02	1551577,973	6368001,867	-400,487	1632,2	11,60	79,7	963,7	4389,1	326,9	124	-9,30	-68,4	7,60	0,12	0,28	0,37	0,12	0,12
1020	Äspö_Geom_K	KXTT2	1996-04-12 08:12	1551579,606	6368003,257	-402,587	1754,3	13,80	80,8	1263,3	5119,4	357,7	91	-10,20	-78,4	6,00	0,14	0,15	0,42	0,14	0,14
1021	Äspö_Geom_K	KXTT2	2001-11-22 09:15	1551579,606	6368003,257	-402,587	1380,0	12,10	61,9	660,0	3260,0	261,0	158	-8,50	-66,3	50,90	0,09	0,36	0,38	0,09	0,09
1022	Äspö_Geom_K	KXTT3	1996-04-10 12:08	1551575,762	6368006,988	-398,503	1775,9	14,30	82,3	1301,1	5091,1	347,0	92	-10,20	-78,4	5,40	0,14	0,16	0,41	0,14	0,14
1023	Äspö_Geom_K	KXTT3	1996-04-11 08:01	1551574,254	6368004,632	-396,404	1621,3	12,10	79,8	947,3	4296,9	294,9	130	-9,30	-73,4	0,00	0,12	0,26	0,39	0,12	0,12
1024	Äspö_Geom_K	KXTT3	1997-10-03 09:58	1551575,762	6368006,988	-398,503	1943,4	13,40	69,8	1709,0	6094,2	356,1	43	-11,10	-86,8	0,00	0,15	0,15	0,23	0,33	0,15
1025	Äspö_Geom_K	KXTT3	1997-12-02 09:00	1551575,762	6368006,988	-398,503	1870,0	13,80	70,8	1610,0	5960,0	358,0	50	-11,00	-85,6	0,00	0,15	0,15	0,26	0,30	0,15
1026	Äspö_Geom_K	KXTT3	1998-03-04 09:25	1551575,762	6368006,988	-398,503	1730,0	12,20	71,5	1310,0	5150,0	332,0	88	-10,30	-81,4	32,00	0,14	0,14	0,41	0,17	0,14
1027	Äspö_Geom_K	KXTT3	1998-06-03 09:00	1551575,762	6368006,988	-398,503	1710,0	14,80	72,6	1120,0	4490,0	328,0	115	-9,80	-77,2	0,00	0,13	0,20	0,41	0,13	0,13
1028	Äspö_Geom_K	KXTT3	1998-09-30 09:32	1551575,762	6368006,988	-398,503	1670,0	14,40	71,9	1030,0	4240,0	322,0	119	-9,40	-83,0	219,00	0,12	0,19	0,45	0,12	0,12
1029	Äspö_Geom_K	KXTT3	1999-04-13 09:30	1551575,762	6368006,988	-398,503	1530,0	11,50	69,3	873,0	4020,0	299,0	145	-9,20	-74,3	307,60	0,10	0,26	0,44	0,10	0,10
1030	Äspö_Geom_K	KXTT3	1999-10-04 11:00	1551575,762	6368006,988	-398,503	1600,0	12,80	76,1	990,0	4210,0	337,0	147	-9,40	-73,9	40,40	0,12	0,26	0,39	0,12	0,12
1031	Äspö_Geom_K	KXTT3	2000-04-12 09:19	1551575,116	6368005,978	-397,604	1550,0	12,90	61,9	832,0	3910,0	302,0	143	-9,00	-71,8	32,00	0,11	0,28	0,39	0,11	0,11
1032	Äspö_Geom_K	KXTT3	2000-09-20 09:45	1551575,762	6368006,988	-398,503	1460,0	12,00	62,6	822,0	3570,0	269,0	148	-9,10	-73,0	40,50	0,10	0,28	0,42	0,10	0,10
1033	Äspö_Geom_K	KXTT3	2001-11-22 10:23	1551575,762	6368006,988	-398,503	1380,0	13,90	69,4	615,0	3070,0	250,0	197	-8,50	-65,9	10,50	0,08	0,41	0,35	0,08	0,08
1034	Äspö_Geom_K	KXTT4	1996-04-09 08:42	1551579,916	6368005,545	-399,925	1731,7	14,10	83,2	1191,8	4920,9	329,8	106	-9,90	-77,0	6,80	0,13	0,19	0,40	0,13	0,13
1035	Äspö_Geom_K	KXTT4	1996-04-11 11:15	1551578,115	6368003,943	-398,145	1763,7	14,20	81,5	1253,8	5013,1	343,0	98	-10,10	-78,6	0,00	0,14	0,16	0,41	0,14	0,14
1036	Äspö_Geom_K	KXTT4	2001-11-22 09:00	1551578,716	6368004,477	-398,738	1360,0	12,00	59,7	644,0	2910,0	250,0	193	-8,60	-67,0	240,00	0,07	0,38	0,40	0,07	0,07
1037	Äspö_Geom_K	KXTT4	2001-11-22 09:25	1551578,115	6368003,943	-398,145	1340,0	14,40	73,0	518,0	3060,0	248,0	192	-8,10	-63,8	20,70	0,08	0,44	0,33	0,08	0,08

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
1038	Äspö_Geom_K	KXTT4	2001-11-22 09:55	1551576,007	6368002,069	-396,068	1400,0	13,30	64,6	677,0	2910,0	253,0	192	-8,30	-64,8	42,00	0,08	0,41	0,35	0,08	0,08
1039	Äspö_Geom_K	KXTT5	2001-11-22 10:51	1551576,007	6368005,722	-392,753	1300,0	14,70	75,0	470,0	2670,0	235,0	221	-8,10	-64,1	10,60	0,07	0,47	0,33	0,07	0,07
1040	Äspö_Geom_K	KZ0027A	1996-12-16 09:10	1551575,462	6367845,608	-416,896	1918,6	15,32	135,8	1034,9	4500,0	294,9	110	-8,60	-65,9	0,00	0,12	0,38	0,26	0,12	0,12
1041	Äspö_Geom_K	KZ0027A	1997-01-20 09:30	1551575,462	6367845,608	-416,896	1891,4	14,93	131,6	1041,3	4800,0	295,6	130	-8,70	-69,7	0,00	0,12	0,36	0,29	0,12	0,12
1042	Äspö_Geom_K	KZ0027A	1997-02-03 09:23	1551575,462	6367845,608	-416,896	1886,5	15,16	126,3	1062,0	4690,0	296,9	120	-8,70	-68,6	0,00	0,12	0,36	0,29	0,12	0,12
1043	Äspö_Geom_K	KZ0027A	1997-02-18 09:41	1551575,462	6367845,608	-416,896	1876,9	14,77	129,7	1009,5	4700,0	300,8	130	-8,60	-69,1	0,00	0,12	0,37	0,28	0,12	0,12
1044	Äspö_Geom_S	SA1229A	1995-05-18 12:19	1551471,950	6367425,895	-172,522	1628,5	24,10	146,7	466,9	3674,7	247,5	311	-6,50	-46,3	0,00	0,05	0,78	0,07	0,05	0,05
1045	Äspö_Geom_S	SA1229A	1995-10-11 16:16	1551471,950	6367425,895	-172,522	1620,6	24,40	136,3	440,4	3481,5	224,4	314	-7,30	-54,7	0,00	0,05	0,70	0,14	0,05	0,05
1046	Äspö_Geom_S	SA1229A	1996-05-21 16:00	1551471,950	6367425,895	-172,522	1639,8	28,00	137,2	413,1	3392,8	257,7	303	-7,30	-56,3	0,00	0,06	0,70	0,12	0,06	0,06
1047	Äspö_Geom_S	SA1229A	1997-03-11 17:49	1551471,950	6367425,895	-172,522	1586,4	25,18	130,2	379,6	3136,8	249,1	323	-7,40	-60,6	0,00	0,06	0,67	0,17	0,06	0,06
1048	Äspö_Geom_S	SA1229A	1998-03-03 10:45	1551471,950	6367425,895	-172,522	1630,0	29,40	146,0	307,0	3650,0	297,0	304	-6,70	-56,9	12,00	0,06	0,73	0,09	0,06	0,06
1049	Äspö_Geom_S	SA1229A	1998-10-02 10:00	1551471,950	6367425,895	-172,522	1540,0	27,10	131,0	266,0	2950,0	279,1	256	-7,10	-67,9	15,10	0,07	0,61	0,19	0,07	0,07
1050	Äspö_Geom_S	SA1229A	1999-04-13 11:00	1551471,950	6367425,895	-172,522	1550,0	29,20	136,4	256,0	2980,0	296,0	247	-7,10	-57,8	17,80	0,06	0,68	0,13	0,06	0,06
1051	Äspö_Geom_S	SA1229A	1999-10-04 13:00	1551471,950	6367425,895	-172,522	1500,0	27,80	130,8	290,0	3010,0	312,0	265	-7,10	-58,5	13,20	0,06	0,67	0,14	0,06	0,06
1052	Äspö_Geom_S	SA1229A	2000-09-18 10:30	1551471,950	6367425,895	-172,522	1520,0	25,70	131,0	315,0	3120,0	252,0	264	-7,20	-58,6	11,20	0,06	0,66	0,16	0,06	0,06
1053	Äspö_Geom_S	SA1229A	2001-09-26 13:00	1551471,950	6367425,895	-172,522	1500,0	24,90	120,0	254,0	2860,0	252,0	265	-7,10	-57,1	10,20	0,06	0,67	0,17	0,06	0,06
1054	Äspö_Geom_S	SA1229A	2001-10-16 11:30	1551471,950	6367425,895	-172,522	1520,0	26,20	124,0	277,0	2850,0	224,0	264	-7,20	-57,3	12,00	0,05	0,67	0,16	0,05	0,05
1055	Äspö_Geom_S	SA1420A	1995-10-11 15:56	1551400,374	6367638,882	-204,384	1334,4	20,30	129,4	247,3	2721,0	267,4	205	-7,30	-58,4	0,00	0,06	0,61	0,20	0,06	0,06
1056	Äspö_Geom_S	SA1420A	1996-05-21 16:02	1551400,374	6367638,882	-204,384	1315,8	21,10	119,1	245,4	2676,7	280,9	214	-7,60	-58,3	20,20	0,06	0,59	0,21	0,06	0,06
1057	Äspö_Geom_S	SA1420A	1997-03-11 17:39	1551400,374	6367638,882	-204,384	1392,6	25,91	136,6	210,0	2507,8	300,8	189	-7,50	-60,9	0,00	0,07	0,61	0,18	0,07	0,07
1058	Äspö_Geom_S	SA1420A	1997-09-30 18:15	1551400,374	6367638,882	-204,384	1500,0	30,90	161,0	245,0	2972,5	390,0	194	-6,70	-59,7	0,00	0,08	0,68	0,08	0,08	0,08
1059	Äspö_Geom_S	SA1420A	1998-03-04 15:00	1551400,374	6367638,882	-204,384	1530,0	27,00	157,0	246,0	3050,0	324,0	204	-6,80	-58,6	0,00	0,07	0,67	0,11	0,07	0,07
1060	Äspö_Geom_S	SA1420A	1998-10-01 09:30	1551400,374	6367638,882	-204,384	1360,0	23,50	123,0	214,0	2530,0	258,0	198	-7,20	-70,3	16,50	0,07	0,55	0,24	0,07	0,07
1061	Äspö_Geom_S	SA1420A	1999-04-13 09:00	1551400,374	6367638,882	-204,384	1420,0	27,30	135,1	203,0	2690,0	292,0	205	-7,30	-60,9	15,80	0,07	0,63	0,17	0,07	0,07
1062	Äspö_Geom_S	SA1420A	1999-10-05 14:30	1551400,374	6367638,882	-204,384	1370,0	25,30	140,8	228,0	2720,0	299,0	200	-7,20	-59,1	19,20	0,07	0,64	0,16	0,07	0,07
1063	Äspö_Geom_S	SA1420A	2000-09-18 10:00	1551400,374	6367638,882	-204,384	1450,0	31,50	152,0	216,0	2860,0	292,0	203	-6,90	-58,4	14,50	0,07	0,69	0,11	0,07	0,07
1064	Äspö_Geom_S	SA1730A	1995-05-18 15:18	1551339,275	6367895,545	-238,111	2440,3	8,20	53,5	2755,1	8671,8	539,0	32	-12,00	-90,2	0,00	0,12	0,12	0,12	0,43	0,21
1065	Äspö_Geom_S	SA1730A	1995-10-11 15:13	1551339,275	6367895,545	-238,111	2384,2	8,20	56,4	2616,5	8561,9	530,5	36	-12,10	-88,8	0,00	0,12	0,12	0,12	0,43	0,21
1066	Äspö_Geom_S	SA1730A	1996-05-21 15:25	1551339,275	6367895,545	-238,111	2377,4	9,40	57,7	2451,5	8054,9	540,0	43	-11,90	-87,1	0,00	0,13	0,13	0,13	0,41	0,20
1067	Äspö_Geom_S	SA1730A	1997-03-11 16:37	1551339,275	6367895,545	-238,111	2635,9	9,26	53,6	2937,4	9455,9	549,2	34	-12,10	-90,0	0,00	0,11	0,11	0,11	0,43	0,23
1068	Äspö_Geom_S	SA1730A	1997-10-02 15:00	1551339,275	6367895,545	-238,111	2760,0	10,10	43,5	3400,0	10002,7	559,8	25	-12,20	-90,9	0,00	0,11	0,11	0,11	0,43	0,25
1069	Äspö_Geom_S	SA1730A	1998-03-03 13:45	1551339,275	6367895,545	-238,111	2730,0	9,25	45,3	3250,0	10600,0	595,0	24	-11,90	-89,3	1,30	0,11	0,11	0,11	0,42	0,25
1070	Äspö_Geom_S	SA1730A	1998-10-02 10:45	1551339,275	6367895,545	-238,111	2870,0	8,50	41,0	3590,0	10730,0	640,0	17	-12,40	-97,7	0,80	0,09	0,09	0,09	0,46	0,28
1071	Äspö_Geom_S	SA1730A	1999-04-13 10:00	1551339,275	6367895,545	-238,111	2770,0	8,60	37,1	3543,0	11100,0	669,0	19	-12,40	-89,5	1,60	0,10	0,10	0,10	0,44	0,28
1072	Äspö_Geom_S	SA1730A	1999-10-05 14:00	1551339,275	6367895,545	-238,111	2960,0	10,30	40,7	3939,0	11480,0	723,0	14	-12,50	-91,1	1,00	0,09	0,09	0,09	0,43	0,30
1073	Äspö_Geom_S	SA1730A	2000-09-18 11:00	1551339,275	6367895,545	-238,111	2940,0	10,90	35,3	4120,0	12450,0	618,0	14	-12,50	-91,2	0,80	0,09	0,09	0,09	0,44	0,30
1074	Äspö_Geom_S	SA1730A	2001-09-27 11:10	1551339,275	6367895,545	-238,111	3240,0	12,30	38,1	4620,0	12470,0	707,0	11	-10,30	-90,3	0,80	0,10	0,10	0,10	0,37	0,32
1075	Äspö_Geom_S	SA2074A	1995-05-18 01:00	1551645,926	6367859,016	-284,206	1454,0	9,30	119,3	560,4	3414,1	261,7	128	-8,70	-66,3	0,00	0,09	0,39	0,34	0,09	0,09
1076	Äspö_Geom_S	SA2074A	1995-10-11 15:21	1551645,926	6367859,016	-284,206	1425,0	9,10	111,8	510,1	3238,6	251,3	140	-8,40	-65,1	0,00	0,09	0,41	0,33	0,09	0,09
1077	Äspö_Geom_S	SA2074A	1996-05-21 12:06	1551645,926	6367859,016	-284,206	1419,7	9,90	106,8	510,6	3290,0	242,7	134	-8,20	-66,0	12,70	0,09	0,41	0,34	0,09	0,09
1078	Äspö_Geom_S	SA2074A	1997-03-10 17:01	1551645,926	6367859,016	-284,206	1369,3	9,45	94,7	461,7	2983,0	251,9	152	-8,70	-69,8	0,00	0,09	0,36	0,38	0,09	0,09
1079	Äspö_Geom_S	SA2074A	1997-09-30 16:00	1551645,926	6367859,016	-284,206	1280,0	9,34	84,9	447,0	2838,8	281,4	151	-8,40	-69,6	0,00	0,09	0,37	0,38	0,09	0,09
1080	Äspö_Geom_S	SA2074A	1998-03-03 16:00	1551645,926	6367859,016	-284,206	1320,0	8,50	92,0	443,0	2950,0	279,0	158	-8,50	-66,6	0,00	0,08	0,39	0,36	0,08	0,08
1081	Äspö_Geom_S	SA2074A	1998-10-01 12:00	1551645,926	6367859,016	-284,206	1260,0	7,90	82,4	416,0	2670,0	265,0	160	-8,50	-77,7	10,70	0,09	0,32	0,43	0,09	0,09
1082	Äspö_Geom_S	SA2074A	1999-04-13 10:00	1551645,926	6367859,016	-284,206	1220,0	7,90	79,1	408,0	2630,0	257,0	167	-8,50	-66,4	11,90	0,08	0,38	0,39	0,08	0,08
1083	Äspö_Geom_S	SA2074A	1999-10-05 08:30	1551645,926	6367859,016	-284,206	1200,0	8,40	78,5	410,0	2510,0	251,0	165	-8,40	-67,1	11,40	0,08	0,39	0,39	0,08	0,08
1084	Äspö_Geom_S	SA2074A	2000-09-19 13:00	1551645,926	6367859,016	-284,206	1230,0	9,28	85,1	448,0	2770,0	251,0	169	-8,20	-65,6	10,40	0,07	0,41	0,36	0,07	0,07
1085	Äspö_Geom_S	SA2074A	2001-10-16 08:00	1551645,926	6367859,016	-284,206	1240,0	9,59	80,4	394,0	2520,0	237,0	174	-8,20	-64,0	10,20	0,07	0,43	0,36	0,07	0,07
1086	Äspö_Geom_S	SA2273A	1995-05-18 17:33	1551533,230	6367700,358	-307,051	1866,0	12,30	151,1	852,2	4787,9	240,9	182	-7,80	-64,0	0,00	0,09	0,48	0,23	0,09	0,09
1087	Äspö_Geom_S	SA2273A	1995-10-11 11:36	1551533,230	6367700,358	-307,051	1778,6	13,20	140,3	795,9	4346,5	241,7	180	-8,10	-62,8	0,00	0,09	0,48	0,25	0,09	0,09
1088	Äspö_Geom_S	SA2273A	1996-05-21 14:41	1551533,230	6367700,358	-307,051	1804,9	14,00	134,6	823,8	4530,9	273,7	175	-8,20	-63,2	0,00	0,10	0,46	0,25	0,10	0,10
1089	Äspö_Geom_S	SA2273A	1997-03-10 16:38	1551533,230	6367700,358	-307,051	1770,9	12,28	125,8	741,4	4239,4	265,0	174	-8,20	-65,7	0,00	0,10	0,43	0,28	0,10	0,10
1090	Äspö_Geom_S	SA2273A	1997-10-02 15:00	1551533,230	6367700,358	-307,051	1680,0	13,40	114,0	719,0	4141,0	260,2	169	-8,00	-66,7	0,00	0,09	0,43	0,29	0,09	0,09
1091	Äspö_Geom_S	SA2273A	1998-03-02 17:45	1551533,230	6367700,358	-307,051	1690,0	12,10	116,0	693,0	4020,0	279,0	167	-8,10	-65,1	8,90	0,09	0,43	0,29	0,09	0,09
1092	Äspö_Geom_S	SA2273A	1998-10-02 11:15	1551533,230	6367700,358	-307,051	1650,0	12,80	110,0	690,0	3830,0	290,0	161	-8,10	-72,2	8,60	0,10	0,38	0,32	0,10	0,10
1093	Äspö_Geom_S	SA2273A	1999-04-06 12:45	1551533,230	6367700,358	-307,051	1630,0	13,40	109,0	703,0	3930,0	291,0	160	-8,20	-65,7	10,20	0,10	0,42	0,30	0,10	0,10
1094	Äspö_Geom_S	SA2273A	1999-10-06 09:30	1551533,230	6367700,358	-307,051	1600,0	14,00	116,7	721,0	3820,0	323,0	155	-8,20	-65,3	9,20	0,10	0,42	0,28	0,10	0,10
1095	Äspö_Geom_S	SA2273A	2000-09-19 09:15	1551533,230	6367700,358	-307,051	1570,0	14,30	105,0	684,0	3770,0	264,0	159	-8,20	-65,2	8,00	0,09	0,43	0,30	0,09	0,09
1096	Äspö_Geom_S	SA2273A	2001-10-16 09:00	1551533,230	6367700,358	-307,051	1570,0	14,90	100,0	675,0	3640,0	253,0	158	-8,30	-65,0	8,90	0,09	0,42	0,31	0,09	0,09
1097	Äspö_Geom_S	SA2600A	1995-05-17 14:57	1551329,309	6367838,006	-346,201	2094,0	7,50	90,7	1499,0	6023,5	407,1	90	-9,40	-70,4	0,00	0,15	0,18	0,36	0,15	0,15
1098	Äspö_Geom_S	SA2600A	1995-10-11 11:07	1551329,309	6367838,006	-346,201	2140,2	7,60	89,3	1542,4	6183,0	382,1	95	-9,80	-75,5	0,00	0,15	0,15	0,36	0,18	0,15

SampleID	Site	Location	Date	Y	X	z	Na (mg/l)	K (mg/l)	Mg (mg/l)	Ca (mg/l)	Cl (mg/l)	SO4 (mg/l)	HCO3 (mg/l)	18O	2H	H3 (units)	Litorina	Biogenic	Precipitatio	Glacial	Brine
1099	Äspö_Geom_S	SA2600A	1996-05-21 11:54	1551329,309	6367838,006	-346,201	2125,4	9,10	85,0	1485,7	5920,6	403,8	114	-9,50	-74,0	2,90	0,15	0,17	0,37	0,15	0,15
1100	Äspö_Geom_S	SA2600A	1997-03-10 16:01	1551329,309	6367838,006	-346,201	2131,3	7,73	84,2	1439,1	5723,1	357,0	124	-9,50	-74,5	0,00	0,15	0,18	0,39	0,15	0,15
1101	Äspö_Geom_S	SA2600A	1997-10-01 09:00	1551329,309	6367838,006	-346,201	2050,0	9,41	74,8	1440,0	5602,8	359,4	130	-9,30	-74,0	0,00	0,14	0,19	0,38	0,14	0,14
1102	Äspö_Geom_S	SA2600A	1998-03-02 15:00	1551329,309	6367838,006	-346,201	2098,7	9,56	78,3	1458,8	5894,8	389,7	125	-9,60	-75,1	0,00	0,15	0,17	0,38	0,15	0,15
1103	Äspö_Geom_S	SA2600A	1998-09-29 16:00	1551329,309	6367838,006	-346,201	2060,0	8,20	64,2	1620,0	6420,0	428,0	104	-9,90	-91,8	6,10	0,15	0,15	0,24	0,32	0,15
1104	Äspö_Geom_S	SA2600A	1999-04-06 11:15	1551329,309	6367838,006	-346,201	2080,0	8,30	72,0	1540,0	5910,0	413,0	120	-9,60	-74,8	5,80	0,15	0,15	0,38	0,16	0,15
1105	Äspö_Geom_S	SA2600A	1999-10-06 09:15	1551329,309	6367838,006	-346,201	2070,0	8,20	70,2	1617,0	6000,0	457,0	120	-9,60	-74,4	7,80	0,16	0,16	0,35	0,18	0,16
1106	Äspö_Geom_S	SA2600A	2000-09-19 09:40	1551329,309	6367838,006	-346,201	2100,0	9,74	63,5	1830,0	6550,0	373,0	108	-9,70	-75,7	4,50	0,15	0,15	0,34	0,20	0,15
1107	Äspö_Geom_S	SA2600A	2001-09-25 15:00	1551329,309	6367838,006	-346,201	2280,0	10,30	63,3	1890,0	7080,0	436,0	97	-10,10	-76,7	3,30	0,16	0,16	0,25	0,27	0,16
1108	Äspö_Geom_S	SA2783A	1995-05-23 01:00	1551422,784	6367984,975	-372,919	2811,3	10,30	53,3	3661,9	10944,3	583,7	14	-12,00	-88,6	0,00	0,11	0,11	0,11	0,41	0,27
1109	Äspö_Geom_S	SA2783A	1995-10-25 14:58	1551422,784	6367984,975	-372,919	2839,8	11,70	50,1	3712,7	10910,7	599,5	18	-12,50	-90,0	0,00	0,10	0,10	0,10	0,43	0,27
1110	Äspö_Geom_S	SA2783A	1996-05-20 14:29	1551422,784	6367984,975	-372,919	3053,2	10,90	48,6	4061,6	12054,0	673,0	15	-12,50	-88,5	1,50	0,09	0,09	0,09	0,42	0,30
1111	Äspö_Geom_S	SA2783A	1997-10-02 08:00	1551422,784	6367984,975	-372,919	3330,0	13,40	42,0	4920,0	13273,9	581,5	13	-12,30	-91,0	0,00	0,09	0,09	0,09	0,42	0,32
1112	Äspö_Geom_S	SA2783A	1998-03-04 14:06	1551422,784	6367984,975	-372,919	3210,0	11,70	42,9	4450,0	13200,0	685,0	13	-12,40	-89,1	0,00	0,09	0,09	0,09	0,41	0,33
1113	Äspö_Geom_S	SA2783A	1998-10-01 12:00	1551422,784	6367984,975	-372,919	3390,0	11,60	42,5	4700,0	13300,0	567,0	13	-12,20	-103,8	2,10	0,07	0,07	0,07	0,46	0,32
1114	Äspö_Geom_S	SA2783A	1999-04-14 08:00	1551422,784	6367984,975	-372,919	3290,0	11,30	40,0	4744,0	13140,0	729,0	22	-12,00	-86,5	1,70	0,09	0,09	0,09	0,40	0,34
1115	Äspö_Geom_S	SA2783A	1999-10-05 09:00	1551422,784	6367984,975	-372,919	3420,0	13,30	40,7	4915,0	13970,0	737,0	15	-12,20	-88,1	0,80	0,08	0,08	0,08	0,40	0,35
1116	Äspö_Geom_S	SA2783A	2000-09-20 10:05	1551422,784	6367984,975	-372,919	3370,0	13,50	36,5	4980,0	13920,0	655,0	13	-12,20	-89,1	0,80	0,08	0,08	0,08	0,41	0,34
1117	Äspö_Geom_S	SA2880A	1995-10-25 13:18	1551513,101	6368012,259	-384,916	2846,8	12,10	46,4	3812,5	11371,5	609,4	30	-12,10	-84,5	0,00	0,11	0,11	0,11	0,40	0,27
1118	Äspö_Geom_S	SA2880A	1996-04-12 16:36	1551513,101	6368012,259	-384,916	3156,4	13,64	41,1	4378,1	12956,3	651,8	22	-12,30	-87,7	0,00	0,09	0,09	0,09	0,40	0,32
1119	Äspö_Geom_S	SA2880A	1997-03-06 12:46	1551513,101	6368012,259	-384,916	3180,7	11,78	45,9	4447,8	13011,6	672,5	27	-12,20	-90,2	0,00	0,09	0,09	0,09	0,41	0,32
1120	Äspö_Geom_S	SA2880A	1997-10-01 14:00	1551513,101	6368012,259	-384,916	3338,4	12,93	41,0	4651,3	13524,0	632,2	20	-12,10	-88,7	0,00	0,09	0,09	0,09	0,40	0,33
1121	Äspö_Geom_S	SA2880A	1998-03-06 09:00	1551513,101	6368012,259	-384,916	2990,0	12,80	44,2	3980,0	12500,0	638,0	40	-11,70	-82,6	4,70	0,11	0,11	0,11	0,37	0,29
1122	Äspö_Geom_S	SA2880A	1998-09-30 09:00	1551513,101	6368012,259	-384,916	3080,0	12,50	38,9	4250,0	12300,0	613,0	39	-11,60	-91,0	5,90	0,10	0,10	0,10	0,41	0,30
1123	Äspö_Geom_S	SA2880A	1999-04-14 14:00	1551513,101	6368012,259	-384,916	3110,0	12,70	39,8	4398,0	12930,0	687,0	37	-11,00	-82,9	3,10	0,11	0,11	0,11	0,36	0,31
1124	Äspö_Geom_S	SA2880A	1999-10-01 09:00	1551513,101	6368012,259	-384,916	3140,0	13,80	44,5	4252,0	12430,0	565,0	41	-11,50	-84,5	2,10	0,11	0,11	0,11	0,38	0,29
1125	Äspö_Geom_S	SA2880A	2000-09-20 09:30	1551518,508	6368013,002	-386,076	3370,0	14,80	33,0	5130,0	14500,0	643,0	18	-11,90	-86,4	0,90	0,09	0,09	0,09	0,39	0,34
1126	Äspö_Geom_S	SA3045A	1995-10-25 12:52	1551673,117	6367947,632	-409,156	1964,0	11,10	61,3	1991,7	6856,6	408,6		-11,90	-90,5	2,20	0,13	0,13	0,13	0,44	0,16
1127	Äspö_Geom_S	SA3045A	1997-03-06 13:25	1551673,117	6367947,632	-409,156	2420,6	11,68	50,2	2718,1	8765,9	445,7	10	-13,00	-98,2	0,00	0,10	0,10	0,10	0,48	0,21
1128	Äspö_Geom_S	SA3045A	1997-10-01 15:00	1551673,117	6367947,632	-409,156	2300,0	12,40	44,4	2630,0	8114,9	408,3	14	-12,50	-93,8	0,00	0,12	0,12	0,12	0,46	0,19
1129	Äspö_Geom_S	SA3045A	1998-03-06 08:55	1551673,117	6367947,632	-409,156	2350,0	11,20	44,8	2550,0	8630,0	432,0	10	-12,70	-95,1	1,10	0,11	0,11	0,11	0,47	0,20
1130	Äspö_Geom_S	SA3045A	1998-10-02 11:45	1551673,117	6367947,632	-409,156	2270,0	10,10	43,4	2410,0	7860,0	431,0	13	-12,40	-105,5	1,00	0,10	0,10	0,10	0,50	0,19
1131	Äspö_Geom_S	SA3045A	1999-04-14 11:00	1551673,117	6367947,632	-409,156	2280,0	10,90	42,7	2498,0	8130,0	447,0	11	-12,50	-91,5	1,20	0,12	0,12	0,12	0,46	0,19
1132	Äspö_Geom_S	SA3045A	1999-10-06 09:30	1551673,117	6367947,632	-409,156	2320,0	10,90	42,2	2526,0	7900,0	465,0	15	-12,40	-93,3	2,70	0,11	0,11	0,11	0,46	0,20
1133	Äspö_Geom_S	SA3045A	2000-09-20 09:20	1551673,117	6367947,632	-409,156	1730,0	12,50	60,2	1400,0	4970,0	302,9	103	-10,10	-78,8	7,20	0,14	0,14	0,45	0,14	0,14
1134	Äspö_Geom_S	SA3045A	2001-09-25 10:30	1551662,338	6367953,938	-406,843	2120,0	13,10	52,8	1790,0	6610,0	366,0	57	-11,20	-85,1	2,50	0,15	0,15	0,19	0,36	0,15
1135	Äspö_Geom_H	HA1330B	2001-10-15 14:00	1551493,502	6367515,639	-183,242	1570	17,1	118	337	2960,0	312,0	200	-7,2	-58,5	12,2	0,07	0,57	0,21	0,07	0,07
1136	Äspö_Geom_H	HA2780A	2001-10-16 10:00	1551420,655	6368005,055	-392,355	3320	15,1	35,6	4450	12800,0	654,0	19	-11,9	-85,7	1	0,10	0,10	0,10	0,38	0,32
1137	Äspö_Geom_H	HD0025A	1998-03-03 16:00	1551598,494	6367859,582	-414,856	2040	13,2	94,7	1550	6420,0	368,0	100	-9,5	-75,7	0,00	0,15	0,18	0,36	0,15	0,15
1138	Äspö_Geom_H	HD0025A	1999-04-12 16:00				1830	16,8	96,8	1284	5530,0	363,0	114	-9,7	-73,5	5,4	0,14	0,24	0,34	0,14	0,14
1139	Äspö_Geom_H	HD0025A	1999-10-04 13:45				1730	20,7	123,1	987	4590,0	382,0	146	-8,7	-67,6	11,3	0,12	0,39	0,25	0,12	0,12
1140	Äspö_Geom_H	HD0025A	2001-09-26 12:10	1551598,494	6367859,582	-414,856	1390	30,7	125	286	2540,0	261,0	194	-8,6	-67,2	8,1	0,08	0,54	0,23	0,08	0,08
1141	Äspö_Geom_H	HG0038B01	2001-09-26 09:15	1551219,420	6367803,883	-446,697	2380	9,63	52,2	1990	6940,0	475,0	43	-10,6	-80,3	0,80	0,15	0,15	0,15	0,37	0,17

Appendix 2: Water type classification

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
1	Swedish	KFR01	-73,50	Na-Ca-Cl	2960,0
2	Swedish	KFR01	-98,42	Na-Ca-Cl	4090,0
3	Swedish	KFR01	-98,42	Na-Ca-Cl	4020,0
4	Swedish	KFR01	-98,42	Na-Ca-Cl	3950,0
5	Swedish	KFR01	-98,42	Na-Ca-Cl	3870,0
6	Swedish	KFR01	-98,42	Na-Ca-Cl	3770,0
7	Swedish	KFR01	-98,42	Na-Ca-Cl	3840,0
8	Swedish	KFR01	-98,42	Na-Ca-Cl	3590,0
9	Swedish	KFR01	-98,42	Na-Ca-Cl	3550,0
10	Swedish	KFR01		Na-Ca-Cl	3560,0
11	Swedish	KFR01		Na-Ca-Cl	3530,0
12	Swedish	KFR01		Na-Ca-Cl	2940,0
13	Swedish	KFR01		Na-Ca-Cl	3420,0
14	Swedish	KFR02		Na-Ca-Cl	3710,0
15	Swedish	KFR02	-147,30	Na-Ca-Cl	3620,0
16	Swedish	KFR02	-185,30	Na-Ca-Cl	4460,0
17	Swedish	KFR02	-185,30	Na-Ca-Cl	4520,0
18	Swedish	KFR02		Na-Ca-Cl	4760,0
19	Swedish	KFR02		Na-Ca-Cl	4600,0
20	Swedish	KFR02		Na-Ca-Cl	4230,0
21	Swedish	KFR02		Na-Ca-Cl	4250,0
22	Swedish	KFR03	-107,00	Na-Ca-Cl	3720,0
23	Swedish	KFR03	-107,00	Na-Ca-Cl	3330,0
24	Swedish	KFR03	-133,00	Na-Ca-Cl	3740,0
25	Swedish	KFR03	-133,00	Na-Ca-Cl	3920,0
26	Swedish	KFR03	-151,00	Na-Ca-Cl	3820,0
27	Swedish	KFR03	-151,00	Na-Ca-Cl	4160,0
28	Swedish	KFR03	-176,00	Na-Ca-Cl	4170,0
29	Swedish	KFR03	-176,00	Na-Ca-Cl	4140,0
30	Swedish	KFR04	-111,79	Na-Ca-Cl	3520,0
31	Swedish	KFR04	-138,84	Na-Ca-Cl	3780,0
32	Swedish	KFR04	-138,84	Na-Ca-Cl	4269,0
33	Swedish	KFR04	-166,85	Na-Ca-Cl	4170,0
34	Swedish	KFR04	-166,85	Na-Ca-Cl	4290,0
35	Swedish	KFR04	-111,79	Na-Ca-Cl	4150,0
36	Swedish	KFR05	-160,09	Na-Ca-Cl	3830,0
37	Swedish	KFR05	-160,09	Na-Ca-Cl	3680,0
38	Swedish	KFR08	-87,89	Na-Cl	2800,0
39	Swedish	KFR08	-90,37	Na-Ca-Cl	2960,0
40	Swedish	KFR08	-93,38	Na-Cl	3170,0
41	Swedish	KFR08	-93,38	Na-Cl	3120,0
42	Swedish	KFR08	-93,38	Na-Cl	3100,0
43	Swedish	KFR08	-93,38	Na-Cl	3050,0
44	Swedish	KFR08	-93,38	Na-Cl	3150,0
45	Swedish	KFR08	-93,38	Na-Cl	3120,0
46	Swedish	KFR08	-93,38	Na-Cl	3000,0
47	Swedish	KFR08	-93,38	Na-Cl	3050,0
48	Swedish	KFR08	-93,38	Na-Cl	2980,0
49	Swedish	KFR08	-93,38	Na-Cl	2950,0
50	Swedish	KFR08	-93,38	Na-Cl	2920,0
51	Swedish	KFR08	-93,38	Na-Cl	2840,0
52	Swedish	KFR08	-93,38	Na-Ca-Cl	3240,0
53	Swedish	KFR08	-93,38	Na-Ca-Cl	3230,0
54	Swedish	KFR08	-93,38	Na-Ca-Cl	3160,0
55	Swedish	KFR09	-83,75	Na-Cl	2980,0
56	Swedish	KFR09	-83,75	Na-Cl	2940,0
57	Swedish	KFR09	-83,75	Na-Cl	2900,0
58	Swedish	KFR09	-83,75	Na-Cl	2920,0
59	Swedish	KFR09	-83,75	Na-Cl	2830,0
60	Swedish	KFR09	-83,75	Na-Cl	2840,0
61	Swedish	KFR09	-83,75	Na-Cl	2790,0
62	Swedish	KFR09	-83,75	Na-Cl	2810,0
63	Swedish	KFR09	-83,75	Na-Cl	2670,0
64	Swedish	KFR09		Na-Cl	2900,0

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
65	Swedish	KFR10	-147,54	Na-Ca-Cl	4430,0
66	Swedish	KFR10	-147,54	Na-Ca-Cl	4320,0
67	Swedish	KFR10	-147,54	Na-Ca-Cl	4210,0
68	Swedish	KFR10	-147,54	Na-Ca-Cl	4370,0
69	Swedish	KFR10	-147,54	Na-Ca-Cl	4030,0
70	Swedish	KFR10	-147,54	Na-Ca-Cl	3690,0
71	Swedish	KFR10	-147,54	Na-Ca-Cl	3860,0
72	Swedish	KFR10		Na-Ca-Cl	3850,0
73	Swedish	KFR10		Na-Ca-Cl	3890,0
74	Swedish	KFR10		Na-Ca-Cl	3910,0
75	Swedish	KFR10		Na-Ca-Cl	3970,0
76	Swedish	KFR13	-143,10	Na-Ca-Cl	3690,0
77	Swedish	KFR13	-168,10	Na-Ca-Cl	3990,0
78	Swedish	KFR13	-189,90	Na-Ca-Cl	4430,0
79	Swedish	KFR19	-58,24	Na-Cl	2880,0
80	Swedish	KFR19	-65,50	Na-Cl	2890,0
81	Swedish	KFR19	-58,24	Na-Cl	2790,0
82	Swedish	KFR19	-53,75	Na-Ca-Cl	2930,0
83	Swedish	KFR19	-53,75	Na-Ca-Cl	2810,0
84	Swedish	KFR55	-128,47	Na-Ca-Cl	4170,0
85	Swedish	KFR55	-131,63	Na-Ca-Cl	4040,0
86	Swedish	KFR55	-134,30	Na-Ca-Cl	3861,0
87	Swedish	KFR55	-134,30	Na-Ca-Cl	3900,0
88	Swedish	KFR56	-64,62	Na-Cl	2840,0
89	Swedish	KFR7A	-132,77	Na-Ca-Cl	3510,0
90	Swedish	KFR7A	-134,54	Na-Ca-Cl	5380,0
91	Swedish	KFR7A	-134,54	Na-Ca-Cl	5330,0
92	Swedish	KFR7A	-134,54	Na-Ca-Cl	5300,0
93	Swedish	KFR7A	-134,54	Na-Ca-Cl	5280,0
94	Swedish	KFR7A	-134,54	Na-Ca-Cl	5220,0
95	Swedish	KFR7A	-134,54	Na-Ca-Cl	5240,0
96	Swedish	KFR7A	-134,54	Na-Ca-Cl	5190,0
97	Swedish	KFR7A	-134,54	Na-Ca-Cl	5100,0
98	Swedish	KFR7A	-134,54	Na-Ca-Cl	5056,0
99	Swedish	KFR7A	-134,54	Na-Ca-Cl	4980,0
100	Swedish	KFR7A	-134,54	Na-Ca-Cl	4850,0
101	Swedish	KFR7A	-134,54	Na-Ca-Cl	4670,0
102	Swedish	KFR7A	-134,54	Na-Ca-Cl	4590,0
103	Swedish	KFR7A	-134,54	Na-Ca-Cl	4700,0
104	Swedish	KFR7A		Na-Ca-Cl	4460,0
105	Swedish	KFR7A		Na-Ca-Cl	4460,0
106	Swedish	KFR7A		Na-Ca-Cl	4460,0
107	Swedish	KFR7A		Na-Ca-Cl	4460,0
108	Swedish	KFR7C		Na-Ca-Cl	3680,0
109	Swedish	Rain old		HCO3-SO4	0,2
110	Swedish	Rain		HCO3-SO4	0,2
111	Swedish	Rain60		HCO3-SO4	0,2
112	Swedish	Glacial		K-Ca-Na-Mg-Cl-S	0,5
113	Swedish	Sea		Na-Cl	3760,0
114	Swedish	Modified Sea		Na-Cl	4490,0
115	Swedish	Brine		Ca-Na-Cl	47200,0
116	Swedish	Litorina		Na-Cl	6100,0
117	Swedish	PROV 1b		K-Mg-Ca-Cl-SO4	0,5
118	Swedish	PROV 2b		K-Ca-Na-Mg-Cl-S	0,5
119	Swedish	PROV 3b		K-Mg-Ca-Cl-SO4	0,5
120	Swedish	PROV 4b		K-Ca-Mg-Cl-SO4	0,5
121	Swedish	KKM08		Ca-Mg-HCO3-SO4	0,5
122	Swedish	KKM13		Ca-HCO3-SO4	0,5
123	Swedish	PROV 5b		Ca-Na-Cl-SO4-HC	0,7
124	Swedish	KLJ01		Na-Ca-HCO3	0,8
125	Swedish	KTA01		Ca-Na-HCO3-SO4	1,0
126	Swedish	KTA01		Ca-Na-HCO3	1,0
127	Swedish	KTA01		Ca-Na-Mg-HCO3	1,0
128	Swedish	KTA01		Ca-Na-HCO3	1,0

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
129	Swedish	KTA01		Ca-Na-HCO3	1,0
130	Swedish	KTA01		Ca-Na-HCO3-SO4	1,0
131	Swedish	KTA01		Ca-Na-HCO3-SO4	1,0
132	Swedish	KTA01		Ca-Na-HCO3-SO4	1,0
133	Swedish	KTA01		Ca-Na-HCO3-SO4	1,0
134	Swedish	KTA01		Ca-Na-HCO3-SO4	1,0
135	Swedish	KTA01		Ca-Na-HCO3	1,0
136	Swedish	KTA01		Ca-Na-HCO3	1,0
137	Swedish	KFJ07		Na-Ca-HCO3	1,0
138	Swedish	KFJ07		Na-Ca-HCO3	1,0
139	Swedish	KTA01		Ca-Na-HCO3	1,0
140	Swedish	KGI04		Ca-HCO3	1,5
141	Swedish	KKM13		Ca-HCO3-SO4	2,0
142	Swedish	KTA01		Ca-Na-HCO3-SO4	2,0
143	Swedish	KGI04		Ca-HCO3	2,2
144	Swedish	KSV04		Ca-Na-HCO3	2,3
145	Swedish	KSV05		Ca-Na-HCO3	2,4
146	Swedish	KKM03		Ca-Na-HCO3	2,5
147	Swedish	KKM03		Ca-Na-HCO3	2,5
148	Swedish	KKM03		Ca-Mg-HCO3	2,5
149	Swedish	KFJ07		Na-HCO3	3,0
150	Swedish	KFJ07		Na-Ca-HCO3	3,0
151	Swedish	KFJ07		Na-HCO3	3,0
152	Swedish	KFJ07		Na-HCO3	3,0
153	Swedish	KKM03		Ca-Mg-HCO3	3,0
154	Swedish	KFJ07		Na-HCO3	4,0
155	Swedish	KFJ07		Na-HCO3	4,0
156	Swedish	KFJ07		Na-HCO3	4,0
157	Swedish	KFJ08		Ca-Na-HCO3	4,0
158	Swedish	KFJ08		Ca-Na-HCO3	4,0
159	Swedish	KGI02		Na-HCO3	4,1
160	Swedish	KGI02		Na-HCO3	4,6
161	Swedish	KGI02		Na-HCO3	4,7
162	Swedish	KGI02		Na-HCO3	4,8
163	Swedish	HBH02		Ca-Na-HCO3	5,0
164	Swedish	KFJ04		Na-Ca-HCO3	5,0
165	Swedish	KGI02		Na-HCO3	5,0
166	Swedish	KKM13		Ca-Cl-HCO3-SO4	5,0
167	Swedish	KGI02		Na-HCO3	5,4
168	Swedish	KKL09		Ca-Na-HCO3	5,5
169	Swedish	HLX06		Na-Ca-HCO3	5,7
170	Swedish	HLX03		Na-Ca-HCO3	5,8
171	Swedish	HBH02		Ca-HCO3	6,0
172	Swedish	KFJ04		Na-HCO3	6,0
173	Swedish	KKM13		Ca-SO4	6,0
174	Swedish	KSV04		Na-Ca-HCO3	7,0
175	Swedish	KSV05		Ca-Mg-HCO3-Cl	7,0
176	Swedish	KSV05		Ca-HCO3-Cl	7,0
177	Swedish	HBH02		Ca-HCO3-SO4	7,8
178	Swedish	KGI04		Na-HCO3	7,9
179	Swedish	KFJ02		Na-Ca-HCO3	8,0
180	Swedish	KFJ02		Na-Ca-HCO3	8,0
181	Swedish	KFJ04		Na-HCO3	8,0
182	Swedish	KSV04		Na-Ca-HCO3	8,0
183	Swedish	HBH02		Ca-HCO3-SO4	8,3
184	Swedish	KFJ04		Na-Ca-HCO3	9,0
185	Swedish	HKM20		Ca-Na-HCO3	9,0
186	Swedish	KSV04		Na-Ca-HCO3	9,0
187	Swedish	HBH02		Ca-Mg-HCO3	9,2
188	Swedish	HBH02		Ca-Mg-HCO3-SO4	9,6
189	Swedish	HBH02		Ca-HCO3-SO4	9,9
190	Swedish	KFI01		Ca-Na-HCO3	10,0
191	Swedish	KSV05		Ca-HCO3-Cl	10,0
192	Swedish	HBH02		Ca-HCO3-SO4	10,3

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
193	Swedish	HBH02		Ca-HCO3-SO4	10,4
194	Swedish	HBH02		Ca-HCO3-SO4-Cl	10,6
195	Swedish	KFI01		Ca-Na-HCO3	11,0
196	Swedish	HKM20		Ca-Na-HCO3-Cl	11,0
197	Swedish	KKM13		Ca-SO4	11,0
198	Swedish	HLX03		Na-HCO3	11,0
199	Swedish	HBH05		Ca-Na-HCO3	11,2
200	Swedish	HBH01		Ca-HCO3	11,3
201	Swedish	HBH05		Ca-Na-HCO3	11,7
202	Swedish	HBH05		Ca-Na-HCO3	12,0
203	Swedish	HBH02		Ca-HCO3-SO4-Cl	12,1
204	Swedish	HLX06		Na-HCO3	12,1
205	Swedish	HBH02		Ca-HCO3-Cl	12,4
206	Swedish	HBH02		Ca-HCO3-SO4	12,8
207	Swedish	KFI01		Ca-Na-HCO3	13,0
208	Swedish	HBH02		Ca-Na-HCO3	13,5
209	Swedish	HAV05		Na-HCO3-SO4	14,0
210	Swedish	HAV05		Na-HCO3-SO4	15,0
211	Swedish	KKR01		Ca-Na-HCO3	15,0
212	Swedish	KKR01		Ca-Na-HCO3	15,0
213	Swedish	KKR01		Ca-Na-HCO3	15,0
214	Swedish	KKR01		Ca-Na-HCO3	15,0
215	Swedish	HBH02		Ca-HCO3-Cl	17,7
216	Swedish	KFI01		Ca-Na-HCO3	18,0
217	Swedish	KKL02		Ca-Na-HCO3	18,0
218	Swedish	HLX01		Ca-Na-HCO3-SO4	18,1
219	Swedish	KKA03		Ca-HCO3-SO4	19,0
220	Swedish	HBH02		Ca-HCO3	19,1
221	Swedish	HBH05		Ca-Na-HCO3	19,9
222	Swedish	KKA03		Ca-HCO3-SO4	20,0
223	Swedish	KKA03		Ca-HCO3-SO4	21,0
224	Swedish	HAV06		Na-HCO3	22,0
225	Swedish	KFI07		Na-Ca-HCO3	23,0
226	Swedish	KKR01		Na-Ca-HCO3	23,0
227	Swedish	KKL02		Na-Ca-HCO3-Cl	25,0
228	Swedish	KKR01		Na-Ca-HCO3	25,0
229	Swedish	KKR01		Na-Ca-HCO3	25,0
230	Swedish	KKR01		Na-Ca-HCO3	25,0
231	Swedish	KLX02		Na-Ca-HCO3	25,5
232	Swedish	KLX02		Na-Ca-HCO3	26,2
233	Swedish	KLX02		Na-Ca-HCO3	26,5
234	Swedish	HBH05		Ca-Na-HCO3	27,6
235	Swedish	KLX02		Na-Ca-HCO3	28,0
236	Swedish	KLX02		Na-Ca-HCO3	28,0
237	Swedish	KLX02		Na-Ca-HCO3	28,0
238	Swedish	KLX02		Na-Ca-HCO3	28,3
239	Swedish	KLX02		Na-Ca-HCO3	34,0
240	Swedish	KLX02		Na-Ca-HCO3	34,5
241	Swedish	HAV06		Na-HCO3-SO4	36,0
242	Swedish	KKA04		Ca-Na-HCO3-SO4	36,0
243	Swedish	KKA04		Ca-Na-HCO3-SO4	36,0
244	Swedish	KFI01		Na-Ca-HCO3	37,0
245	Swedish	KKA04		Ca-Na-HCO3-SO4	37,0
246	Swedish	KKA04		Ca-Na-HCO3-SO4	37,0
247	Swedish	KKA04		Ca-Na-HCO3-SO4	37,0
248	Swedish	KKA04		Ca-Na-HCO3-SO4	38,0
249	Swedish	HLX01		Na-HCO3-SO4	40,9
250	Swedish	KKA04		Ca-Na-HCO3-SO4	41,0
251	Swedish	KKA04		Ca-Na-HCO3-SO4	41,0
252	Swedish	KKA04		Ca-Na-HCO3-SO4	41,0
253	Swedish	HLX01		Na-HCO3	42,3
254	Swedish	KKR01		Na-Ca-HCO3-Cl	44,0
255	Swedish	KKR01		Na-Ca-HCO3-Cl	44,0
256	Swedish	KKR01		Na-Ca-HCO3-Cl	45,0

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
257	Swedish	KLX02		Na-Ca-HCO3-Cl	45,0
258	Swedish	KKR01		Na-Ca-HCO3-Cl	47,0
259	Swedish	KKL01		Na-Ca-Cl-HCO3	48,0
260	Swedish	KLX02		Na-Ca-HCO3-Cl	60,0
261	Swedish	BFI01		Ca-HCO3-Cl	61,0
262	Swedish	HAV07		Na-HCO3-Cl	63,0
263	Swedish	KLX02		Na-Ca-HCO3-Cl	63,8
264	Swedish	KFI04		Na-HCO3-Cl	72,0
265	Swedish	KFI04		Na-HCO3-Cl	72,0
266	Swedish	HAV07		Na-HCO3-Cl	73,0
267	Swedish	KLX02		Na-HCO3-Cl	73,0
268	Swedish	KFI04		Na-HCO3-Cl	74,0
269	Swedish	KFI04		Na-HCO3-Cl	75,0
270	Swedish	KFI04		Na-HCO3-Cl	75,0
271	Swedish	KFI04		Na-HCO3-Cl	75,0
272	Swedish	KFI04		Na-HCO3-Cl	75,0
273	Swedish	KLX02		Na-Ca-HCO3-Cl	82,5
274	Swedish	HAV04		Na-HCO3-Cl	106,0
275	Swedish	HAV04		Na-HCO3-Cl	108,0
276	Swedish	KLX02		Na-Ca-HCO3-Cl	109,0
277	Swedish	HAS05		Na-HCO3-Cl-SO4	119,0
278	Swedish	HAS05		Na-HCO3-Cl-SO4	123,0
279	Swedish	KLX02		Na-Ca-Cl-HCO3	123,0
280	Swedish	KFI04		Na-HCO3-Cl	124,0
281	Swedish	KFI04		Na-HCO3-Cl	127,0
282	Swedish	KFI04		Na-HCO3-Cl	133,0
283	Swedish	KLX02		Na-Ca-Cl-HCO3	140,0
284	Swedish	KLX02		Na-Ca-Cl-HCO3	146,0
285	Swedish	KLX02		Na-Ca-Cl-HCO3	149,0
286	Swedish	KFJ02		Na-Cl-HCO3	170,0
287	Swedish	KFI07		Na-Ca-HCO3-Cl	173,0
288	Swedish	KLX02		Na-Ca-Cl-HCO3	175,0
289	Swedish	KGI04		Na-Cl	178,0
290	Swedish	KFI04		Na-HCO3-Cl	200,0
291	Swedish	HLX07		Na-Cl-HCO3	215,0
292	Swedish	1569_2		Na-Ca-Cl	219,0
293	Swedish	KLX02		Na-Cl-HCO3	235,0
294	Swedish	KGI04		Na-Ca-Cl	260,0
295	Swedish	KKR01		Na-Cl-HCO3	260,0
296	Swedish	HAS06		Na-Cl-HCO3	280,0
297	Swedish	KKR01		Na-Cl-HCO3	280,0
298	Swedish	KKR01		Na-Cl-HCO3	280,0
299	Swedish	KKR01		Na-Cl-HCO3	280,0
300	Swedish	KFI07		Na-Ca-Cl-HCO3	320,0
301	Swedish	HBH01		Na-Ca-Cl-HCO3	348,0
302	Swedish	HBH01		Na-Ca-Cl-HCO3	352,0
303	Swedish	KFI07		Na-Ca-Cl-HCO3	380,0
304	Swedish	HLX07		Na-Cl-SO4	440,0
305	Swedish	HBH01		Na-Ca-Cl-HCO3	450,0
306	Swedish	HBH01		Na-Ca-Cl-HCO3	461,0
307	Swedish	HBH01		Na-Ca-Cl-HCO3	476,0
308	Swedish	HBH01		Na-Ca-Cl-HCO3	484,0
309	Swedish	KR0012B		Na-Ca-Cl-HCO3	500,0
310	Swedish	KAS04		Na-Ca-Cl	508,0
311	Swedish	HBH01		Na-Ca-Cl-HCO3	515,0
312	Swedish	HBH01		Na-Ca-Cl-HCO3	519,0
313	Swedish	HBH01		Na-Ca-Cl-HCO3	529,0
314	Swedish	KR0012B		Na-Ca-Cl-HCO3	531,8
315	Swedish	KR0015B		Na-Ca-Cl-HCO3	534,6
316	Swedish	KAS13		Na-Cl-HCO3	543,0
317	Swedish	KFI07		Na-Ca-Cl-HCO3	545,0
318	Swedish	KLX02		Na-Ca-Cl	548,0
319	Swedish	KFI07		Na-Ca-Cl-HCO3	555,0
320	Swedish	KFI07		Na-Ca-Cl-HCO3	555,0

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
321	Swedish	HAS03		Na-Cl	574,0
322	Swedish	KAV01		Na-Ca-Cl	575,0
323	Swedish	HBH01		Na-Ca-Cl-HCO3	598,0
324	Swedish	HAS03		Na-Cl	608,0
325	Swedish	KR0012B		Na-Ca-Cl-HCO3	608,4
326	Swedish	HBH01		Na-Ca-Cl	610,0
327	Swedish	KR0012B		Na-Ca-Cl-HCO3	619,0
328	Swedish	KR0012B		Na-Ca-Cl	642,4
329	Swedish	KR0012B		Na-Ca-Cl-HCO3	645,0
330	Swedish	KR0015B		Na-Ca-Cl-HCO3	646,0
331	Swedish	HBH01		Na-Ca-Cl	654,0
332	Swedish	KR0012B		Na-Ca-Cl	662,0
333	Swedish	KR0012B		Na-Ca-Cl	665,0
334	Swedish	KFI07		Na-Ca-Cl	665,0
335	Swedish	KR0012B		Na-Ca-Cl	695,0
336	Swedish	KR0012B		Na-Ca-Cl	710,0
337	Swedish	KR0015B		Na-Ca-Cl-HCO3	729,0
338	Swedish	HBH01		Na-Ca-Cl	737,0
339	Swedish	HBH01		Na-Ca-Cl	739,0
340	Swedish	KR0015B		Na-Ca-Cl-HCO3	755,0
341	Swedish	KR0015B		Na-Ca-Cl-HCO3	760,0
342	Swedish	KR0012B		Na-Ca-Cl	780,0
343	Swedish	KR0012B		Na-Ca-Cl	789,0
344	Swedish	KR0015B		Na-Ca-Cl-HCO3	792,0
345	Swedish	KR0015B		Na-Ca-Cl-HCO3	805,0
346	Swedish	HBH01		Na-Ca-Cl	812,0
347	Swedish	KR0012B		Na-Ca-Cl	823,0
348	Swedish	BFI01		Na-Ca-Cl	830,0
349	Swedish	HBH01		Na-Ca-Cl	833,0
350	Swedish	KR0012B		Na-Ca-Cl	835,0
351	Swedish	KR0012B		Na-Ca-Cl	840,0
352	Swedish	HBH01		Na-Ca-Cl	843,0
353	Swedish	KR0015B		Na-Ca-Cl	851,0
354	Swedish	HBH01		Na-Ca-Cl	869,0
355	Swedish	KR0012B		Na-Ca-Cl	876,0
356	Swedish	KR0015B		Na-Ca-Cl	876,0
357	Swedish	KR0015B		Na-Ca-Cl	878,0
358	Swedish	KR0012B		Na-Ca-Cl	888,0
359	Swedish	KR0015B		Na-Ca-Cl	889,9
360	Swedish	KR0015B		Na-Ca-Cl	895,0
361	Swedish	KR0015B		Na-Ca-Cl	895,0
362	Swedish	KR0015B		Na-Ca-Cl	895,0
363	Swedish	KR0015B		Na-Ca-Cl	901,0
364	Swedish	KR0012B		Na-Ca-Cl	915,0
365	Swedish	KAS08		Na-Ca-Cl	918,0
366	Swedish	KR0012B		Na-Ca-Cl	918,0
367	Swedish	KR0015B		Na-Ca-Cl	924,0
368	Swedish	HBH01		Na-Ca-Cl	932,0
369	Swedish	KR0012B		Na-Ca-Cl	932,0
370	Swedish	KR0012B		Na-Ca-Cl	934,0
371	Swedish	KR0012B		Na-Ca-Cl	970,0
372	Swedish	KR0015B		Na-Ca-Cl	977,1
373	Swedish	KR0012B		Na-Ca-Cl	1000,0
374	Swedish	KR0012B		Na-Ca-Cl	1010,0
375	Swedish	KR0012B		Na-Ca-Cl	1020,0
376	Swedish	KR0015B		Na-Ca-Cl	1020,0
377	Swedish	KR0012B		Na-Ca-Cl	1040,0
378	Swedish	KR0015B		Na-Ca-Cl	1040,0
379	Swedish	KR0015B		Na-Ca-Cl	1040,0
380	Swedish	HBH01		Na-Ca-Cl	1056,0
381	Swedish	KR0012B		Na-Ca-Cl	1070,0
382	Swedish	HBH01		Na-Ca-Cl	1080,0
383	Swedish	KR0012B		Na-Ca-Cl	1080,0
384	Swedish	KR0015B		Na-Ca-Cl	1080,0

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
385	Swedish	KLX02		Ca-Na-Cl	1080,0
386	Swedish	KR0012B		Na-Ca-Cl	1110,0
387	Swedish	KR0015B		Na-Ca-Cl	1120,0
388	Swedish	KR0015B		Na-Ca-Cl	1120,0
389	Swedish	KR0015B		Na-Ca-Cl	1120,0
390	Swedish	KR0012B		Na-Ca-Cl	1130,0
391	Swedish	KR0012B		Na-Ca-Cl	1130,0
392	Swedish	KR0015B		Na-Ca-Cl	1130,0
393	Swedish	KR0015B		Na-Ca-Cl	1140,0
394	Swedish	KR0015B		Na-Ca-Cl	1150,0
395	Swedish	SA1680A		Na-Ca-Cl	1160,0
396	Swedish	KR0015B		Na-Ca-Cl	1170,0
397	Swedish	HBH01		Na-Ca-Cl	1200,0
398	Swedish	KAS03		Na-Ca-Cl	1220,0
399	Swedish	KR0015B		Na-Ca-Cl	1250,0
400	Swedish	KR0012B		Na-Ca-Cl	1270,0
401	Swedish	KR0015B		Na-Ca-Cl	1270,0
402	Swedish	PROV 6b		Na-Cl	1290,0
403	Swedish	KR0012B		Na-Ca-Cl	1290,0
404	Swedish	KR0012B		Na-Ca-Cl	1300,0
405	Swedish	KR0015B		Na-Ca-Cl	1300,0
406	Swedish	KR0012B		Na-Ca-Cl	1330,0
407	Swedish	KR0012B		Na-Ca-Cl	1360,0
408	Swedish	KR0013B		Na-Ca-Cl	1458,9
409	Swedish	KR0015B		Na-Ca-Cl	1480,0
410	Swedish	KR0015B		Na-Ca-Cl	1500,0
411	Swedish	BFI01		Na-Ca-Cl	1500,0
412	Swedish	KR0013B		Na-Ca-Cl	1520,9
413	Swedish	SA1680B		Na-Ca-Cl	1560,0
414	Swedish	SA1696B		Na-Ca-Cl	1560,0
415	Swedish	HAS07		Na-Ca-Cl	1650,0
416	Swedish	KR0013B		Na-Ca-Cl	1650,0
417	Swedish	KR0013B		Na-Ca-Cl	1680,0
418	Swedish	KR0013B		Na-Ca-Cl	1690,0
419	Swedish	KR0013B		Na-Ca-Cl	1690,0
420	Swedish	KR0013B		Na-Ca-Cl	1690,0
421	Swedish	KLX01		Na-Ca-Cl	1700,0
422	Swedish	KR0013B		Na-Ca-Cl	1710,0
423	Swedish	KR0013B		Na-Ca-Cl	1720,0
424	Swedish	KR0013B		Na-Ca-Cl	1737,2
425	Swedish	HAS07		Na-Ca-Cl	1740,0
426	Swedish	KR0013B		Na-Ca-Cl	1740,0
427	Swedish	KR0013B		Na-Ca-Cl	1740,0
428	Swedish	KR0013B		Na-Ca-Cl	1750,0
429	Swedish	HAS06		Na-Ca-Cl	1760,0
430	Swedish	KR0013B		Na-Ca-Cl	1790,0
431	Swedish	KR0013B		Na-Ca-Cl	1790,0
432	Swedish	KR0013B		Na-Ca-Cl	1800,0
433	Swedish	KR0013B		Na-Ca-Cl	1840,0
434	Swedish	KR0013B		Na-Ca-Cl	1870,0
435	Swedish	KR0013B		Na-Ca-Cl	1880,0
436	Swedish	KR0013B		Na-Ca-Cl	1900,0
437	Swedish	KR0013B		Na-Ca-Cl	1920,0
438	Swedish	KR0013B		Na-Ca-Cl	1920,0
439	Swedish	SA0158A		Na-Cl	1942,8
440	Swedish	KAV01		Na-Ca-Cl	1970,0
441	Swedish	KR0013B		Na-Ca-Cl	1990,0
442	Swedish	KR0013B		Na-Ca-Cl	2010,0
443	Swedish	KR0013B		Na-Ca-Cl	2020,0
444	Swedish	KR0013B		Na-Ca-Cl	2040,0
445	Swedish	KLX01		Na-Ca-Cl	2050,0
446	Swedish	KR0013B		Na-Ca-Cl	2110,0
447	Swedish	KR0013B		Na-Ca-Cl	2130,0
448	Swedish	KR0013B		Na-Ca-Cl	2150,0

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
449	Swedish	KAS13		Na-Ca-Cl	2160,0
450	Swedish	KR0013B		Na-Ca-Cl	2290,0
451	Swedish	1569_1		Na-Ca-Cl	2318,0
452	Swedish	KR0013B		Na-Ca-Cl	2340,0
453	Swedish	KR0013B		Na-Ca-Cl	2340,0
454	Swedish	SA1693F		Na-Ca-Cl	2400,0
455	Swedish	KAS06		Na-Ca-Cl	2450,0
456	Swedish	KR0013B		Na-Ca-Cl	2450,0
457	Swedish	KAS07		Na-Ca-Cl	2460,0
458	Swedish	KR0013B		Na-Ca-Cl	2460,0
459	Swedish	KR0013B		Na-Ca-Cl	2500,0
460	Swedish	SA0311A		Na-Ca-Cl	2655,4
461	Swedish	PASSEA01		Na-Cl	2670,0
462	Swedish	SA0435A		Na-Ca-Cl	2712,2
463	Swedish	SA1420A		Na-Cl	2721,0
464	Swedish	SA1713A		Na-Ca-Cl	2730,0
465	Swedish	KAS04		Na-Ca-Cl	2760,0
466	Swedish	SA1680B		Na-Ca-Cl	2790,0
467	Swedish	KFI09		Na-Ca-Cl	2800,0
468	Swedish	KAS09		Na-Cl	2804,3
469	Swedish	KAS03		Na-Ca-Cl	2850,0
470	Swedish	SA1420A		Na-Cl	2900,1
471	Swedish	KAS09		Na-Cl	2930,0
472	Swedish	SA1420A		Na-Cl	2949,7
473	Swedish	KAS03		Na-Ca-Cl	2950,0
474	Swedish	SA0813B		Na-Cl	2979,8
475	Swedish	KAS04		Na-Ca-Cl	3030,0
476	Swedish	SA1009B		Na-Cl	3045,4
477	Swedish	KR0015B		Na-Ca-Cl	3050,0
478	Swedish	SA1420A		Na-Ca-Cl	3052,5
479	Swedish	SA0813B		Na-Cl	3080,9
480	Swedish	SA0813B		Na-Cl	3112,8
481	Swedish	PASSEA02		Na-Cl	3160,0
482	Swedish	KAS09		Na-Cl	3162,0
483	Swedish	SA0237B		Na-Ca-Cl	3173,0
484	Swedish	SA2074A		Na-Ca-Cl	3238,6
485	Swedish	KAS02		Na-Ca-Cl	3250,0
486	Swedish	SA1210A		Na-Cl	3254,6
487	Swedish	SA0813B		Na-Cl	3272,3
488	Swedish	SA0813B		Na-Cl	3300,0
489	Swedish	PASSEA02		Na-Cl	3320,0
490	Swedish	SA0813B		Na-Cl	3350,0
491	Swedish	KAS03		Na-Ca-Cl	3360,0
492	Swedish	SA0813B		Na-Cl	3360,0
493	Swedish	SA1210A		Na-Cl	3369,7
494	Swedish	SA0205A		Na-Ca-Cl	3376,9
495	Swedish	PASSEA01		Na-Cl	3380,0
496	Swedish	SA1009B		Na-Cl	3385,8
497	Swedish	KAS09		Na-Cl	3390,0
498	Swedish	SA1009B		Na-Cl	3390,0
499	Swedish	KAS14		Na-Cl	3399,9
500	Swedish	KFI05		Na-Ca-Cl	3400,0
501	Swedish	HA0982B		Na-Ca-Cl	3403,5
502	Swedish	KAS14		Na-Cl	3403,5
503	Swedish	SA2074A		Na-Ca-Cl	3414,1
504	Swedish	SA1420A		Na-Ca-Cl	3419,9
505	Swedish	SA1420A		Na-Ca-Cl	3434,5
506	Swedish	HA1749A		Na-Ca-Cl	3450,0
507	Swedish	SA0813B		Na-Cl	3450,0
508	Swedish	SA1210A		Na-Cl	3450,0
509	Swedish	SA1210A		Na-Cl	3450,0
510	Swedish	SA1420A		Na-Ca-Cl	3450,0
511	Swedish	KFI05		Na-Ca-Cl	3450,0
512	Swedish	SA0327B		Na-Ca-Cl	3453,1

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
513	Swedish	SA1229A		Na-Ca-Cl	3481,5
514	Swedish	KA3105A		Na-Ca-Cl	3520,0
515	Swedish	KAS03		Na-Ca-Cl	3530,0
516	Swedish	SA1420A		Na-Ca-Cl	3530,0
517	Swedish	PASSEA03		Na-Cl	3540,0
518	Swedish	KAS09		Na-Cl	3541,8
519	Swedish	PASSEA05		Na-Cl	3610,0
520	Swedish	PASSEA03		Na-Cl	3620,0
521	Swedish	KAS06		Na-Ca-Cl	3630,0
522	Swedish	SA0958B		Na-Ca-Cl	3641,0
523	Swedish	SA1009B		Na-Cl	3672,9
524	Swedish	SA1229A		Na-Ca-Cl	3674,7
525	Swedish	PASSEA04		Na-Cl	3680,0
526	Swedish	SA1229A		Na-Ca-Cl	3687,1
527	Swedish	KAS07		Na-Ca-Cl	3743,8
528	Swedish	KLX02		Ca-Na-Cl	3780,0
529	Swedish	SA1742A		Na-Ca-Cl	3800,0
530	Swedish	KAS07		Na-Ca-Cl	3810,0
531	Swedish	KA3110A		Na-Ca-Cl	3820,0
532	Swedish	KAS02		Na-Ca-Cl	3820,0
533	Swedish	KAS09		Na-Cl	3820,0
534	Swedish	KAS03		Na-Ca-Cl	3840,0
535	Swedish	SA1229A		Na-Cl	3871,5
536	Swedish	SA2142A		Na-Ca-Cl	3880,0
537	Swedish	SA0452A		Na-Ca-Cl	3882,1
538	Swedish	SA1696B		Na-Ca-Cl	3910,0
539	Swedish	SA1327B		Na-Ca-Cl	3920,0
540	Swedish	SA1229A		Na-Ca-Cl	3928,2
541	Swedish	SA1420A		Na-Ca-Cl	3930,0
542	Swedish	KA3110A		Na-Ca-Cl	3940,0
543	Swedish	KA3105A		Na-Ca-Cl	3960,0
544	Swedish	SA2074A		Na-Ca-Cl	3967,2
545	Swedish	SA1009B		Na-Ca-Cl	3984,1
546	Swedish	PASSEA04		Na-Cl	4030,0
547	Swedish	KA1639A		Na-Ca-Cl	4060,0
548	Swedish	SA1009B		Na-Ca-Cl	4080,0
549	Swedish	SA0958B		Na-Ca-Cl	4087,9
550	Swedish	SA0468A		Na-Ca-Cl	4098,4
551	Swedish	PASSEA05		Na-Cl	4100,0
552	Swedish	SA1229A		Na-Ca-Cl	4105,5
553	Swedish	SA1009B		Na-Ca-Cl	4125,6
554	Swedish	SA1229A		Na-Ca-Cl	4140,0
555	Swedish	SA1420A		Na-Ca-Cl	4140,0
556	Swedish	KAS12		Na-Ca-Cl	4158,6
557	Swedish	KBH02		Na-Ca-Cl	4210,0
558	Swedish	SA1229A		Na-Ca-Cl	4210,9
559	Swedish	KAS12		Na-Ca-Cl	4220,0
560	Swedish	KA1639A		Na-Ca-Cl	4230,0
561	Swedish	KAS03		Na-Ca-Cl	4230,0
562	Swedish	KA1639A		Na-Ca-Cl	4260,0
563	Swedish	SA0958B		Na-Ca-Cl	4260,0
564	Swedish	SA2074A		Na-Ca-Cl	4275,6
565	Swedish	KXTT3		Na-Ca-Cl	4296,9
566	Swedish	KAV01		Na-Ca-Cl	4300,0
567	Swedish	HA1327B		Na-Ca-Cl	4310,0
568	Swedish	SA0923A		Na-Ca-Cl	4310,0
569	Swedish	SA0958B		Na-Ca-Cl	4310,0
570	Swedish	KBH02		Na-Ca-Cl	4320,0
571	Swedish	SA2273A		Na-Ca-Cl	4346,5
572	Swedish	HA1327B		Na-Ca-Cl	4350,0
573	Swedish	KBH02		Na-Ca-Cl	4350,0
574	Swedish	SA1062B		Na-Ca-Cl	4350,0
575	Swedish	KXTT2		Na-Ca-Cl	4389,1
576	Swedish	SA2109B		Na-Ca-Cl	4480,0

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
577	Swedish	KAS05		Na-Ca-Cl	4500,0
578	Swedish	SA0923A		Na-Ca-Cl	4500,0
579	Swedish	HA1327B		Na-Ca-Cl	4600,0
580	Swedish	KAS03		Na-Ca-Cl	4600,0
581	Swedish	SA1420A		Na-Ca-Cl	4610,0
582	Swedish	SA1210A		Na-Ca-Cl	4620,0
583	Swedish	KAS03		Na-Ca-Cl	4637,0
584	Swedish	KFI05		Ca-Na-Cl	4650,0
585	Swedish	SA2074A		Na-Ca-Cl	4670,0
586	Swedish	KLX01		Na-Ca-Cl	4680,0
587	Swedish	KAS03		Na-Ca-Cl	4701,1
588	Swedish	SA1342B		Na-Ca-Cl	4730,0
589	Swedish	KA2512A		Na-Ca-Cl	4750,7
590	Swedish	HA1327B		Na-Ca-Cl	4770,0
591	Swedish	SA2273A		Na-Ca-Cl	4787,9
592	Swedish	SA1696B		Na-Ca-Cl	4828,0
593	Swedish	KAS12		Na-Ca-Cl	4860,0
594	Swedish	KA3005A		Na-Ca-Cl	4870,0
595	Swedish	KLX01		Na-Ca-Cl	4870,0
596	Swedish	KA3005A		Na-Ca-Cl	4878,3
597	Swedish	KA0483A		Na-Ca-Cl	4890,0
598	Swedish	SA1077A		Na-Ca-Cl	4890,0
599	Swedish	KXTT4		Na-Ca-Cl	4920,9
600	Swedish	SA2273A		Na-Ca-Cl	4920,9
601	Swedish	SA1861A		Na-Ca-Cl	4940,0
602	Swedish	SA2273A		Na-Ca-Cl	4998,9
603	Swedish	KXTT4		Na-Ca-Cl	5013,1
604	Swedish	SA2322A		Na-Ca-Cl	5034,3
605	Swedish	HAS13		Na-Ca-Cl	5070,0
606	Swedish	SA2322A		Na-Ca-Cl	5070,0
607	Swedish	KXTT1		Na-Ca-Cl	5084,0
608	Swedish	KXTT3		Na-Ca-Cl	5091,1
609	Swedish	KFI09		Na-Ca-Cl	5100,0
610	Swedish	KFI09		Na-Ca-Cl	5100,0
611	Swedish	SA2273B		Na-Ca-Cl	5105,2
612	Swedish	KXTT2		Na-Ca-Cl	5119,4
613	Swedish	SA1828B		Na-Ca-Cl	5123,0
614	Swedish	SA1111B		Na-Ca-Cl	5130,0
615	Swedish	HAS02		Na-Ca-Cl	5160,0
616	Swedish	SA1614B		Na-Ca-Cl	5160,0
617	Swedish	SA2289B		Na-Ca-Cl	5167,3
618	Swedish	SA1614B		Na-Ca-Cl	5176,1
619	Swedish	KAS03		Na-Ca-Cl	5180,0
620	Swedish	SA1828B		Na-Ca-Cl	5200,0
621	Swedish	BFI01		Ca-Na-Cl	5200,0
622	Swedish	SA1844B		Na-Ca-Cl	5250,0
623	Swedish	SA2074A		Na-Ca-Cl	5282,5
624	Swedish	SA1062B		Na-Ca-Cl	5320,0
625	Swedish	KAS02		Ca-Na-Cl	5340,0
626	Swedish	SA2322A		Na-Ca-Cl	5340,0
627	Swedish	SA2322A		Na-Ca-Cl	5353,0
628	Swedish	KAS02		Na-Ca-Cl	5360,0
629	Swedish	KA3005A		Na-Ca-Cl	5400,0
630	Swedish	KAS02		Ca-Na-Cl	5440,0
631	Swedish	SA0850B		Na-Ca-Cl	5440,0
632	Swedish	SA2175B		Na-Ca-Cl	5442,0
633	Swedish	SA2240B		Na-Ca-Cl	5460,0
634	Swedish	SA2273B		Na-Ca-Cl	5460,0
635	Swedish	HAS02		Na-Ca-Cl	5470,0
636	Swedish	SA1730A		Na-Ca-Cl	5470,0
637	Swedish	SA1696B		Na-Ca-Cl	5498,8
638	Swedish	BFI01		Ca-Na-Cl	5500,0
639	Swedish	BFI01		Ca-Na-Cl	5500,0
640	Swedish	SA1828B		Na-Ca-Cl	5540,0

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
641	Swedish	SA2240B		Na-Ca-Cl	5560,0
642	Swedish	SA2273A		Na-Ca-Cl	5570,0
643	Swedish	SA2289B		Na-Ca-Cl	5570,0
644	Swedish	SA0976B		Na-Ca-Cl	5590,0
645	Swedish	SA1229A		Na-Ca-Cl	5590,0
646	Swedish	KA3067A		Ca-Na-Cl	5650,0
647	Swedish	SA1614B		Na-Ca-Cl	5650,0
648	Swedish	SA2175B		Na-Ca-Cl	5650,0
649	Swedish	KFI05		Ca-Na-Cl	5650,0
650	Swedish	KAS06		Na-Ca-Cl	5670,0
651	Swedish	KAS06		Na-Ca-Cl	5680,0
652	Swedish	SA1696B		Na-Ca-Cl	5690,0
653	Swedish	KA3010A		Na-Ca-Cl	5770,0
654	Swedish	SA1614B		Na-Ca-Cl	5815,5
655	Swedish	KAS04		Ca-Na-Cl	5840,0
656	Swedish	SA1828B		Na-Ca-Cl	5849,7
657	Swedish	KAS03		Ca-Na-Cl	5880,0
658	Swedish	KA2162B		Na-Ca-Cl	5940,0
659	Swedish	KAS07		Na-Ca-Cl	5960,0
660	Swedish	KAS06		Na-Ca-Cl	5970,0
661	Swedish	KA2162B		Na-Ca-Cl	5990,0
662	Swedish	SA1828B		Na-Ca-Cl	6010,0
663	Swedish	SA2600A		Na-Ca-Cl	6023,5
664	Swedish	KA1750A		Na-Ca-Cl	6030,0
665	Swedish	KAS07		Na-Ca-Cl	6060,0
666	Swedish	SA1730A		Ca-Na-Cl	6062,5
667	Swedish	SA1730A		Ca-Na-Cl	6064,5
668	Swedish	KA2162B		Na-Ca-Cl	6070,0
669	Swedish	KAS07		Na-Ca-Cl	6120,0
670	Swedish	KAS06		Na-Ca-Cl	6150,0
671	Swedish	SA2600A		Na-Ca-Cl	6183,0
672	Swedish	SA1614B		Ca-Na-Cl	6207,3
673	Swedish	KA1750A		Na-Ca-Cl	6230,0
674	Swedish	SA2355B		Na-Ca-Cl	6240,0
675	Swedish	SA1696B		Ca-Na-Cl	6275,2
676	Swedish	KA1639A		Na-Ca-Cl	6290,0
677	Swedish	KAS08		Na-Ca-Cl	6300,0
678	Swedish	KA1750A		Na-Ca-Cl	6310,0
679	Swedish	KA1750A		Na-Ca-Cl	6320,0
680	Swedish	KA1639A		Na-Ca-Cl	6390,0
681	Swedish	KAS02		Ca-Na-Cl	6410,0
682	Swedish	KAS08		Na-Ca-Cl	6452,0
683	Swedish	SA2734B		Na-Ca-Cl	6490,0
684	Swedish	SA2649A		Na-Ca-Cl	6523,0
685	Swedish	SA2681A		Na-Ca-Cl	6523,0
686	Swedish	SA1828B		Na-Ca-Cl	6550,0
687	Swedish	KA3067A		Ca-Na-Cl	6560,0
688	Swedish	KA3010A		Ca-Na-Cl	6600,0
689	Swedish	SA2583A		Ca-Na-Cl	6647,0
690	Swedish	KA3385A		Ca-Na-Cl	6650,0
691	Swedish	KA3191F		Na-Ca-Cl	6691,8
692	Swedish	SA2664A		Na-Ca-Cl	6701,0
693	Swedish	KA3385A		Ca-Na-Cl	6710,0
694	Swedish	SA2600A		Na-Ca-Cl	6718,3
695	Swedish	SA2681B		Na-Ca-Cl	6842,0
696	Swedish	SA1730A		Ca-Na-Cl	6890,0
697	Swedish	SA2583A		Na-Ca-Cl	6895,6
698	Swedish	KA1639A		Ca-Na-Cl	6950,0
699	Swedish	KA1639A		Ca-Na-Cl	6960,0
700	Swedish	SA2634B		Ca-Na-Cl	7197,0
701	Swedish	KAS05		Ca-Na-Cl	7290,0
702	Swedish	SA1730A		Ca-Na-Cl	7329,9
703	Swedish	KA3191F		Ca-Na-Cl	7409,7
704	Swedish	SA2768B		Ca-Na-Cl	7640,0

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
705	Swedish	SA2600A		Ca-Na-Cl	7734,7
706	Swedish	SA2783A		Ca-Na-Cl	8030,0
707	Swedish	KAS03		Ca-Na-Cl	8080,0
708	Swedish	SA2600A		Ca-Na-Cl	8349,0
709	Swedish	KAS05		Ca-Na-Cl	8402,0
710	Swedish	SA2783A		Ca-Na-Cl	8411,2
711	Swedish	SA1730A		Ca-Na-Cl	8499,9
712	Swedish	KA3067A		Ca-Na-Cl	8584,9
713	Swedish	SA2600B		Ca-Na-Cl	8597,0
714	Swedish	SA1730A		Ca-Na-Cl	8650,5
715	Swedish	SA1730A		Ca-Na-Cl	8671,8
716	Swedish	SA2663B		Ca-Na-Cl	8686,0
717	Swedish	SA2783A		Ca-Na-Cl	9022,8
718	Swedish	SA2768A		Ca-Na-Cl	9058,0
719	Swedish	SA2834B		Ca-Na-Cl	9094,0
720	Swedish	KAV01		Ca-Na-Cl	9700,0
721	Swedish	KLX02		Ca-Na-Cl	9910,0
722	Swedish	SA2703A		Ca-Na-Cl	10140,0
723	Swedish	SA2718A		Ca-Na-Cl	10148,4
724	Swedish	KAS02		Ca-Na-Cl	10200,0
725	Swedish	KA2858A		Ca-Na-Cl	10300,0
726	Swedish	KA1755A		Ca-Na-Cl	10407,2
727	Swedish	SA2703A		Ca-Na-Cl	10591,6
728	Swedish	SA2783A		Ca-Na-Cl	10910,7
729	Swedish	SA2783A		Ca-Na-Cl	10944,3
730	Swedish	KAS02		Ca-Na-Cl	11100,0
731	Swedish	KAS02		Ca-Na-Cl	11100,0
732	Swedish	SA2880A		Ca-Na-Cl	11371,5
733	Swedish	KAS03		Ca-Na-Cl	12300,0
734	Swedish	SA2880A		Ca-Na-Cl	12956,3
735	Swedish	KA2862A		Ca-Na-Cl	13200,0
736	Swedish	KA2862A		Ca-Na-Cl	13300,0
737	Swedish	KLX02		Ca-Na-Cl	13600,0
738	Swedish	KLX02		Ca-Na-Cl	15800,0
739	Swedish	KLX02		Ca-Na-Cl	16000,0
740	Swedish	KLX02		Ca-Na-Cl	16800,0
741	Swedish	KLX02		Ca-Na-Cl	18500,0
742	Swedish	KLX02		Ca-Na-Cl	21500,0
743	Swedish	KLX02		Ca-Na-Cl	29100,0
744	Swedish	KLX02		Ca-Na-Cl	33100,0
745	Swedish	KLX02		Ca-Na-Cl	39700,0
746	Swedish	KLX02		Ca-Na-Cl	43300,0
747	Swedish	KLX02		Ca-Na-Cl	43500,0
748	Swedish	KLX02		Ca-Na-Cl	44800,0
749	Swedish	KLX02		Ca-Na-Cl	45500,0
750	Geomod	KA1061A		Na-Cl	3630,0
751	Geomod	KA1061A		Na-Cl	2780,0
752	Geomod	KA1061A		Na-Cl	2940,0
753	Geomod	KA1061A		Na-Cl	2870,0
754	Geomod	KA1061A		Na-Cl	3080,0
755	Geomod	KA1061A		Na-Cl	2680,0
756	Geomod	KA1131B		Na-Ca-Cl	3538,4
757	Geomod	KA1131B		Na-Ca-Cl	3720,0
758	Geomod	KA1131B		Na-Cl	3410,0
759	Geomod	KA1131B		Na-Cl	3370,0
760	Geomod	KA1131B		Na-Ca-Cl	3380,0
761	Geomod	KA1131B		Na-Ca-Cl	3240,0
762	Geomod	KA1131B		Na-Cl	3110,0
763	Geomod	KA1755A		Ca-Na-Cl	10425,0
764	Geomod	KA1755A		Ca-Na-Cl	10565,0
765	Geomod	KA1755A		Ca-Na-Cl	11283,1
766	Geomod	KA1755A		Ca-Na-Cl	11097,8
767	Geomod	KA1755A		Ca-Na-Cl	11400,0
768	Geomod	KA1755A		Ca-Na-Cl	11300,0

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
769	Geomod	KA1755A		Ca-Na-Cl	11460,0
770	Geomod	KA1755A		Ca-Na-Cl	11360,0
771	Geomod	KA1755A		Ca-Na-Cl	11430,0
772	Geomod	KA1755A		Ca-Na-Cl	11720,0
773	Geomod	KA2050A		Na-Ca-Cl	4960,5
774	Geomod	KA2050A		Na-Ca-Cl	5220,0
775	Geomod	KA2050A		Na-Ca-Cl	4720,0
776	Geomod	KA2050A		Na-Ca-Cl	4510,0
777	Geomod	KA2050A		Na-Ca-Cl	4180,0
778	Geomod	KA2050A		Na-Ca-Cl	3670,0
779	Geomod	KA2050A		Na-Ca-Cl	3180,0
780	Geomod	KA2162B		Na-Ca-Cl	6000,8
781	Geomod	KA2162B		Na-Ca-Cl	5940,0
782	Geomod	KA2162B		Na-Ca-Cl	5930,0
783	Geomod	KA2162B		Na-Ca-Cl	5830,0
784	Geomod	KA2162B		Na-Ca-Cl	6190,0
785	Geomod	KA2162B		Ca-Na-Cl	6390,0
786	Geomod	KA2162B		Na-Ca-Cl	6550,0
787	Geomod	KA2511A		Na-Ca-Cl	3380,0
788	Geomod	KA2511A		Na-Ca-Cl	4080,0
789	Geomod	KA2511A		Na-Ca-Cl	3350,0
790	Geomod	KA2511A		Na-Ca-Cl	3890,0
791	Geomod	KA2511A		Na-Ca-Cl	3230,0
792	Geomod	KA2511A		Na-Ca-Cl	3360,0
793	Geomod	KA2511A		Na-Ca-Cl	3120,0
794	Geomod	KA2511A		Na-Ca-Cl	3060,0
795	Geomod	KA2511A		Na-Ca-Cl	3470,0
796	Geomod	KA2511A		Na-Ca-Cl	3110,0
797	Geomod	KA2511A		Na-Ca-Cl	3420,0
798	Geomod	KA2512A		Na-Ca-Cl	3720,0
799	Geomod	KA2563A		Na-Ca-Cl	6296,5
800	Geomod	KA2563A		Na-Ca-Cl	5160,0
801	Geomod	KA2563A		Na-Ca-Cl	4830,0
802	Geomod	KA2563A		Na-Ca-Cl	5350,0
803	Geomod	KA2563A		Na-Ca-Cl	5010,0
804	Geomod	KA2563A		Na-Ca-Cl	4480,0
805	Geomod	KA2563A		Na-Ca-Cl	5730,0
806	Geomod	KA2563A		Na-Ca-Cl	4620,0
807	Geomod	KA2563A		Na-Ca-Cl	4760,0
808	Geomod	KA2563A		Na-Ca-Cl	3100,0
809	Geomod	KA2563A		Na-Ca-Cl	3410,0
810	Geomod	KA2858A		Ca-Na-Cl	10300,0
811	Geomod	KA2862A		Ca-Na-Cl	13300,0
812	Geomod	KA2862A		Ca-Na-Cl	13200,0
813	Geomod	KA2862A		Ca-Na-Cl	15400,0
814	Geomod	KA2862A		Ca-Na-Cl	15400,0
815	Geomod	KA2862A		Ca-Na-Cl	15700,0
816	Geomod	KA2862A		Ca-Na-Cl	15860,0
817	Geomod	KA2862A		Ca-Na-Cl	15870,0
818	Geomod	KA2862A		Ca-Na-Cl	15680,0
819	Geomod	KA2862A		Ca-Na-Cl	16140,0
820	Geomod	KA2865A01		Ca-Na-Cl	6540,0
821	Geomod	KA3005A		Na-Ca-Cl	5400,0
822	Geomod	KA3005A		Na-Ca-Cl	4878,3
823	Geomod	KA3010A		Ca-Na-Cl	6600,0
824	Geomod	KA3065A03		Ca-Na-Cl	6270,0
825	Geomod	KA3067A		Ca-Na-Cl	6560,0
826	Geomod	KA3067A		Ca-Na-Cl	8584,9
827	Geomod	KA3105A		Na-Ca-Cl	3520,0
828	Geomod	KA3110A		Na-Ca-Cl	3940,0
829	Geomod	KA3110A		Na-Ca-Cl	3390,0
830	Geomod	KA3110A		Na-Cl	3100,0
831	Geomod	KA3110A		Na-Ca-Cl	3080,0
832	Geomod	KA3110A		Na-Ca-Cl	3200,0

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
833	Geomod	KA3110A		Na-Cl	3080,0
834	Geomod	KA3110A		Na-Cl	2730,0
835	Geomod	KA3385A		Ca-Na-Cl	6650,0
836	Geomod	KA3385A		Ca-Na-Cl	6710,0
837	Geomod	KA3385A		Na-Ca-Cl	6630,0
838	Geomod	KA3385A		Na-Ca-Cl	6690,0
839	Geomod	KA3385A		Na-Ca-Cl	6930,0
840	Geomod	KA3385A		Na-Ca-Cl	7010,0
841	Geomod	KA3385A		Na-Ca-Cl	6900,0
842	Geomod	KA3385A		Na-Ca-Cl	6670,0
843	Geomod	KA3539G		Na-Ca-Cl	3750,0
844	Geomod	KA3539G		Na-Ca-Cl	3840,0
845	Geomod	KA3542G01		Na-Ca-Cl	4020,0
846	Geomod	KA3542G01		Na-Ca-Cl	4150,0
847	Geomod	KA3542G01		Na-Ca-Cl	3940,0
848	Geomod	KA3542G02		Na-Ca-Cl	3980,0
849	Geomod	KA3542G02		Na-Ca-Cl	3730,0
850	Geomod	KA3542G02		Na-Ca-Cl	3890,0
851	Geomod	KA3545G		Na-Ca-Cl	3790,0
852	Geomod	KA3548A01		Na-Ca-Cl	3630,0
853	Geomod	KA3548A01		Na-Ca-Cl	3620,0
854	Geomod	KA3548A01		Na-Ca-Cl	3650,0
855	Geomod	KA3554G01		Na-Ca-Cl	4200,0
856	Geomod	KA3554G01		Na-Ca-Cl	4580,0
857	Geomod	KA3554G02		Na-Ca-Cl	3790,0
858	Geomod	KA3554G02		Na-Ca-Cl	3910,0
859	Geomod	KA3566G01		Na-Ca-Cl	4020,0
860	Geomod	KA3566G01		Na-Ca-Cl	4070,0
861	Geomod	KA3566G02		Na-Ca-Cl	4110,0
862	Geomod	KA3566G02		Na-Ca-Cl	4210,0
863	Geomod	KA3566G02		Na-Ca-Cl	4240,0
864	Geomod	KA3573A		Na-Ca-Cl	3640,0
865	Geomod	KA3573A		Na-Ca-Cl	3670,0
866	Geomod	KA3573A		Na-Ca-Cl	4290,0
867	Geomod	KA3573A		Na-Ca-Cl	4060,0
868	Geomod	KA3573A		Na-Ca-Cl	3450,0
869	Geomod	KA3573A		Na-Ca-Cl	3230,0
870	Geomod	KA3590G01		Na-Ca-Cl	4200,0
871	Geomod	KA3590G01		Na-Ca-Cl	4250,0
872	Geomod	KA3590G02		Na-Ca-Cl	3940,0
873	Geomod	KA3590G02		Na-Ca-Cl	4270,0
874	Geomod	KA3590G02		Na-Ca-Cl	4220,0
875	Geomod	KA3593G		Na-Ca-Cl	4900,0
876	Geomod	KA3593G		Na-Ca-Cl	4810,0
877	Geomod	KA3600F		Na-Ca-Cl	3730,0
878	Geomod	KA3600F		Na-Ca-Cl	3830,0
879	Geomod	KA3600F		Na-Ca-Cl	4150,0
880	Geomod	KA3600F		Na-Ca-Cl	4870,0
881	Geomod	KA3600F		Na-Ca-Cl	5180,0
882	Geomod	KA3600F		Na-Ca-Cl	3480,0
883	Geomod	KA3600F		Na-Ca-Cl	5420,0
884	Geomod	KA3600F		Na-Ca-Cl	5950,0
885	Geomod	KA3600F		Na-Ca-Cl	4600,0
886	Geomod	KAS03		Ca-Na-Cl	6502,0
887	Geomod	KAS03		Na-Ca-Cl	1542,0
888	Geomod	KAS03		Ca-Na-Cl	6725,7
889	Geomod	KAS03		Na-Ca-Cl	2578,0
890	Geomod	KAS03		Na-Ca-Cl	2770,0
891	Geomod	KAS03		Ca-Na-Cl	6400,0
892	Geomod	KAS03		Na-Ca-Cl	2630,0
893	Geomod	KAS03		Na-Ca-Cl	2730,0
894	Geomod	KAS03		Ca-Na-Cl	6370,0
895	Geomod	KAS03		Na-Ca-Cl	2940,0
896	Geomod	KAS03		Ca-Na-Cl	6350,0

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
897	Geomod	KAS03		Ca-Na-Cl	6230,0
898	Geomod	KAS03		Na-Ca-Cl	2720,0
899	Geomod	KAS03		Na-Ca-Cl	2690,0
900	Geomod	KAS03		Na-Ca-Cl	6100,0
901	Geomod	KAS09		Na-Cl	2804,3
902	Geomod	KAS09		Na-Cl	2874,4
903	Geomod	KAS09		Na-Cl	3199,0
904	Geomod	KAS09		Na-Cl	3100,0
905	Geomod	KAS09		Na-Cl	2780,0
906	Geomod	KAS09		Na-Cl	3020,0
907	Geomod	KAS09		Na-Cl	2910,0
908	Geomod	KAS09		Na-Cl	3020,0
909	Geomod	KAS09		Na-Cl	2720,0
910	Geomod	KF0051A01		Na-Ca-Cl	4780,0
911	Geomod	KF0051A01		Na-Ca-Cl	5020,0
912	Geomod	KG0021A01		Na-Ca-Cl	3630,0
913	Geomod	KG0021A01		Na-Ca-Cl	3470,0
914	Geomod	KG0021A01		Na-Ca-Cl	3610,0
915	Geomod	KG0021A01		Na-Ca-Cl	3560,0
916	Geomod	KG0021A01		Na-Ca-Cl	3570,0
917	Geomod	KG0021A01		Na-Ca-Cl	3480,0
918	Geomod	KG0021A01		Na-Ca-Cl	3380,0
919	Geomod	KG0021A01		Na-Ca-Cl	3420,0
920	Geomod	KG0021A01		Na-Ca-Cl	3340,0
921	Geomod	KG0048A01		Na-Ca-Cl	3760,0
922	Geomod	KG0048A01		Na-Ca-Cl	3530,0
923	Geomod	KG0048A01		Na-Ca-Cl	3490,0
924	Geomod	KG0048A01		Na-Ca-Cl	3880,0
925	Geomod	KI0023B		Na-Ca-Cl	5060,0
926	Geomod	KI0023B		Na-Ca-Cl	5590,0
927	Geomod	KI0023B		Na-Ca-Cl	6130,0
928	Geomod	KI0023B		Na-Ca-Cl	5060,0
929	Geomod	KI0023B		Na-Ca-Cl	4140,0
930	Geomod	KI0023B		Na-Ca-Cl	5330,0
931	Geomod	KI0023B		Na-Ca-Cl	5750,0
932	Geomod	KI0023B		Na-Ca-Cl	4880,0
933	Geomod	KI0023B		Na-Ca-Cl	5830,0
934	Geomod	KI0023B		Na-Ca-Cl	5360,0
935	Geomod	KI0023B		Na-Ca-Cl	5570,0
936	Geomod	KI0023B		Na-Ca-Cl	4890,0
937	Geomod	KI0023B		Na-Ca-Cl	5060,0
938	Geomod	KI0023B		Na-Ca-Cl	4880,0
939	Geomod	KI0023B		Na-Ca-Cl	5360,0
940	Geomod	KI0023B		Na-Ca-Cl	5890,0
941	Geomod	KI0023B		Na-Ca-Cl	5660,0
942	Geomod	KI0023B		Na-Ca-Cl	5140,0
943	Geomod	KI0023B		Na-Ca-Cl	5530,0
944	Geomod	KI0023B		Na-Ca-Cl	5790,0
945	Geomod	KI0025F		Na-Ca-Cl	6669,9
946	Geomod	KI0025F		Na-Ca-Cl	6100,3
947	Geomod	KI0025F		Na-Ca-Cl	6050,0
948	Geomod	KI0025F		Na-Ca-Cl	6190,0
949	Geomod	KI0025F		Na-Ca-Cl	6200,0
950	Geomod	KI0025F		Na-Ca-Cl	5410,0
951	Geomod	KI0025F		Na-Ca-Cl	5380,0
952	Geomod	KI0025F		Na-Ca-Cl	6560,0
953	Geomod	KI0025F		Na-Ca-Cl	5270,0
954	Geomod	KI0025F		Na-Ca-Cl	6210,0
955	Geomod	KI0025F		Na-Ca-Cl	6220,0
956	Geomod	KI0025F		Na-Ca-Cl	4860,0
957	Geomod	KI0025F		Na-Ca-Cl	6240,0
958	Geomod	KI0025F02		Na-Ca-Cl	5640,0
959	Geomod	KI0025F02		Na-Ca-Cl	5680,0
960	Geomod	KI0025F02		Na-Ca-Cl	5540,0

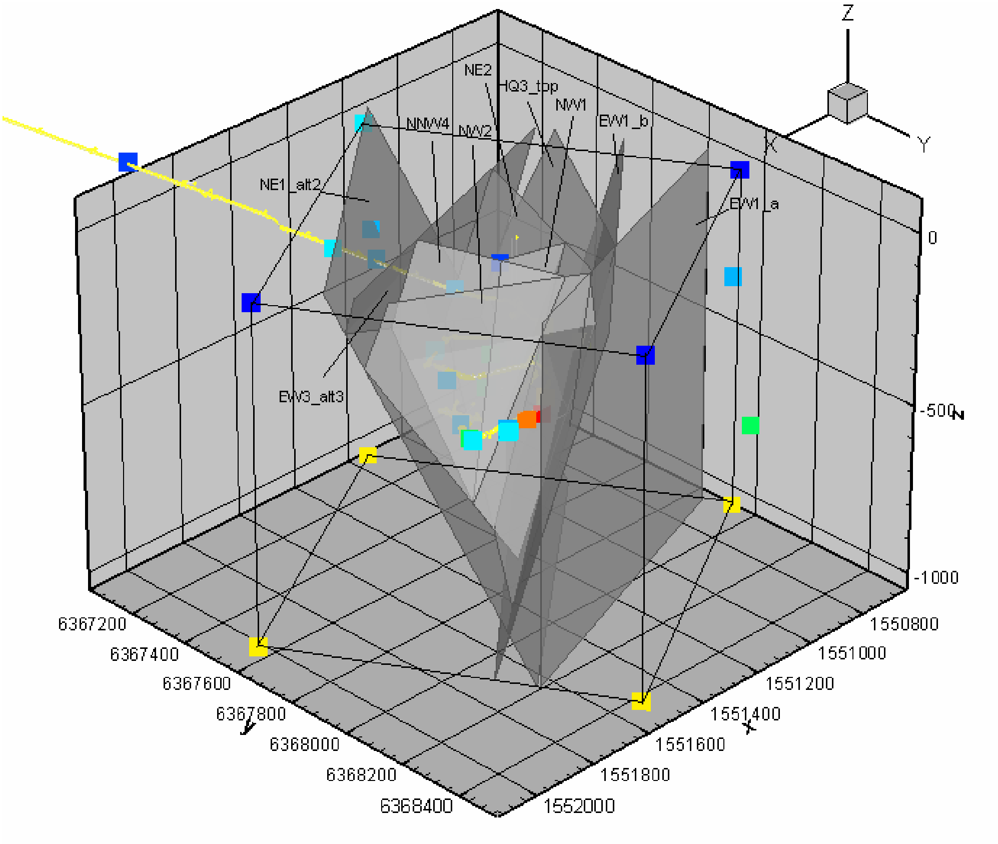
SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
961	Geomod	KI0025F02		Na-Ca-Cl	5310,0
962	Geomod	KI0025F02		Na-Ca-Cl	5990,0
963	Geomod	KI0025F02		Na-Ca-Cl	5400,0
964	Geomod	KI0025F02		Na-Ca-Cl	5570,0
965	Geomod	KI0025F02		Na-Ca-Cl	5560,0
966	Geomod	KI0025F02		Na-Ca-Cl	6110,0
967	Geomod	KI0025F02		Na-Ca-Cl	5870,0
968	Geomod	KI0025F02		Na-Ca-Cl	5410,0
969	Geomod	KI0025F02		Na-Ca-Cl	5570,0
970	Geomod	KI0025F03		Na-Ca-Cl	5690,0
971	Geomod	KI0025F03		Na-Ca-Cl	5990,0
972	Geomod	KI0025F03		Na-Ca-Cl	5990,0
973	Geomod	KI0025F03		Na-Ca-Cl	5540,0
974	Geomod	KJ0044F01		Ca-Na-Cl	7030,0
975	Geomod	KJ0050F01		Na-Ca-Cl	6580,0
976	Geomod	KJ0050F01		Na-Ca-Cl	7130,0
977	Geomod	KJ0052F01		Ca-Na-Cl	7230,0
978	Geomod	KJ0052F01		Ca-Na-Cl	7510,0
979	Geomod	KJ0052F02		Ca-Na-Cl	8130,0
980	Geomod	KJ0052F03		Na-Ca-Cl	6180,0
981	Geomod	KJ0052F03		Na-Ca-Cl	5750,0
982	Geomod	KJ0052F03		Na-Ca-Cl	5970,0
983	Geomod	KR0012B		Na-Ca-Cl-HCO3	608,4
984	Geomod	KR0012B		Na-Ca-Cl	642,4
985	Geomod	KR0012B		Na-Ca-Cl-HCO3	495,6
986	Geomod	KR0012B		Na-Ca-Cl	654,2
987	Geomod	KR0012B		Na-Ca-Cl	856,7
988	Geomod	KR0012B		Na-Ca-Cl	876,0
989	Geomod	KR0012B		Na-Cl	818,0
990	Geomod	KR0012B		Na-Cl	874,0
991	Geomod	KR0012B		Na-Ca-Cl	900,0
992	Geomod	KR0012B		Na-Cl	1040,0
993	Geomod	KR0012B		Na-Ca-Cl-HCO3	250,0
994	Geomod	KR0012B		Na-HCO3-Cl	168,0
995	Geomod	KR0013B		Na-Ca-Cl	1520,9
996	Geomod	KR0013B		Na-Ca-Cl	1458,9
997	Geomod	KR0013B		Na-Ca-Cl	1144,7
998	Geomod	KR0013B		Na-Ca-Cl	1060,6
999	Geomod	KR0013B		Na-Ca-Cl	947,0
1000	Geomod	KR0013B		Na-Ca-Cl	938,0
1001	Geomod	KR0013B		Na-Ca-Cl	840,0
1002	Geomod	KR0013B		Na-Ca-Cl	890,0
1003	Geomod	KR0013B		Na-Ca-Cl-HCO3	415,0
1004	Geomod	KR0013B		Na-Ca-HCO3-Cl	133,0
1005	Geomod	KR0015B		Na-Ca-Cl	977,1
1006	Geomod	KR0015B		Na-Ca-Cl	889,9
1007	Geomod	KR0015B		Na-Ca-Cl	726,1
1008	Geomod	KR0015B		Na-Ca-Cl	771,3
1009	Geomod	KR0015B		Na-Ca-Cl	733,5
1010	Geomod	KR0015B		Na-Ca-Cl-HCO3	668,0
1011	Geomod	KR0015B		Na-Ca-Cl-HCO3	628,0
1012	Geomod	KR0015B		Na-Ca-Cl-HCO3	643,0
1013	Geomod	KR0015B		Na-Ca-Cl-HCO3	560,0
1014	Geomod	KR0015B		Na-Ca-Cl-HCO3	560,0
1015	Geomod	KR0015B		Na-Ca-Cl-HCO3	440,0
1016	Geomod	KR0015B		Na-Ca-HCO3-Cl	220,0
1017	Geomod	KXTT1		Na-Ca-Cl	5084,0
1018	Geomod	KXTT1		Na-Ca-Cl	3110,0
1019	Geomod	KXTT2		Na-Ca-Cl	4389,1
1020	Geomod	KXTT2		Na-Ca-Cl	5119,4
1021	Geomod	KXTT2		Na-Ca-Cl	3260,0
1022	Geomod	KXTT3		Na-Ca-Cl	5091,1
1023	Geomod	KXTT3		Na-Ca-Cl	4296,9
1024	Geomod	KXTT3		Ca-Na-Cl	6094,2

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
1025	Geomod	KXTT3		Na-Ca-Cl	5960,0
1026	Geomod	KXTT3		Na-Ca-Cl	5150,0
1027	Geomod	KXTT3		Na-Ca-Cl	4490,0
1028	Geomod	KXTT3		Na-Ca-Cl	4240,0
1029	Geomod	KXTT3		Na-Ca-Cl	4020,0
1030	Geomod	KXTT3		Na-Ca-Cl	4210,0
1031	Geomod	KXTT3		Na-Ca-Cl	3910,0
1032	Geomod	KXTT3		Na-Ca-Cl	3570,0
1033	Geomod	KXTT3		Na-Ca-Cl	3070,0
1034	Geomod	KXTT4		Na-Ca-Cl	4920,9
1035	Geomod	KXTT4		Na-Ca-Cl	5013,1
1036	Geomod	KXTT4		Na-Ca-Cl	2910,0
1037	Geomod	KXTT4		Na-Ca-Cl	3060,0
1038	Geomod	KXTT4		Na-Ca-Cl	2910,0
1039	Geomod	KXTT5		Na-Ca-Cl	2670,0
1040	Geomod	KZ0027A		Na-Ca-Cl	4500,0
1041	Geomod	KZ0027A		Na-Ca-Cl	4800,0
1042	Geomod	KZ0027A		Na-Ca-Cl	4690,0
1043	Geomod	KZ0027A		Na-Ca-Cl	4700,0
1044	Geomod	SA1229A		Na-Ca-Cl	3674,7
1045	Geomod	SA1229A		Na-Ca-Cl	3481,5
1046	Geomod	SA1229A		Na-Cl	3392,8
1047	Geomod	SA1229A		Na-Cl	3136,8
1048	Geomod	SA1229A		Na-Cl	3650,0
1049	Geomod	SA1229A		Na-Cl	2950,0
1050	Geomod	SA1229A		Na-Cl	2980,0
1051	Geomod	SA1229A		Na-Cl	3010,0
1052	Geomod	SA1229A		Na-Cl	3120,0
1053	Geomod	SA1229A		Na-Cl	2860,0
1054	Geomod	SA1229A		Na-Cl	2850,0
1055	Geomod	SA1420A		Na-Cl	2721,0
1056	Geomod	SA1420A		Na-Cl	2676,7
1057	Geomod	SA1420A		Na-Cl	2507,8
1058	Geomod	SA1420A		Na-Cl	2972,5
1059	Geomod	SA1420A		Na-Cl	3050,0
1060	Geomod	SA1420A		Na-Cl	2530,0
1061	Geomod	SA1420A		Na-Cl	2690,0
1062	Geomod	SA1420A		Na-Cl	2720,0
1063	Geomod	SA1420A		Na-Cl	2860,0
1064	Geomod	SA1730A		Ca-Na-Cl	8671,8
1065	Geomod	SA1730A		Ca-Na-Cl	8561,9
1066	Geomod	SA1730A		Ca-Na-Cl	8054,9
1067	Geomod	SA1730A		Ca-Na-Cl	9455,9
1068	Geomod	SA1730A		Ca-Na-Cl	10002,7
1069	Geomod	SA1730A		Ca-Na-Cl	10600,0
1070	Geomod	SA1730A		Ca-Na-Cl	10730,0
1071	Geomod	SA1730A		Ca-Na-Cl	11100,0
1072	Geomod	SA1730A		Ca-Na-Cl	11480,0
1073	Geomod	SA1730A		Ca-Na-Cl	12450,0
1074	Geomod	SA1730A		Ca-Na-Cl	12470,0
1075	Geomod	SA2074A		Na-Ca-Cl	3414,1
1076	Geomod	SA2074A		Na-Ca-Cl	3238,6
1077	Geomod	SA2074A		Na-Ca-Cl	3290,0
1078	Geomod	SA2074A		Na-Ca-Cl	2983,0
1079	Geomod	SA2074A		Na-Ca-Cl	2838,8
1080	Geomod	SA2074A		Na-Ca-Cl	2950,0
1081	Geomod	SA2074A		Na-Ca-Cl	2670,0
1082	Geomod	SA2074A		Na-Ca-Cl	2630,0
1083	Geomod	SA2074A		Na-Ca-Cl	2510,0
1084	Geomod	SA2074A		Na-Ca-Cl	2770,0
1085	Geomod	SA2074A		Na-Ca-Cl	2520,0
1086	Geomod	SA2273A		Na-Ca-Cl	4787,9
1087	Geomod	SA2273A		Na-Ca-Cl	4346,5
1088	Geomod	SA2273A		Na-Ca-Cl	4530,9

SampleID	Site	Borehole	depth (z)	water type	Cl (mg/l)
1089	Geomod	SA2273A		Na-Ca-Cl	4239,4
1090	Geomod	SA2273A		Na-Ca-Cl	4141,0
1091	Geomod	SA2273A		Na-Ca-Cl	4020,0
1092	Geomod	SA2273A		Na-Ca-Cl	3830,0
1093	Geomod	SA2273A		Na-Ca-Cl	3930,0
1094	Geomod	SA2273A		Na-Ca-Cl	3820,0
1095	Geomod	SA2273A		Na-Ca-Cl	3770,0
1096	Geomod	SA2273A		Na-Ca-Cl	3640,0
1097	Geomod	SA2600A		Na-Ca-Cl	6023,5
1098	Geomod	SA2600A		Na-Ca-Cl	6183,0
1099	Geomod	SA2600A		Na-Ca-Cl	5920,6
1100	Geomod	SA2600A		Na-Ca-Cl	5723,1
1101	Geomod	SA2600A		Na-Ca-Cl	5602,8
1102	Geomod	SA2600A		Na-Ca-Cl	5894,8
1103	Geomod	SA2600A		Na-Ca-Cl	6420,0
1104	Geomod	SA2600A		Na-Ca-Cl	5910,0
1105	Geomod	SA2600A		Na-Ca-Cl	6000,0
1106	Geomod	SA2600A		Na-Ca-Cl	6550,0
1107	Geomod	SA2600A		Na-Ca-Cl	7080,0
1108	Geomod	SA2783A		Ca-Na-Cl	10944,3
1109	Geomod	SA2783A		Ca-Na-Cl	10910,7
1110	Geomod	SA2783A		Ca-Na-Cl	12054,0
1111	Geomod	SA2783A		Ca-Na-Cl	13273,9
1112	Geomod	SA2783A		Ca-Na-Cl	13200,0
1113	Geomod	SA2783A		Ca-Na-Cl	13300,0
1114	Geomod	SA2783A		Ca-Na-Cl	13140,0
1115	Geomod	SA2783A		Ca-Na-Cl	13970,0
1116	Geomod	SA2783A		Ca-Na-Cl	13920,0
1117	Geomod	SA2880A		Ca-Na-Cl	11371,5
1118	Geomod	SA2880A		Ca-Na-Cl	12956,3
1119	Geomod	SA2880A		Ca-Na-Cl	13011,6
1120	Geomod	SA2880A		Ca-Na-Cl	13524,0
1121	Geomod	SA2880A		Ca-Na-Cl	12500,0
1122	Geomod	SA2880A		Ca-Na-Cl	12300,0
1123	Geomod	SA2880A		Ca-Na-Cl	12930,0
1124	Geomod	SA2880A		Ca-Na-Cl	12430,0
1125	Geomod	SA2880A		Ca-Na-Cl	14500,0
1126	Geomod	SA3045A		Ca-Na-Cl	6856,6
1127	Geomod	SA3045A		Ca-Na-Cl	8765,9
1128	Geomod	SA3045A		Ca-Na-Cl	8114,9
1129	Geomod	SA3045A		Ca-Na-Cl	8630,0
1130	Geomod	SA3045A		Ca-Na-Cl	7860,0
1131	Geomod	SA3045A		Ca-Na-Cl	8130,0
1132	Geomod	SA3045A		Ca-Na-Cl	7900,0
1133	Geomod	SA3045A		Na-Ca-Cl	4970,0
1134	Geomod	SA3045A		Na-Ca-Cl	6610,0
1135	Geomod	HA1330B		Na-Cl	2960,0
1136	Geomod	HA2780A		Ca-Na-Cl	12800,0
1137	Geomod	HD0025A		Na-Ca-Cl	6420,0
1138	Geomod	HD0025A		Na-Ca-Cl	5530,0
1139	Geomod	HD0025A		Na-Ca-Cl	4590,0
1140	Geomod	HD0025A		Na-Cl	2540,0
1141	Geomod	HG0038B01		Na-Ca-Cl	6940,0

Appendix 3: Visualisation of the sampling points and cloride content in realtion to the major fracture zones

Cl_2000



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NNW4
NW2
NE1_alt2
EW1_a
EW3_alt3
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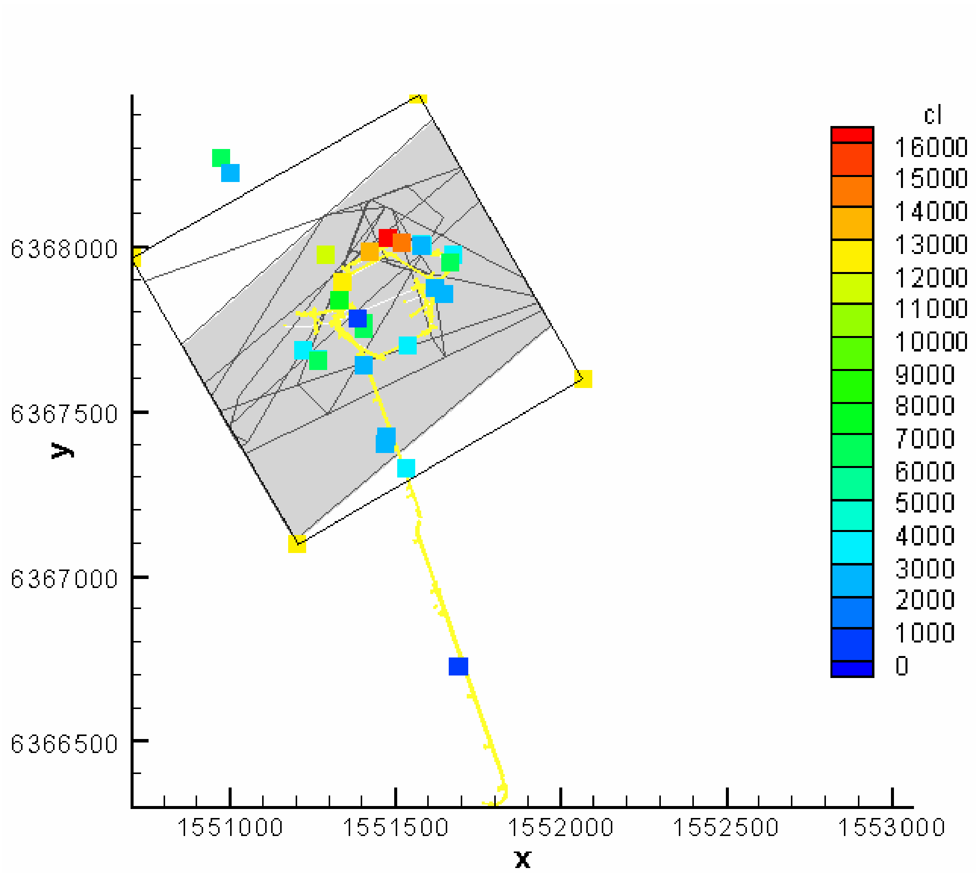

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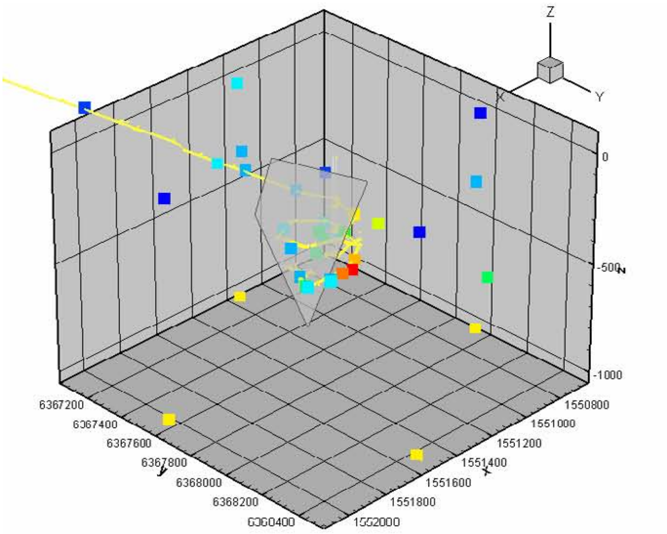
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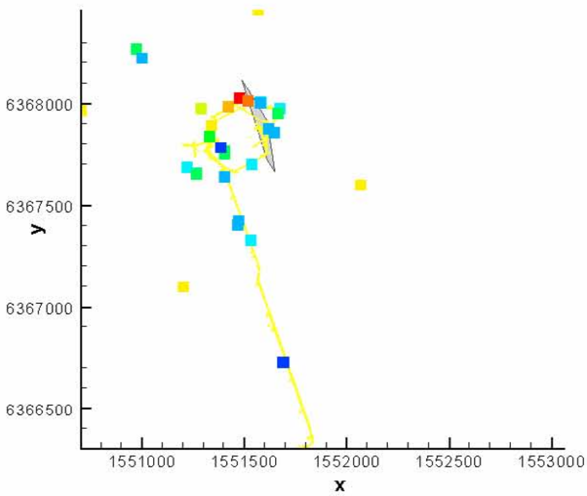
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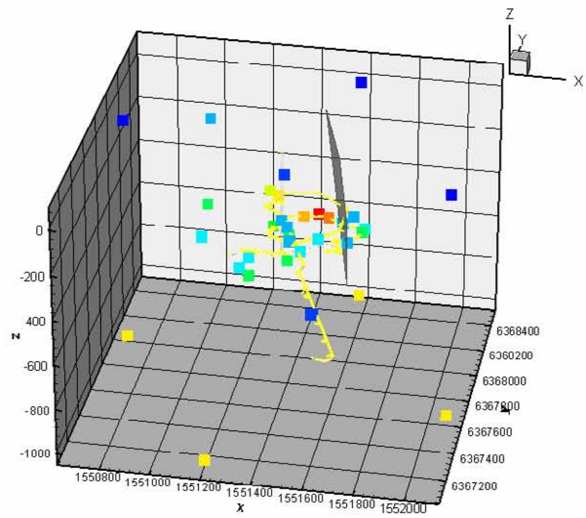
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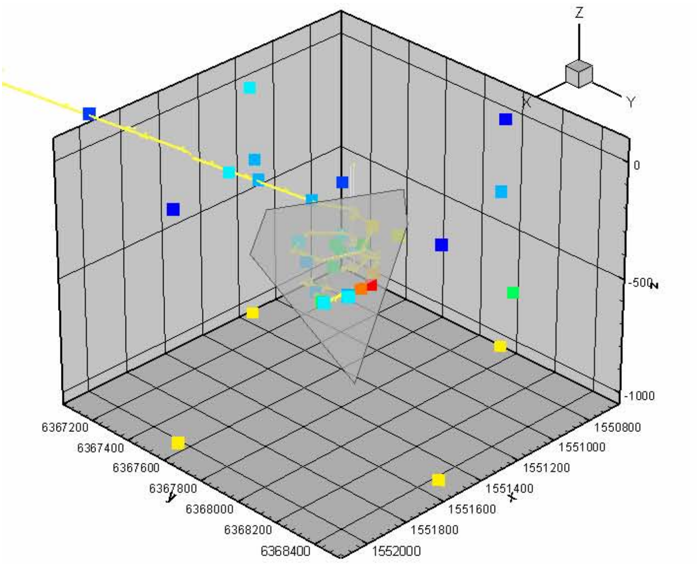
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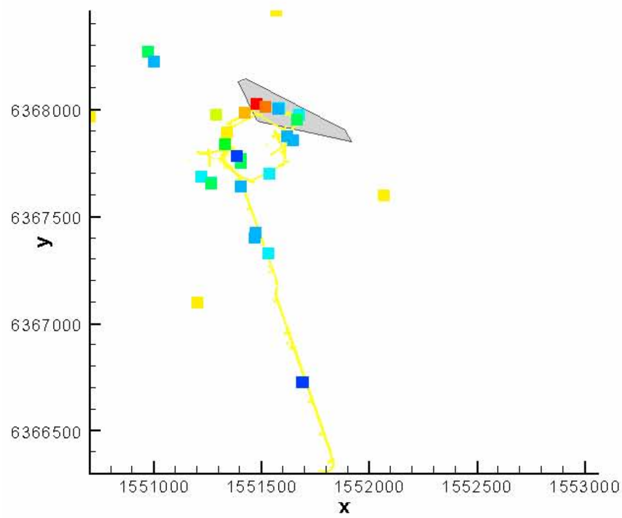
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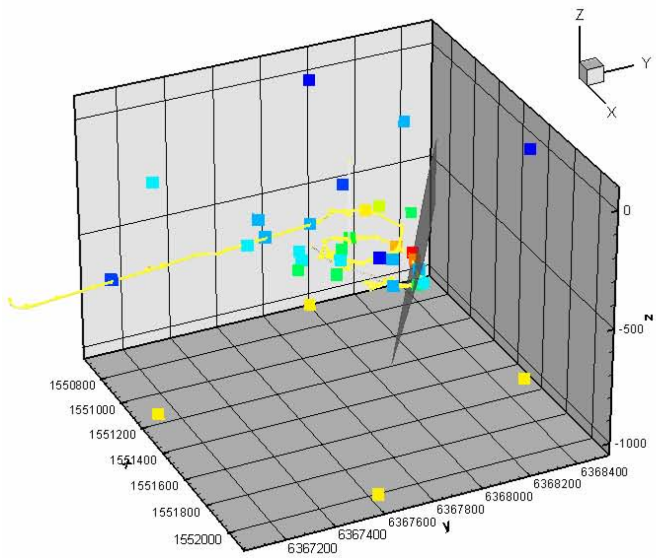
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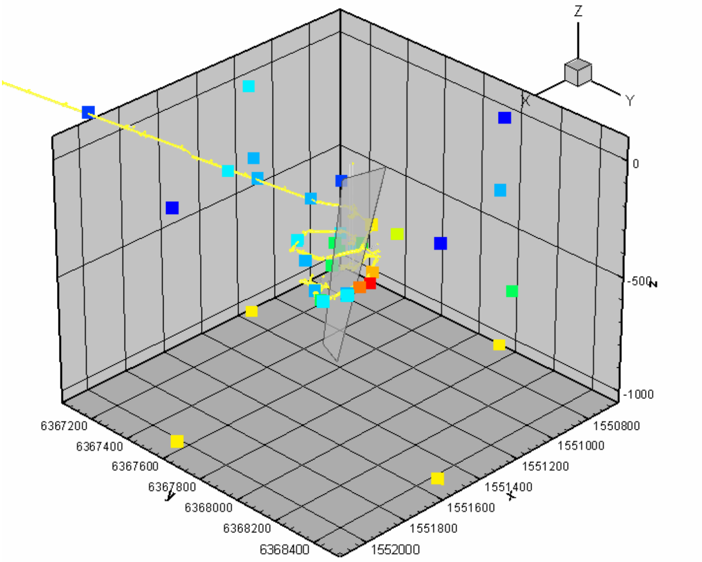
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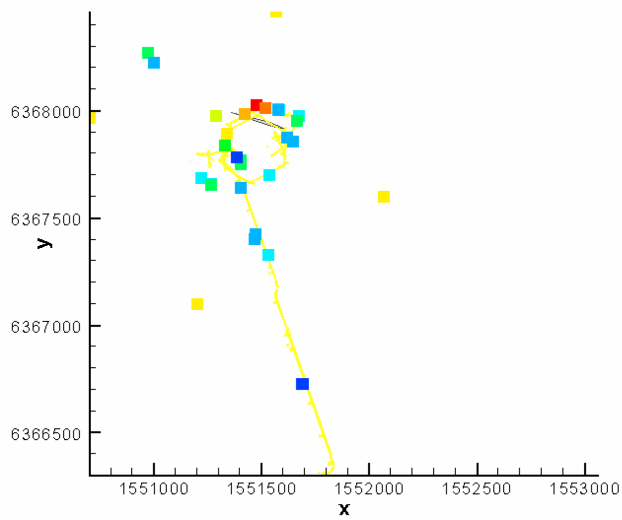
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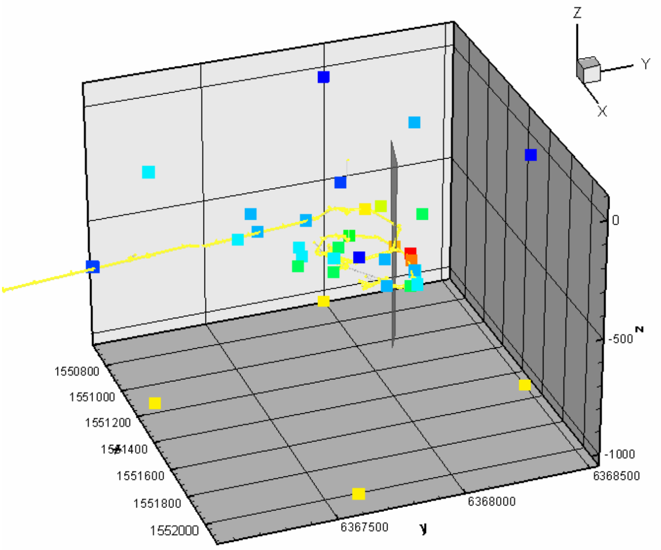
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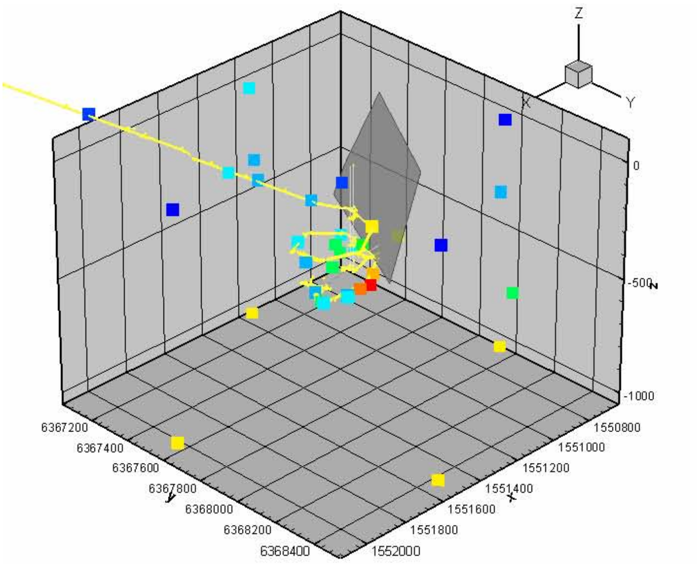
HQ3_top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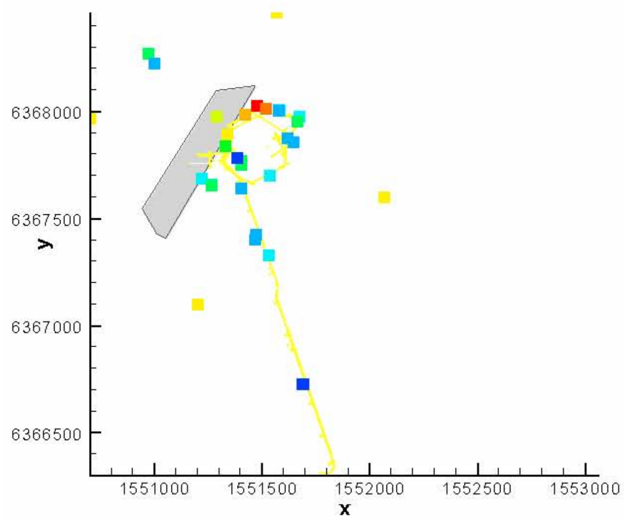
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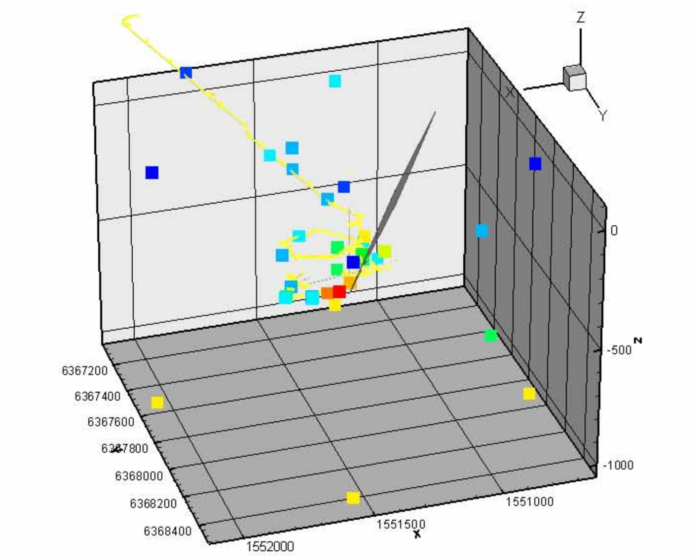
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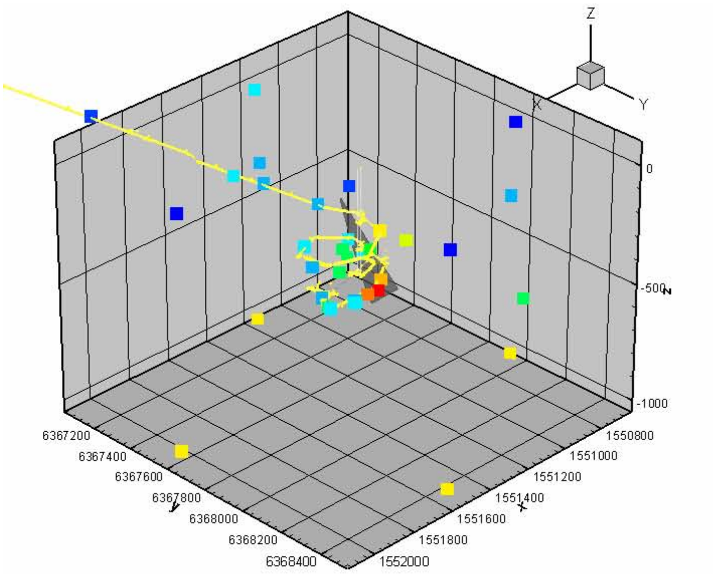
HQ3_bottom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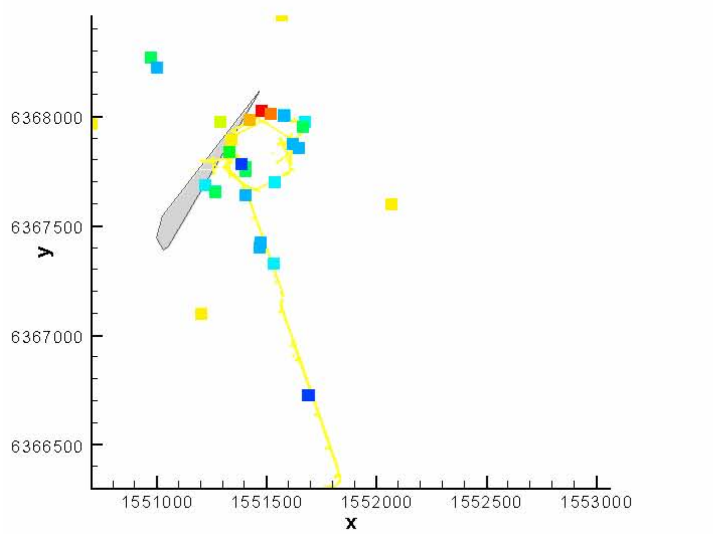
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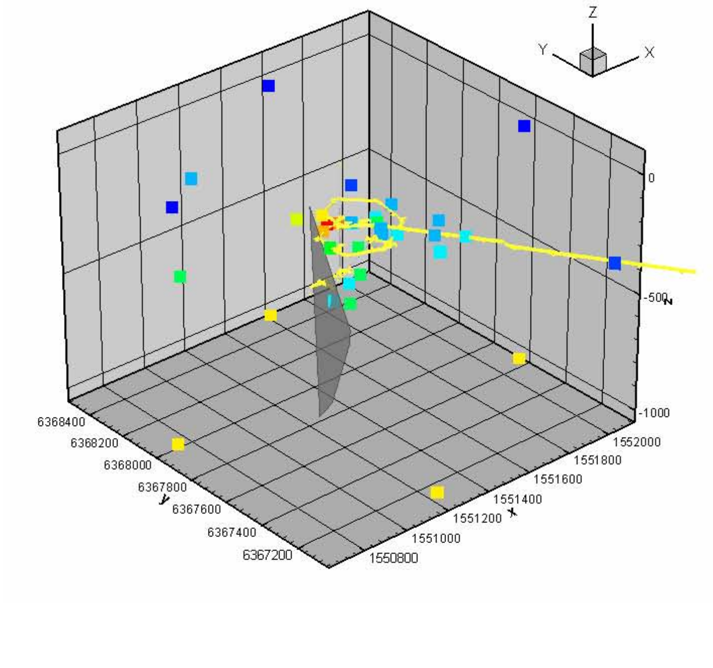
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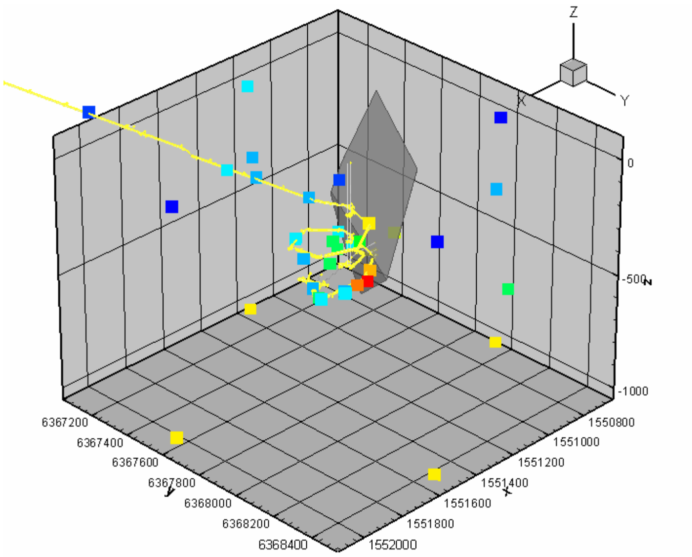
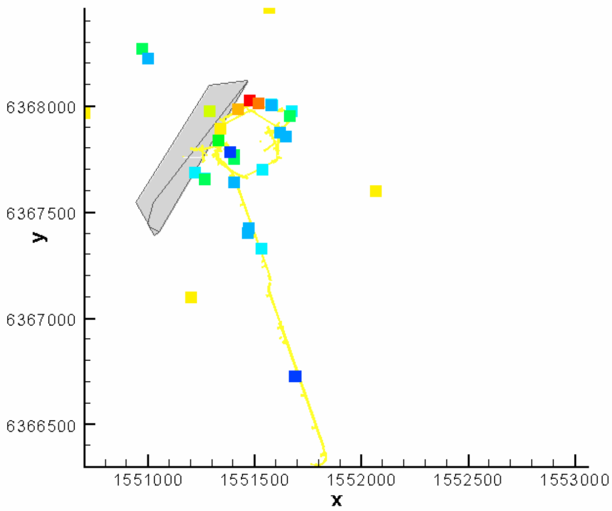
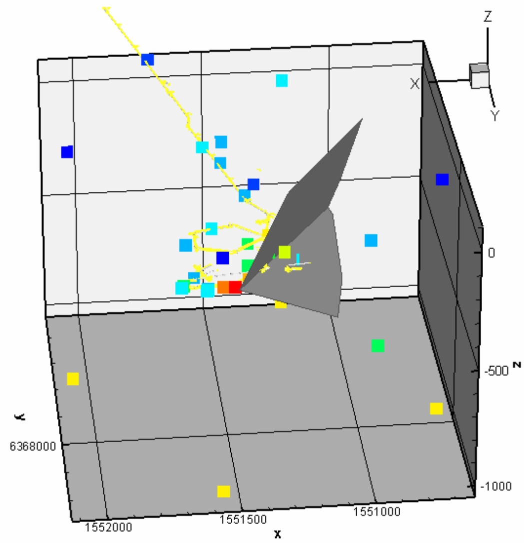
HQ3_top and bottom







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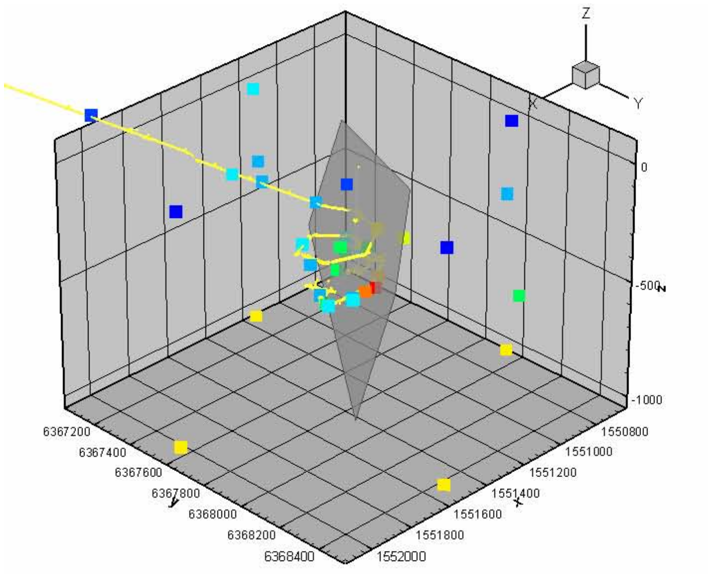
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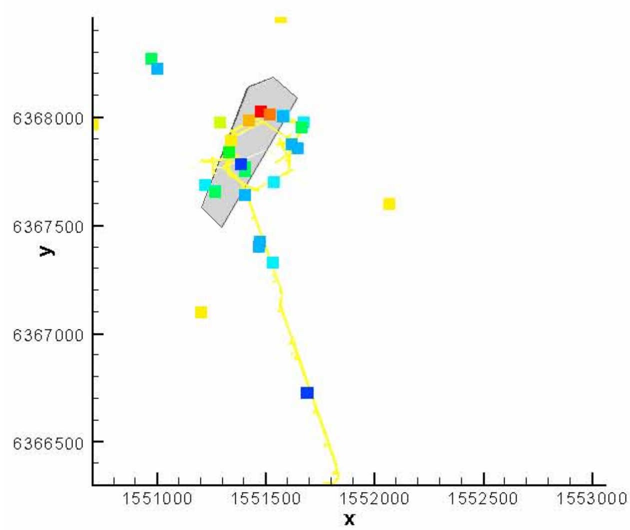
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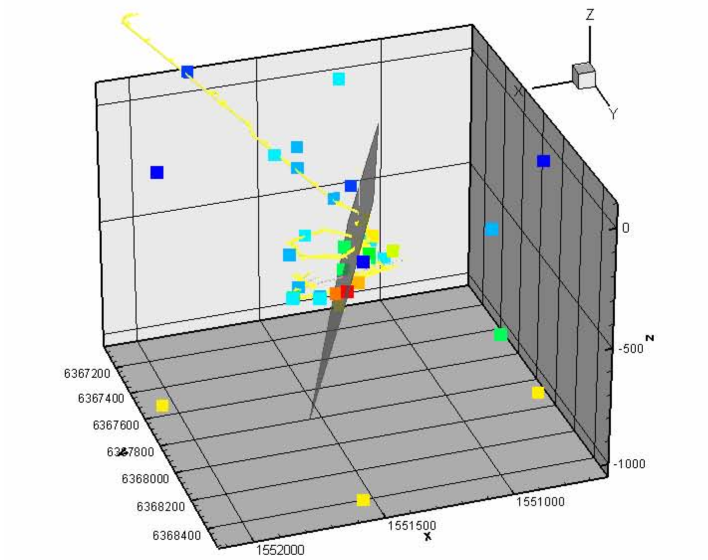
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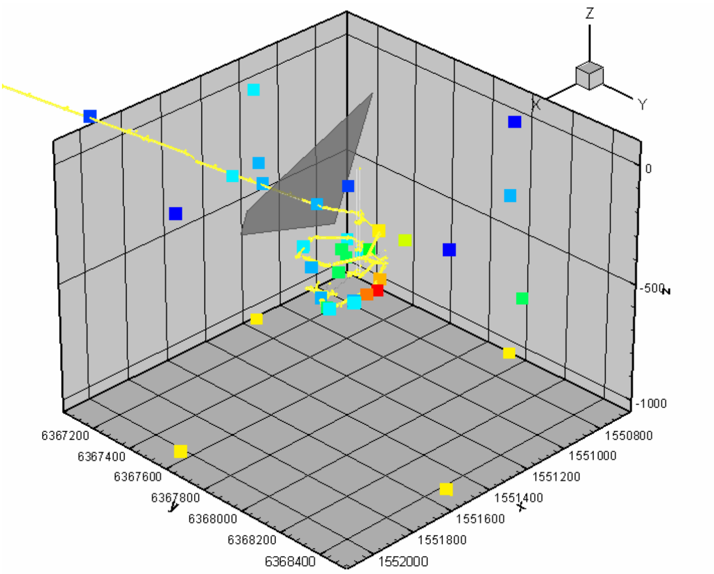
EW3_alt3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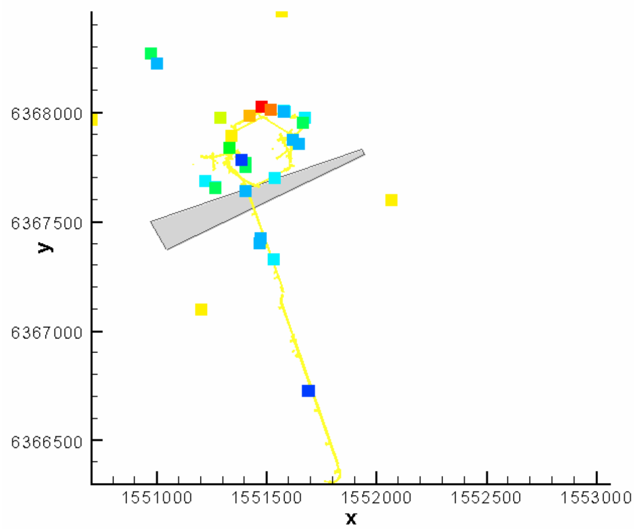
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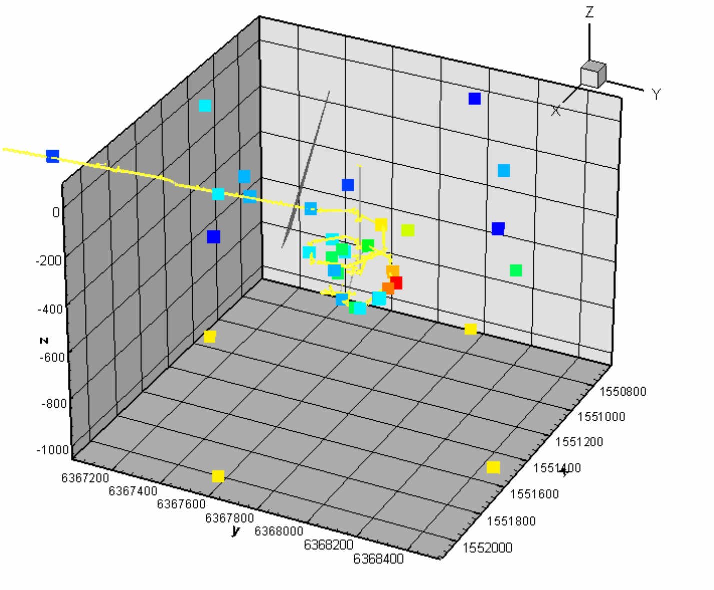
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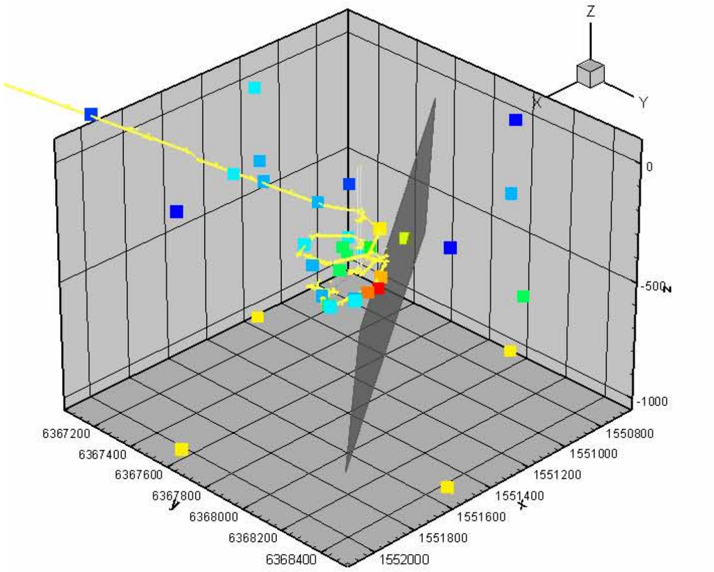
EW1_b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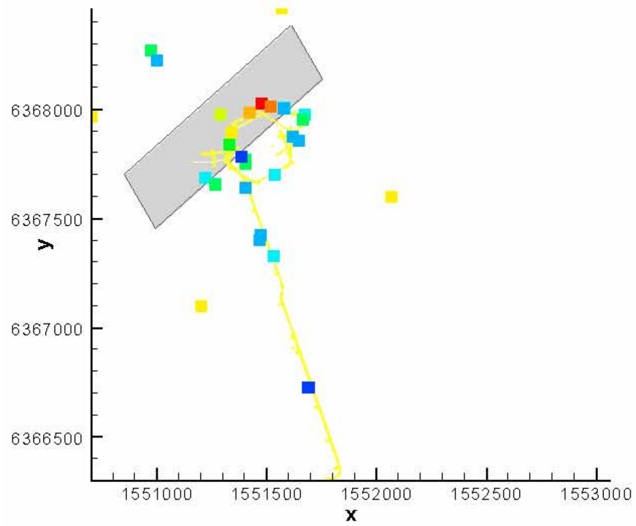
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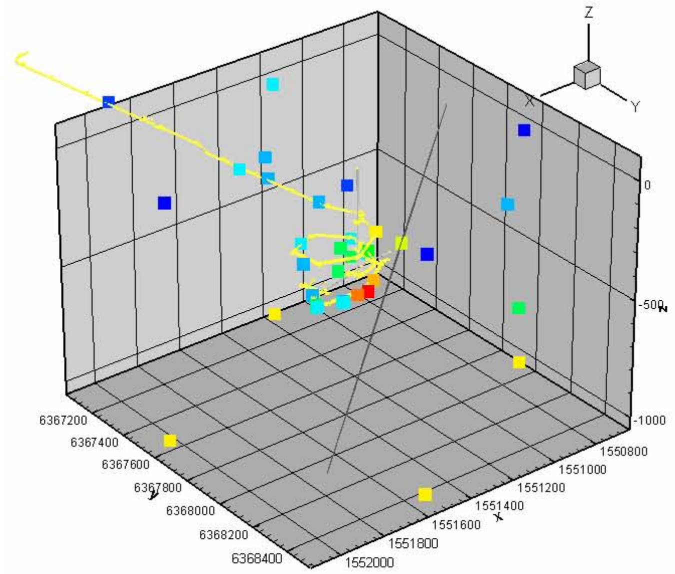
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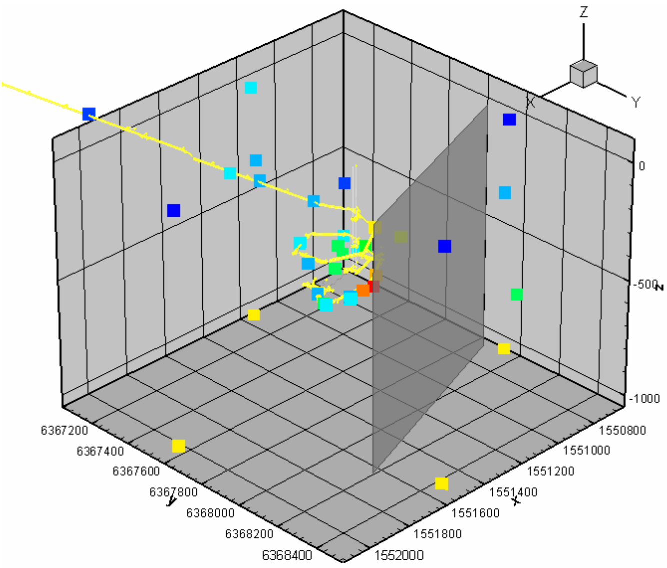
EW1_a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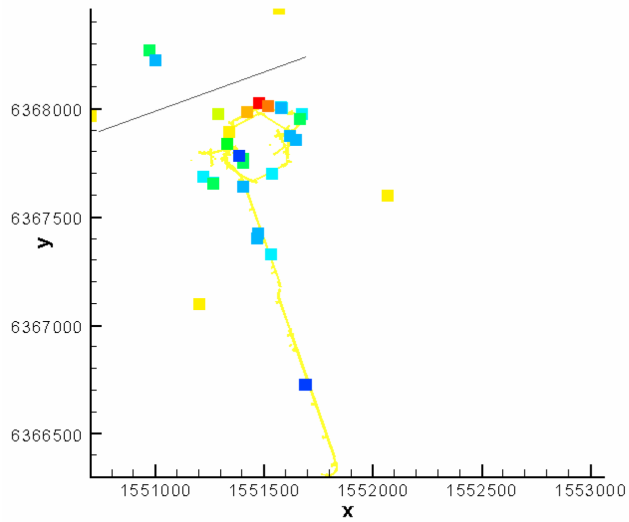
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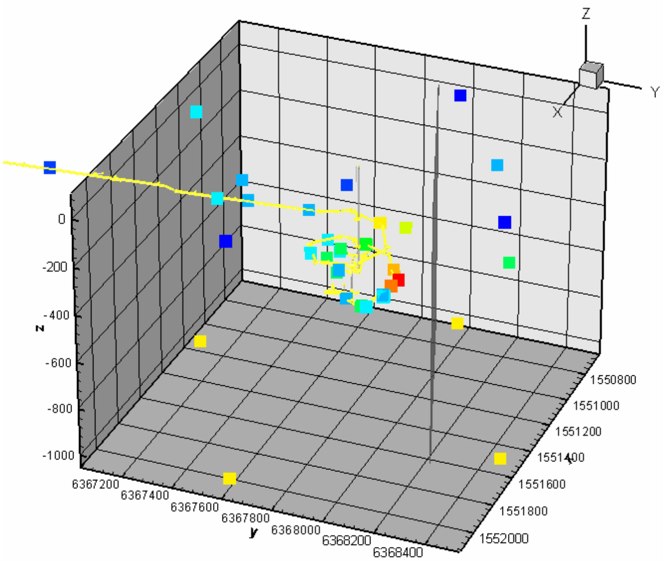
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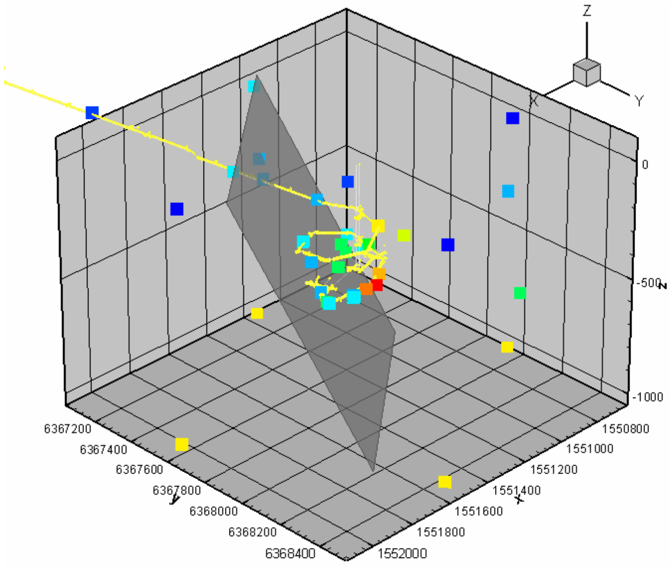
NE1_alt2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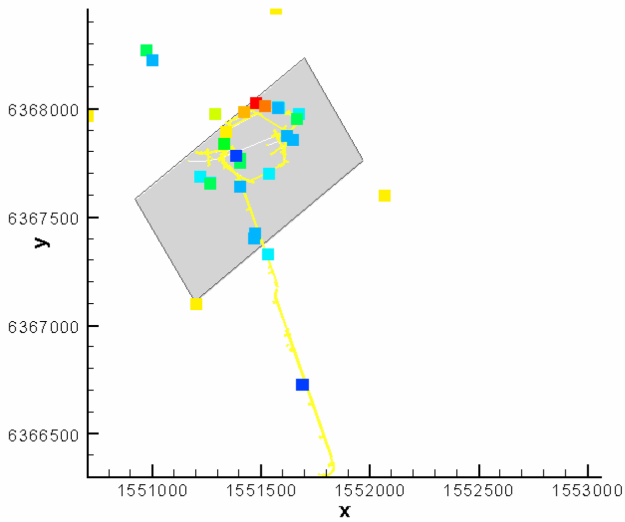
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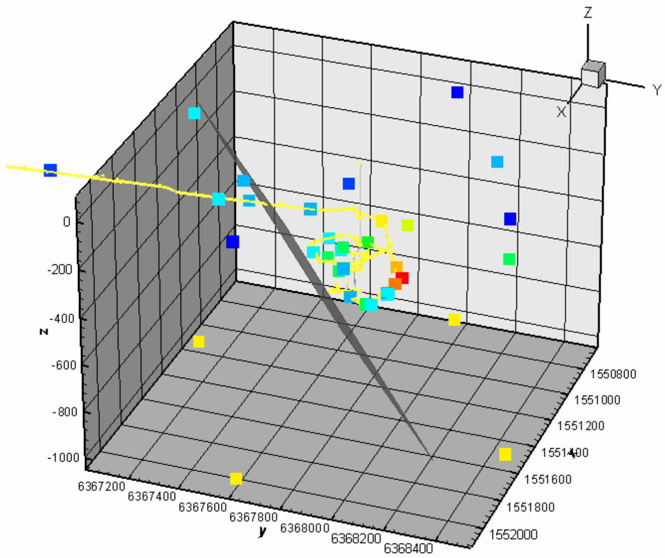
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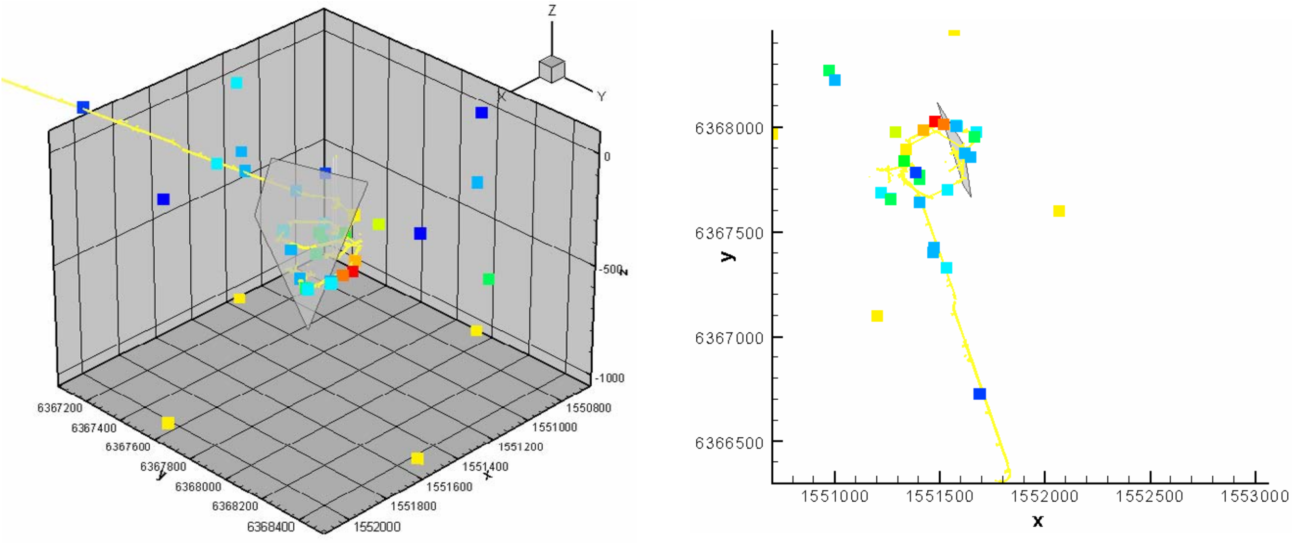
NNW4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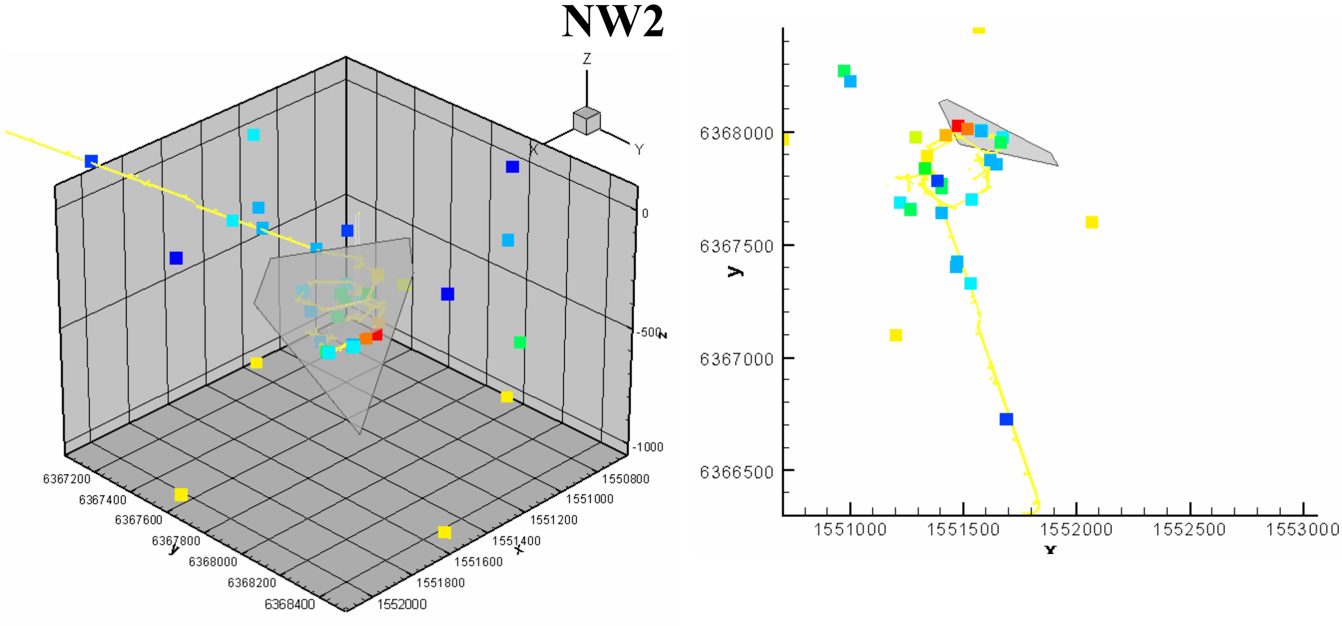
NW2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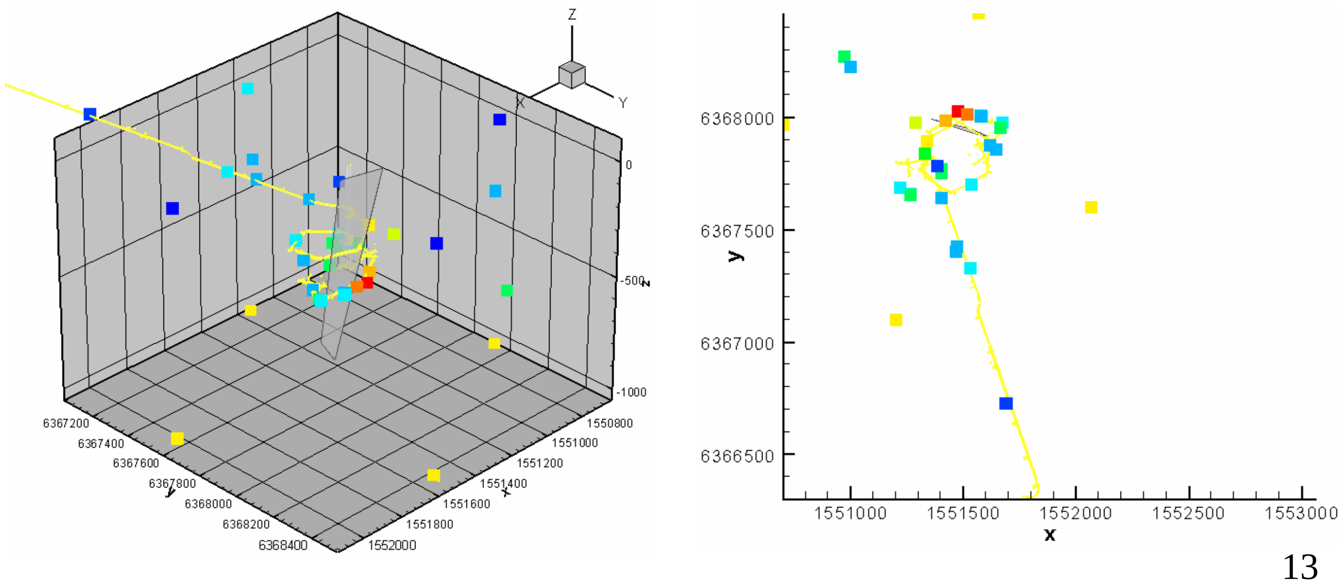
NW1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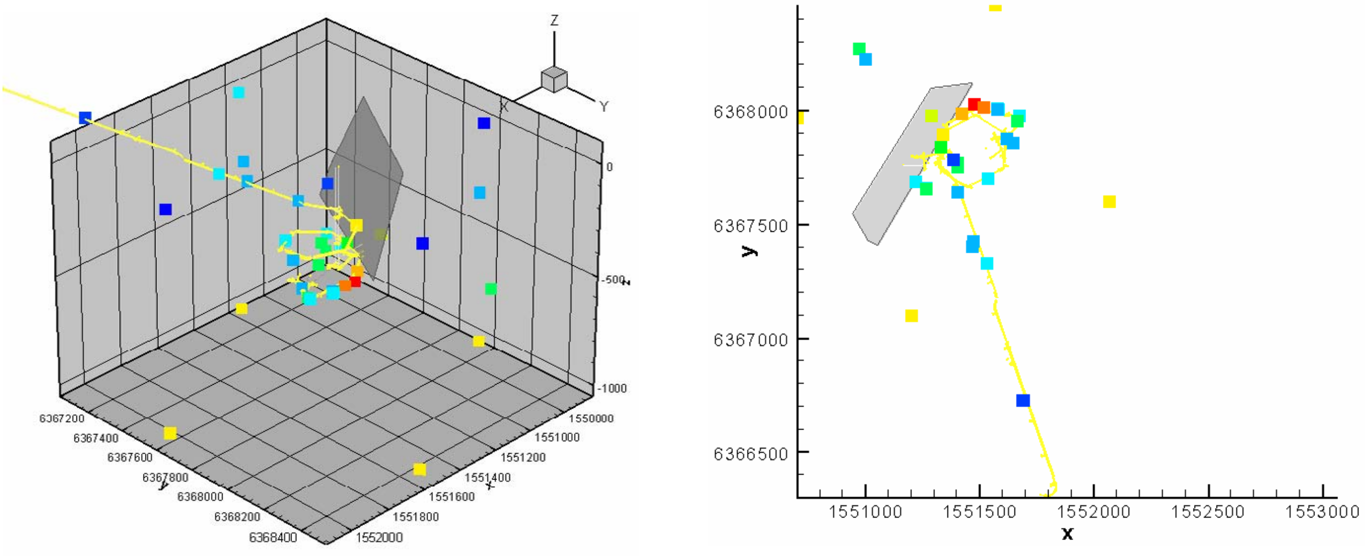
HQ3_top



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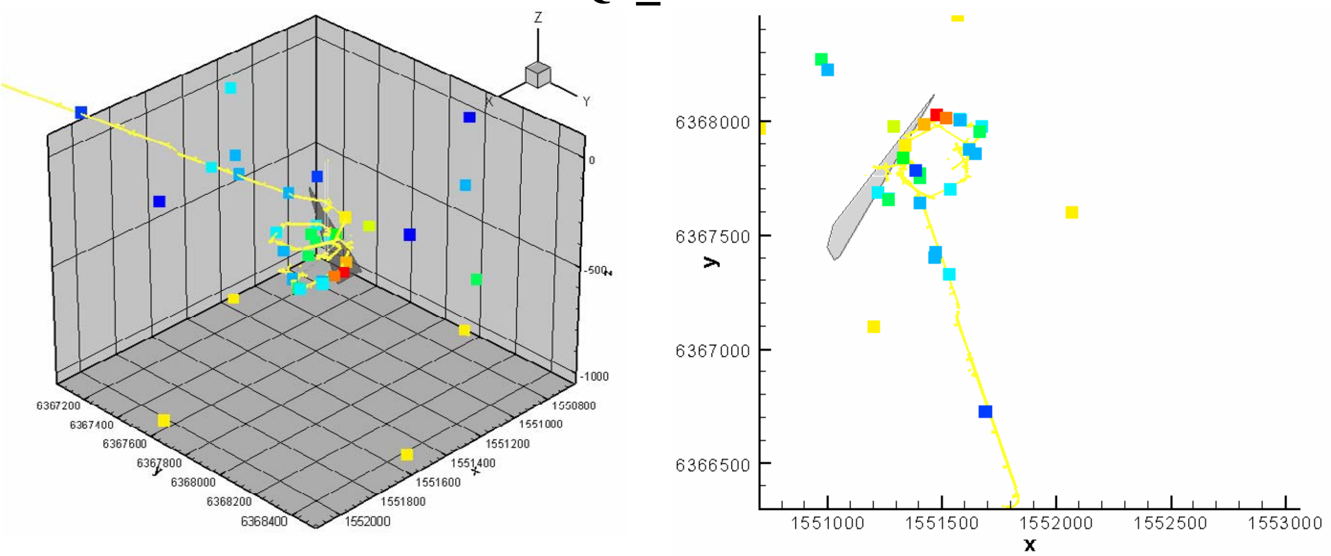
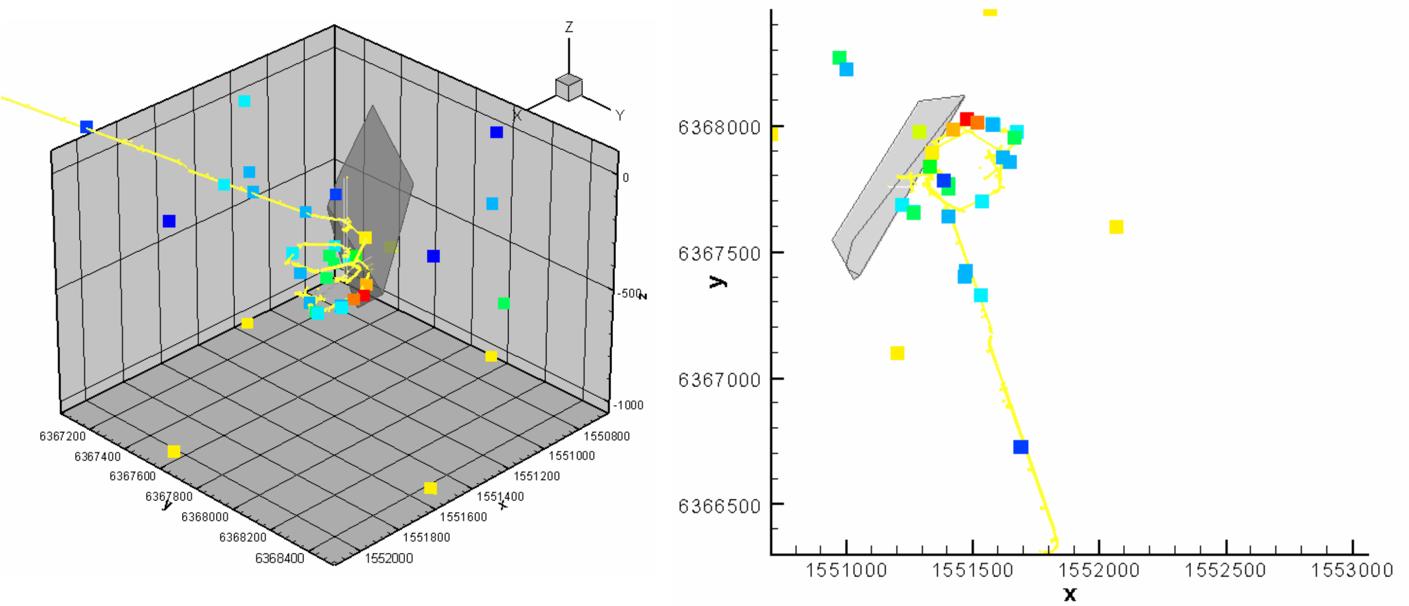


HQ3_top and bottom



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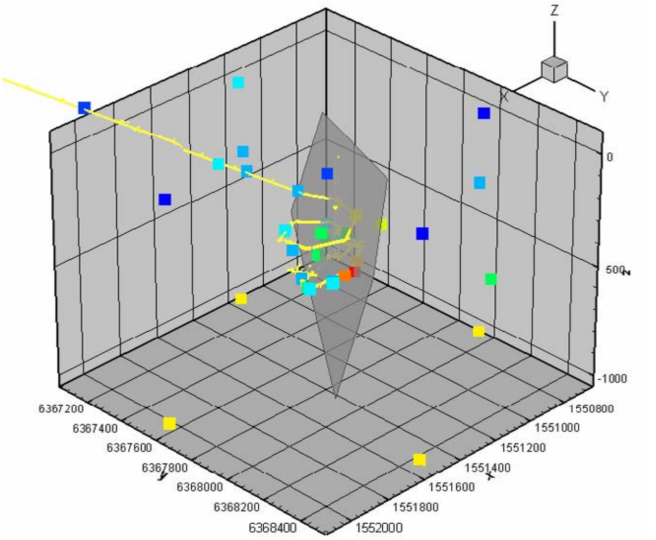

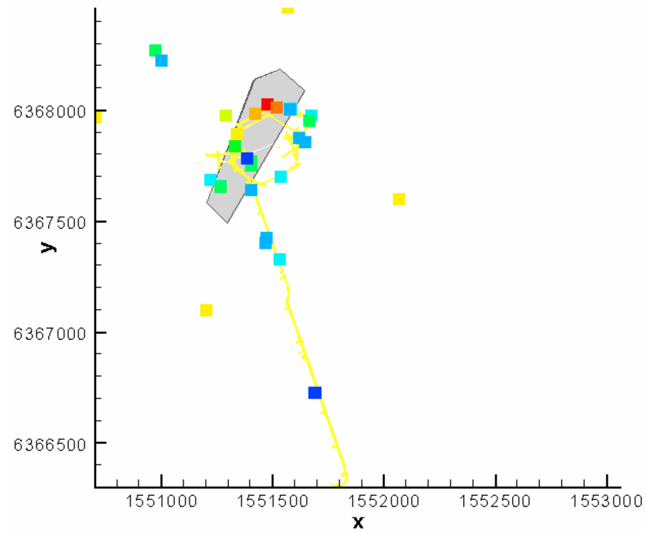

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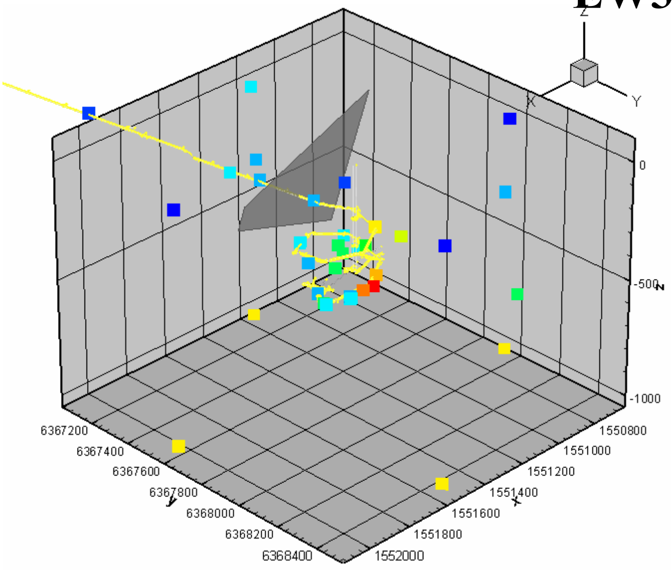
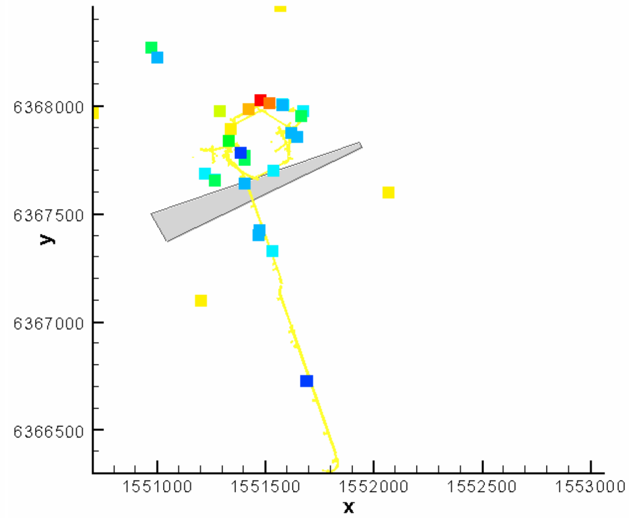
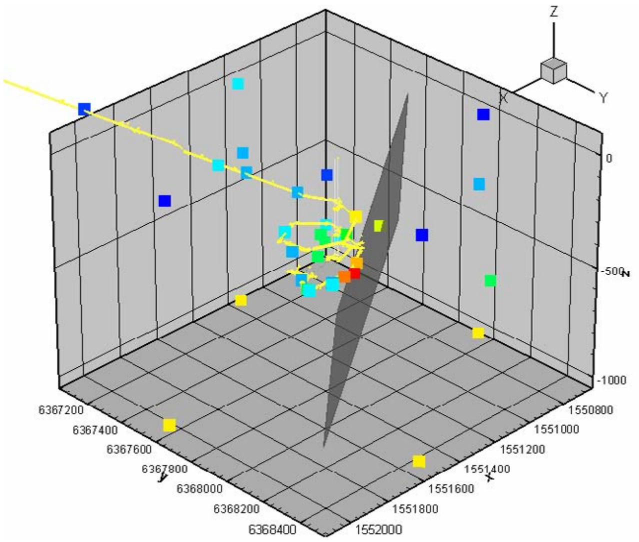
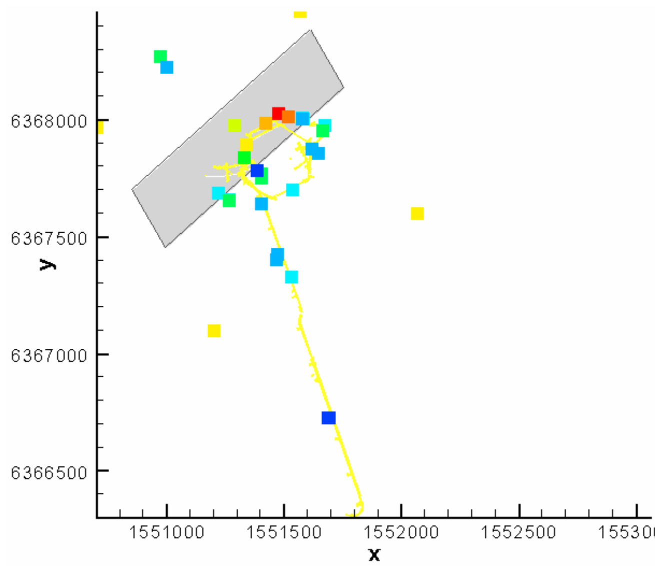


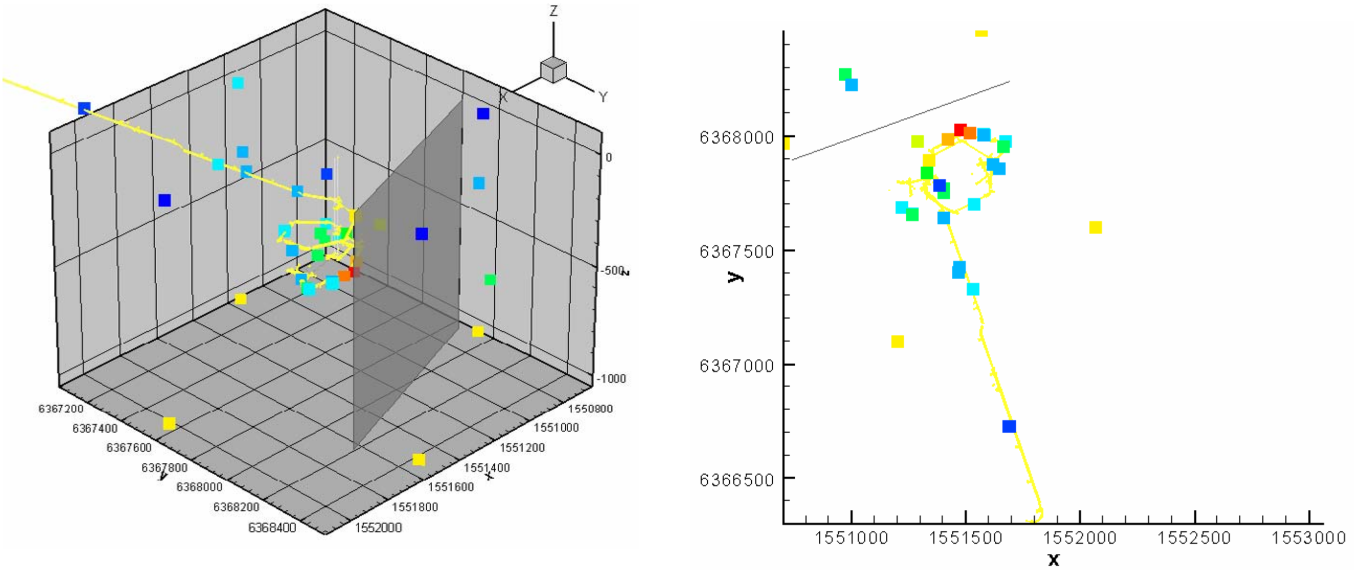


EW1_b

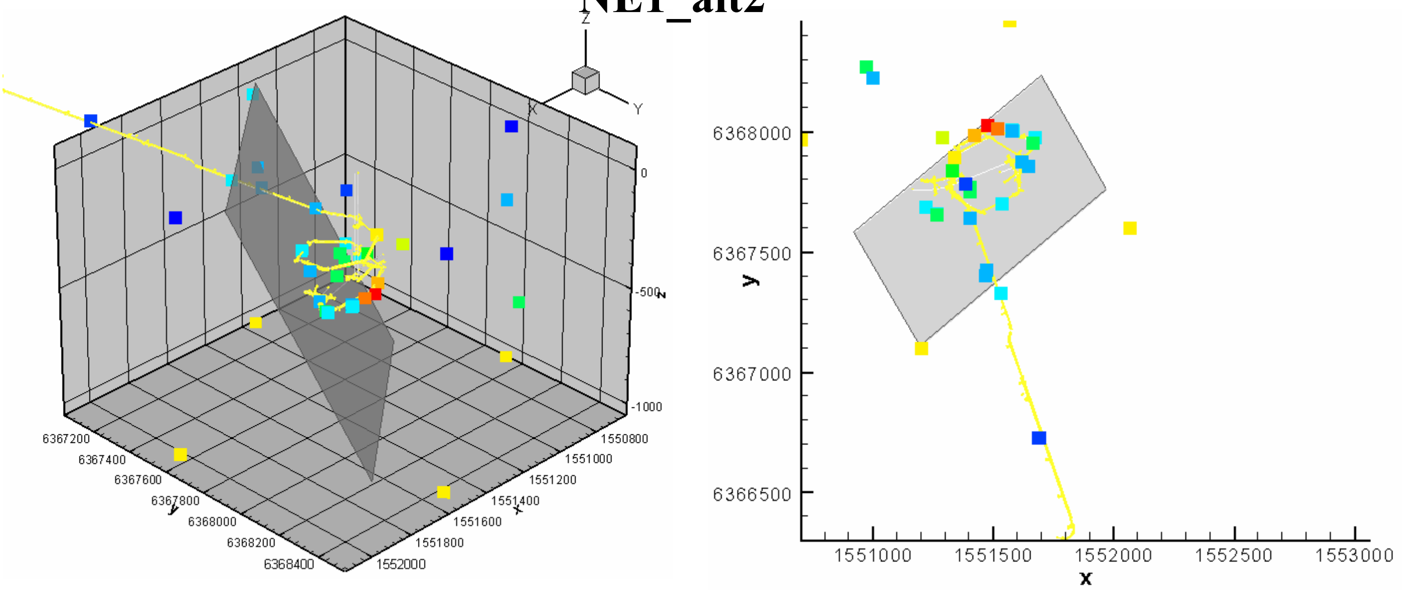




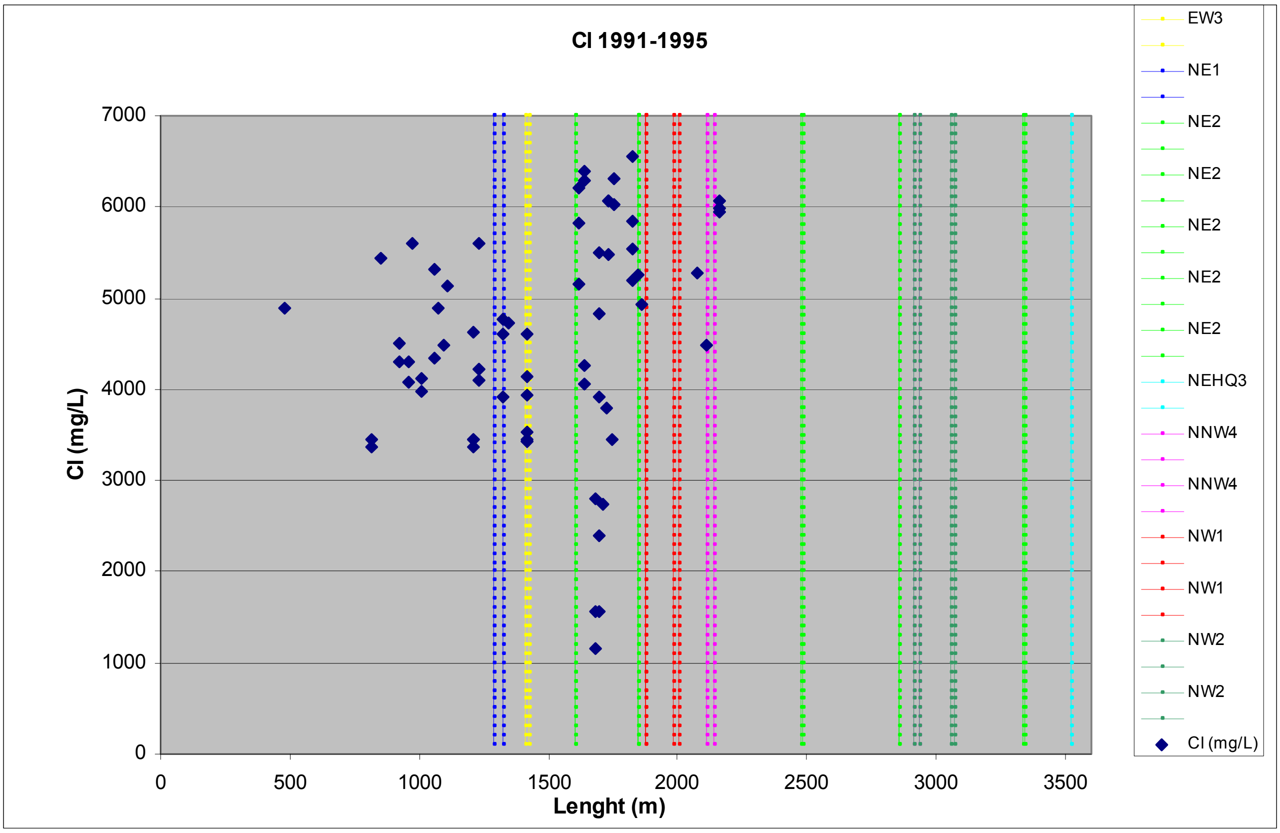
EW1_a

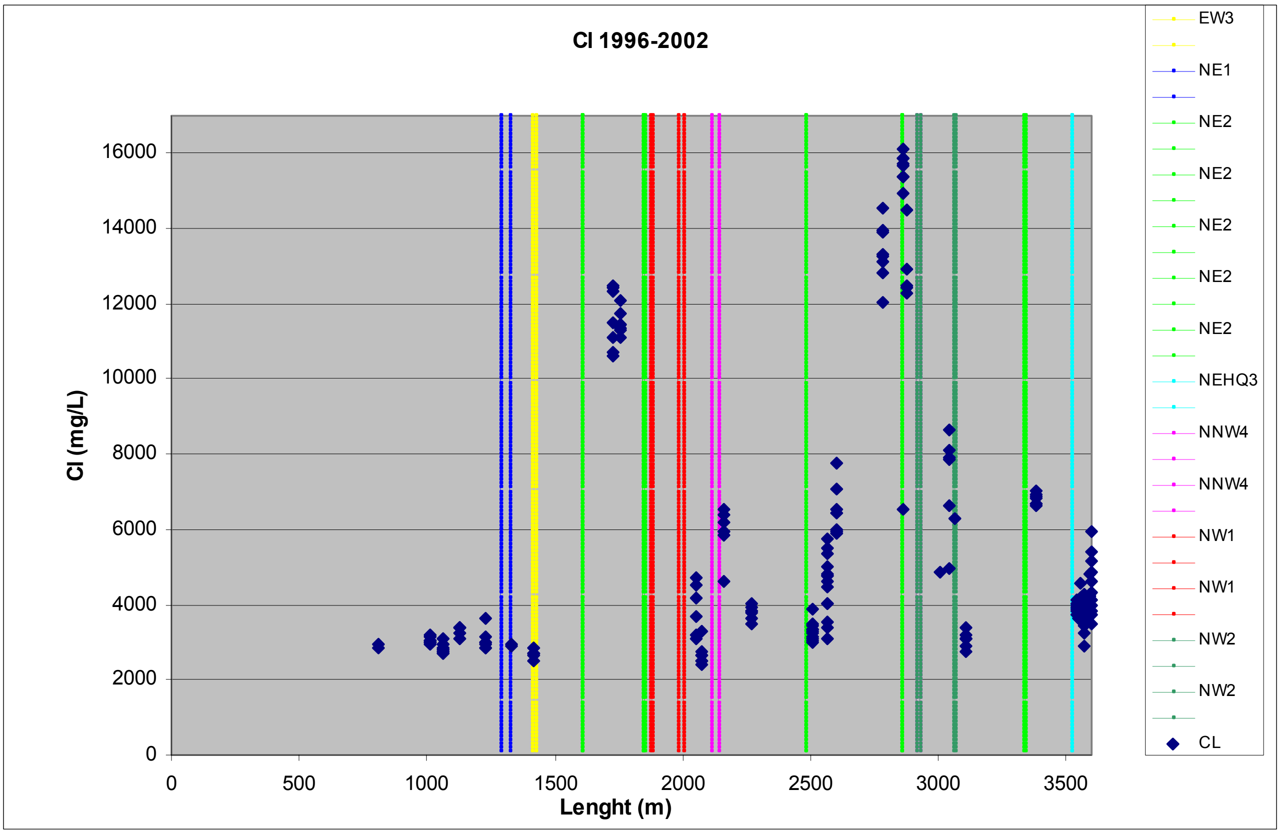


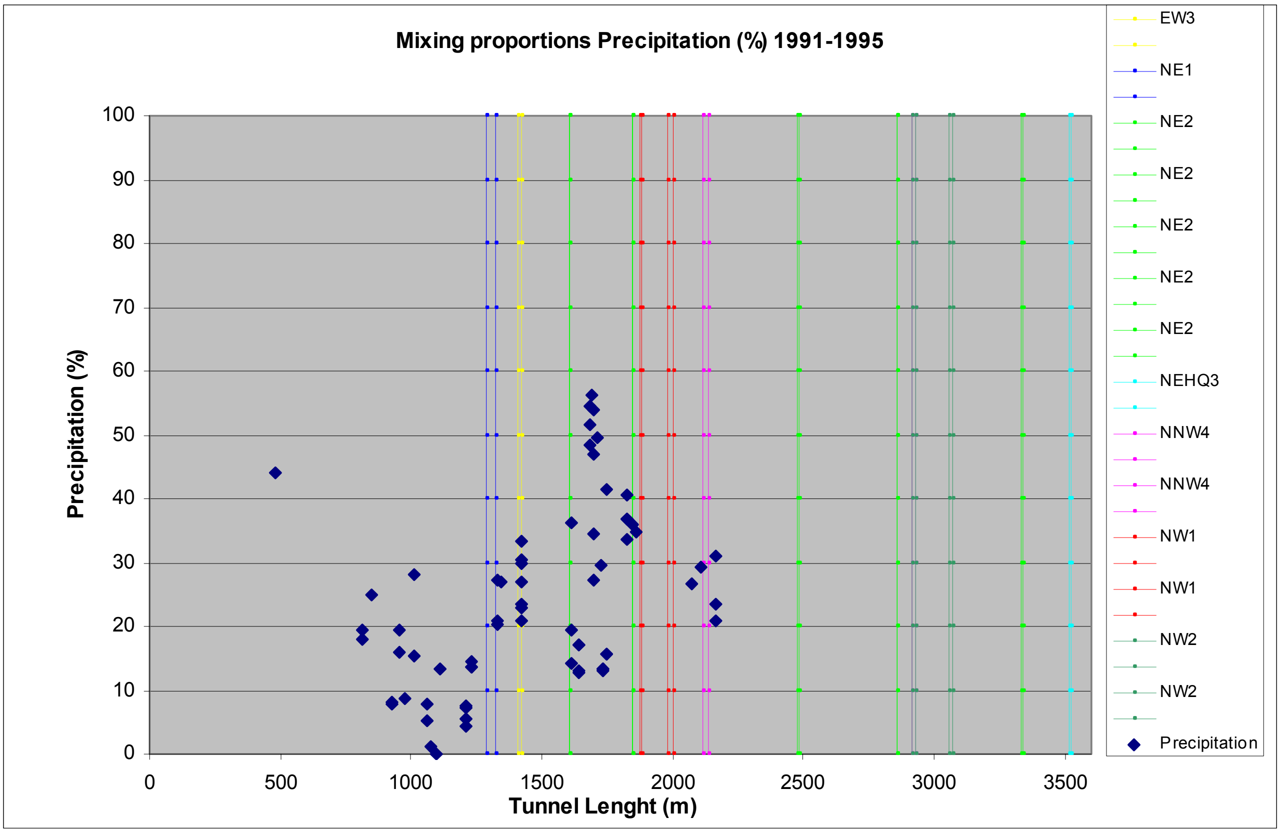
NE1_alt2

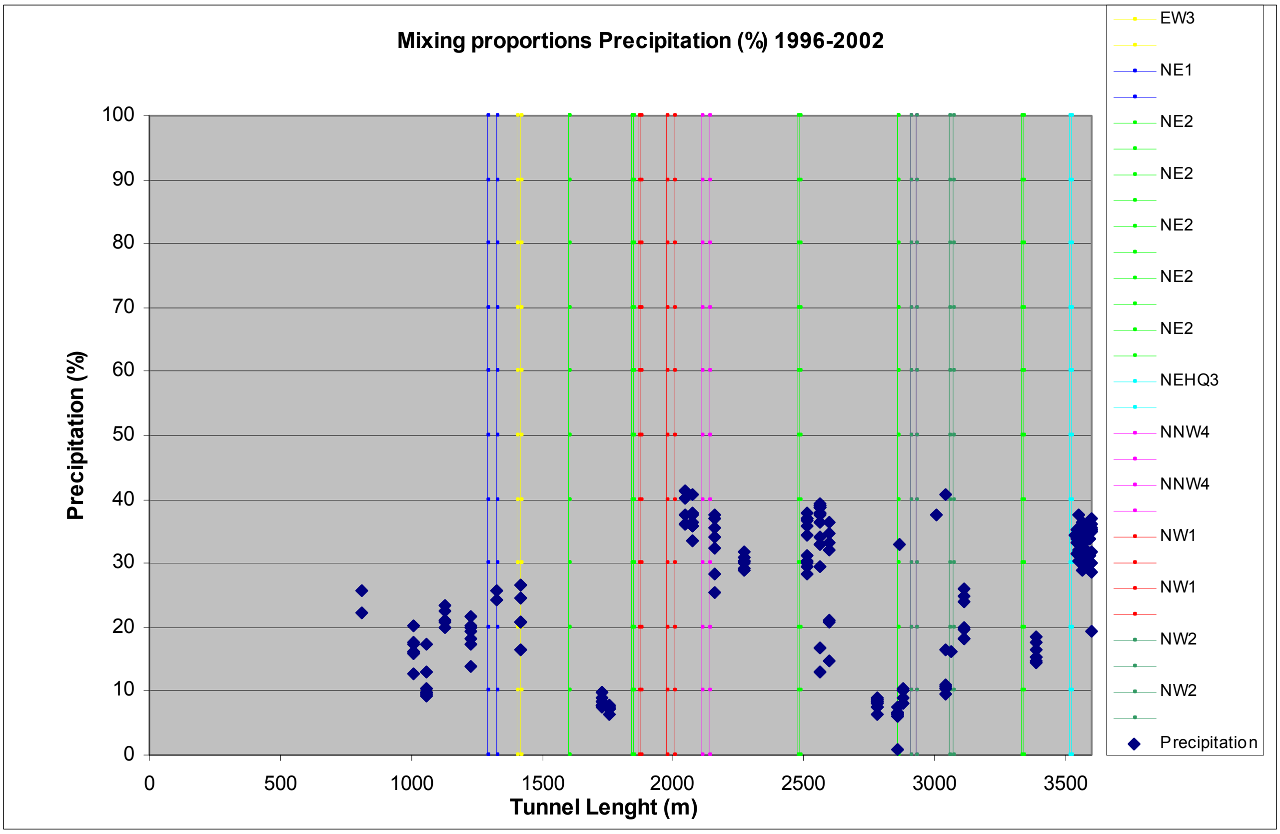


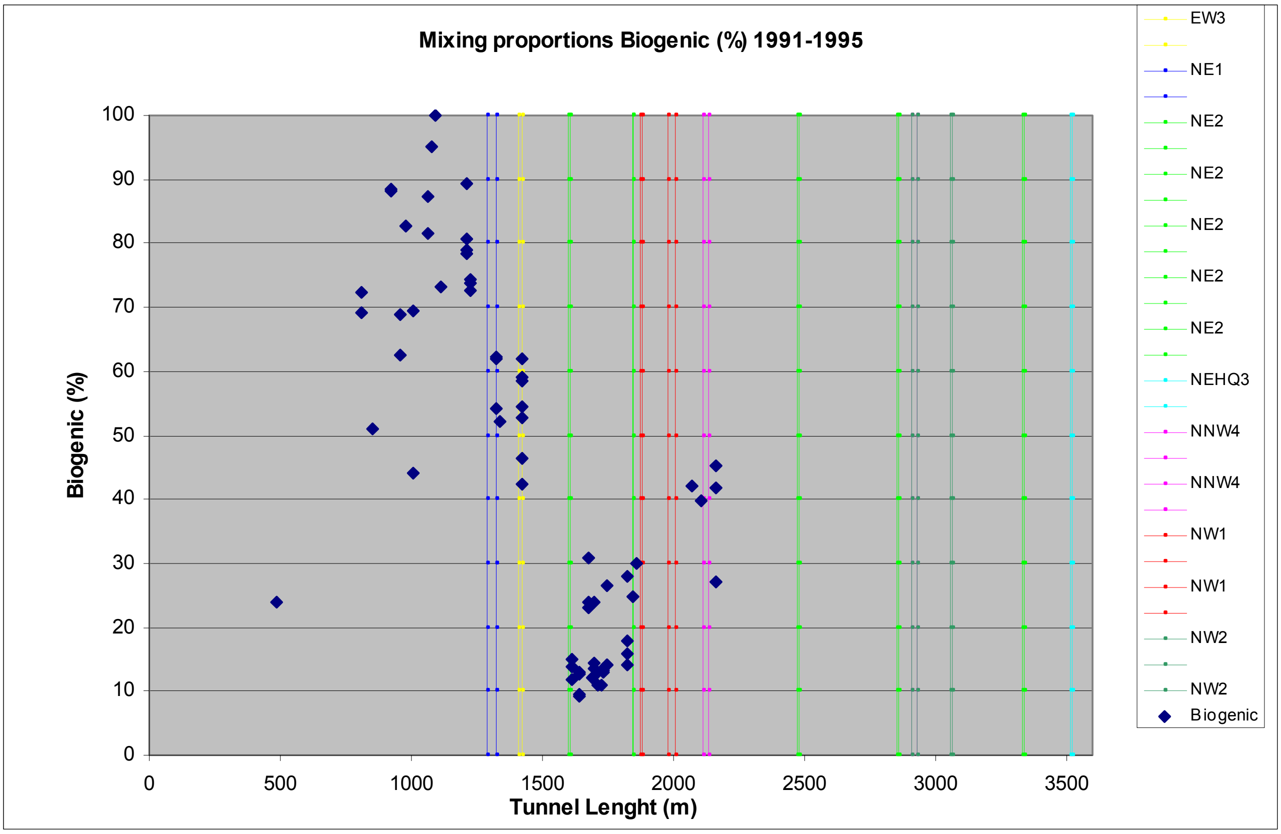
Appendix 4: Visualisation of the changes of cloride and mixing proportions with time in respect to the major fracture zones


Cl 1991-1995
Cl (mg/L)
Lenght (m)
0
1000
2000
3000
4000
5000
6000
7000
0
500
1000
1500
2000
2500
3000
3500
EW3
NE1
NE2
NE2
NE2
NE2
NE2
NEHQ3
NNW4
NNW4
NW1
NW1
NW2
NW2
Cl (mg/L)

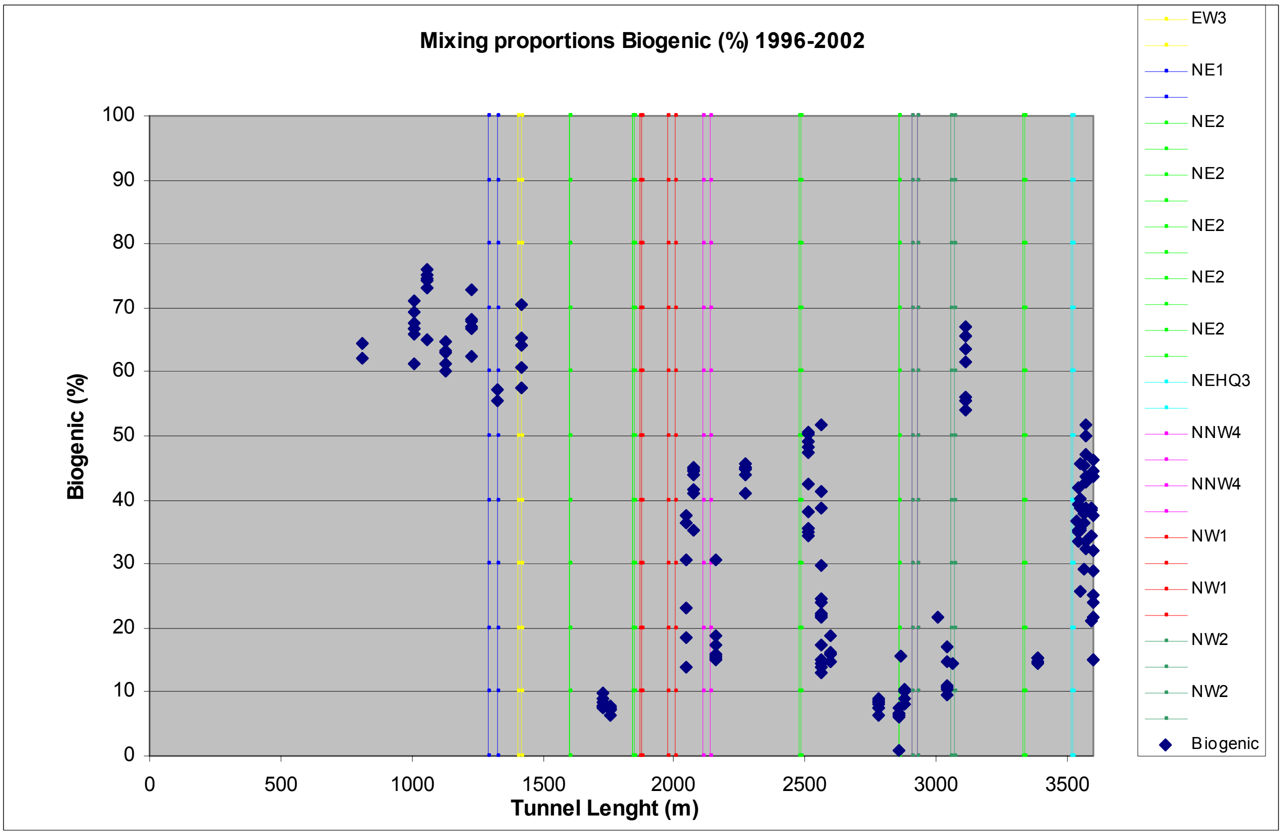

Cl 1996-2002
Cl (mg/L)
Lenght (m)
0
2000
4000
6000
8000
10000
12000
14000
16000
0
500
1000
1500
2000
2500
3000
3500
EW3
NE1
NE2
NE2
NE2
NE2
NE2
NEHQ3
NNW4
NNW4
NW1
NW1
NW2
NW2
CL


Mixing proportions Precipitation (%) 1991-1995
Precipitation (%)
Tunnel Lenght (m)
EW3
NE1
NE2
NE2
NE2
NE2
NE2
NEHQ3
NNW4
NNW4
NW1
NW1
NW2
NW2
Precipitation

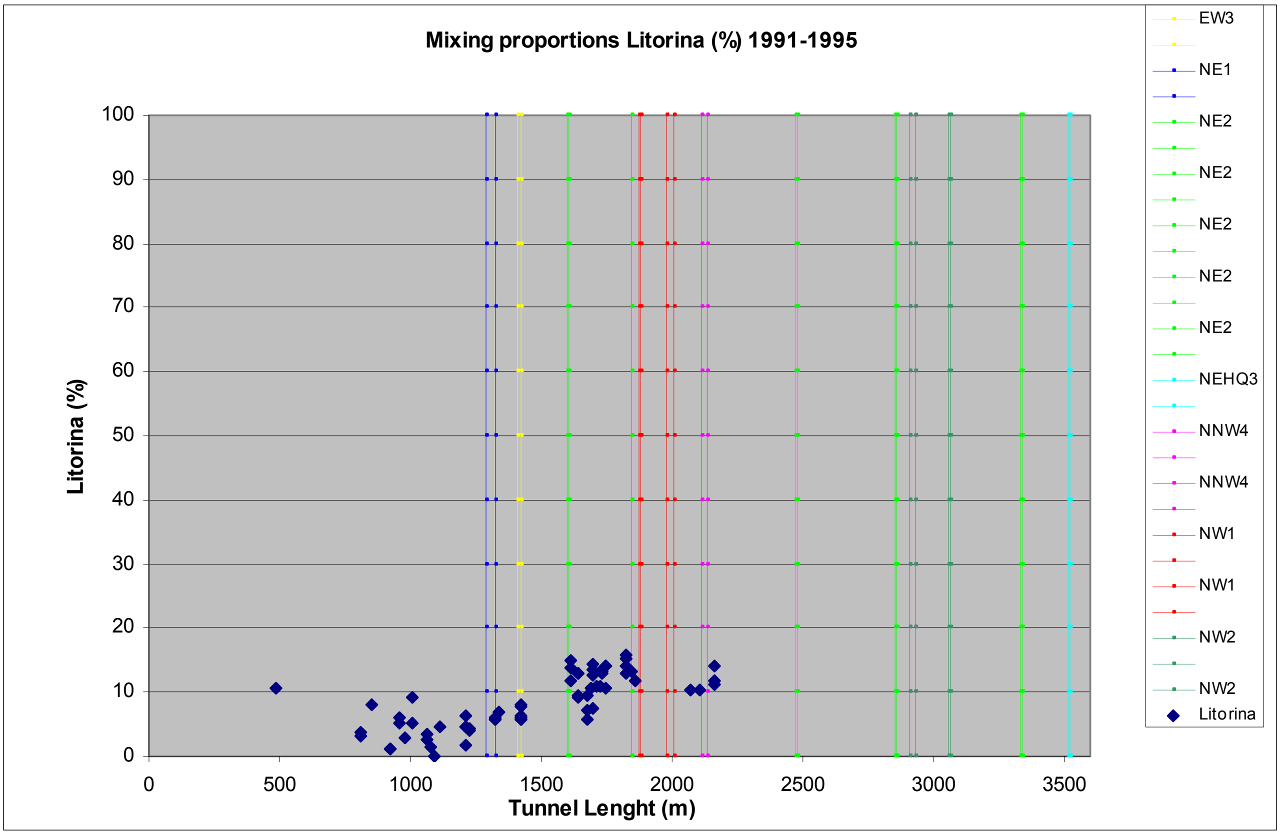

Mixing proportions Precipitation (%) 1996-2002
Precipitation (%)
Tunnel Lenght (m)
EW3
NE1
NE2
NE2
NE2
NE2
NE2
NEHQ3
NNW4
NNW4
NW1
NW1
NW2
NW2
Precipitation

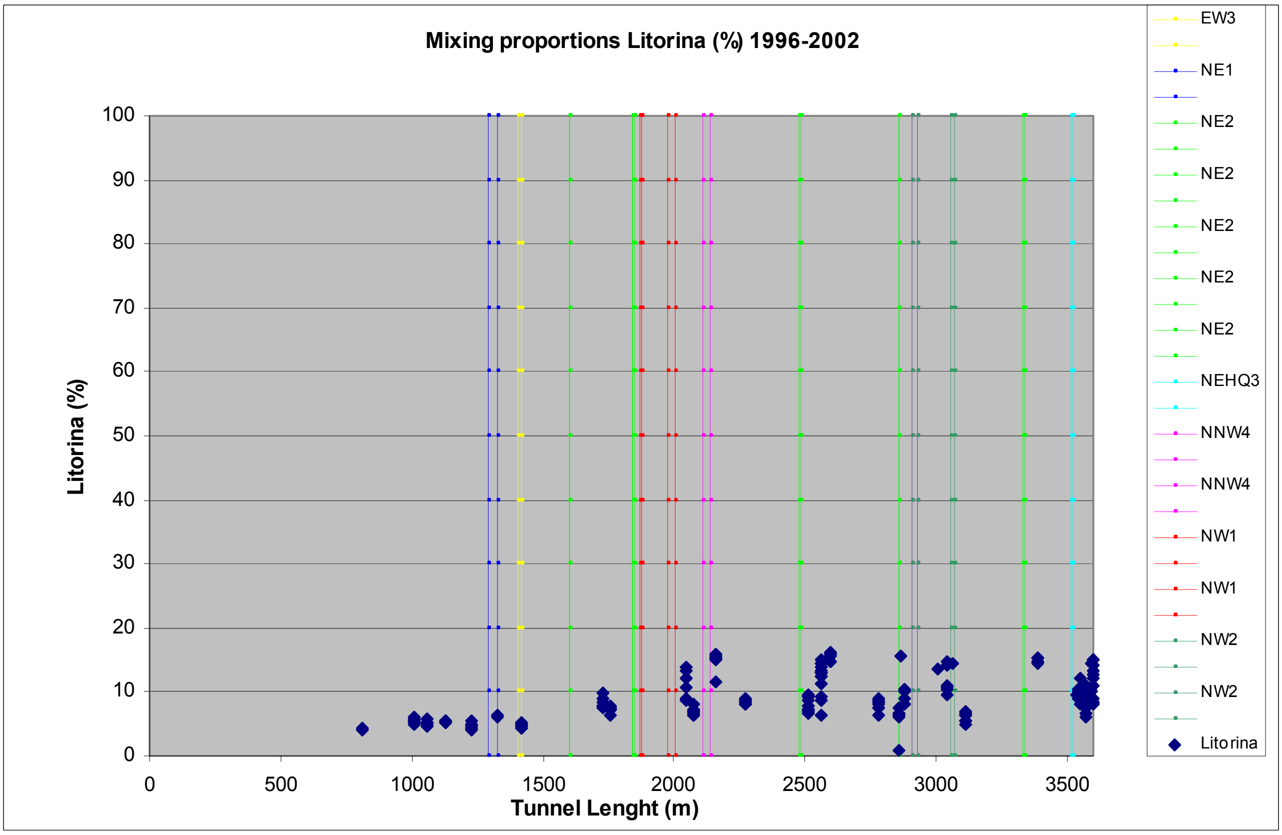


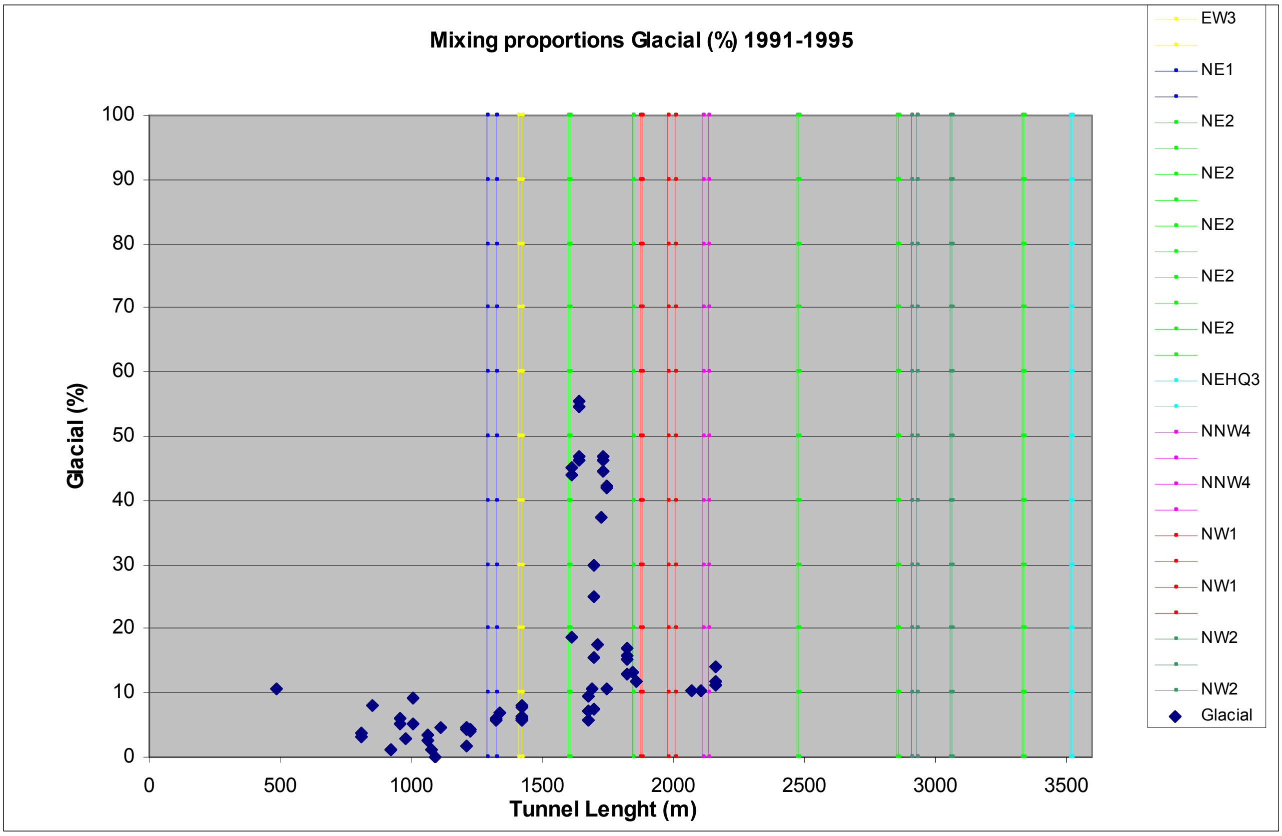
Mixing proportions Biogenic (%) 1991-1995
Biogenic (%)
Tunnel Lenght (m)
EW3
NE1
NE2
NE2
NE2
NE2
NE2
NEHQ3
NNW4
NNW4
NW1
NW1
NW2
NW2
Biogenic



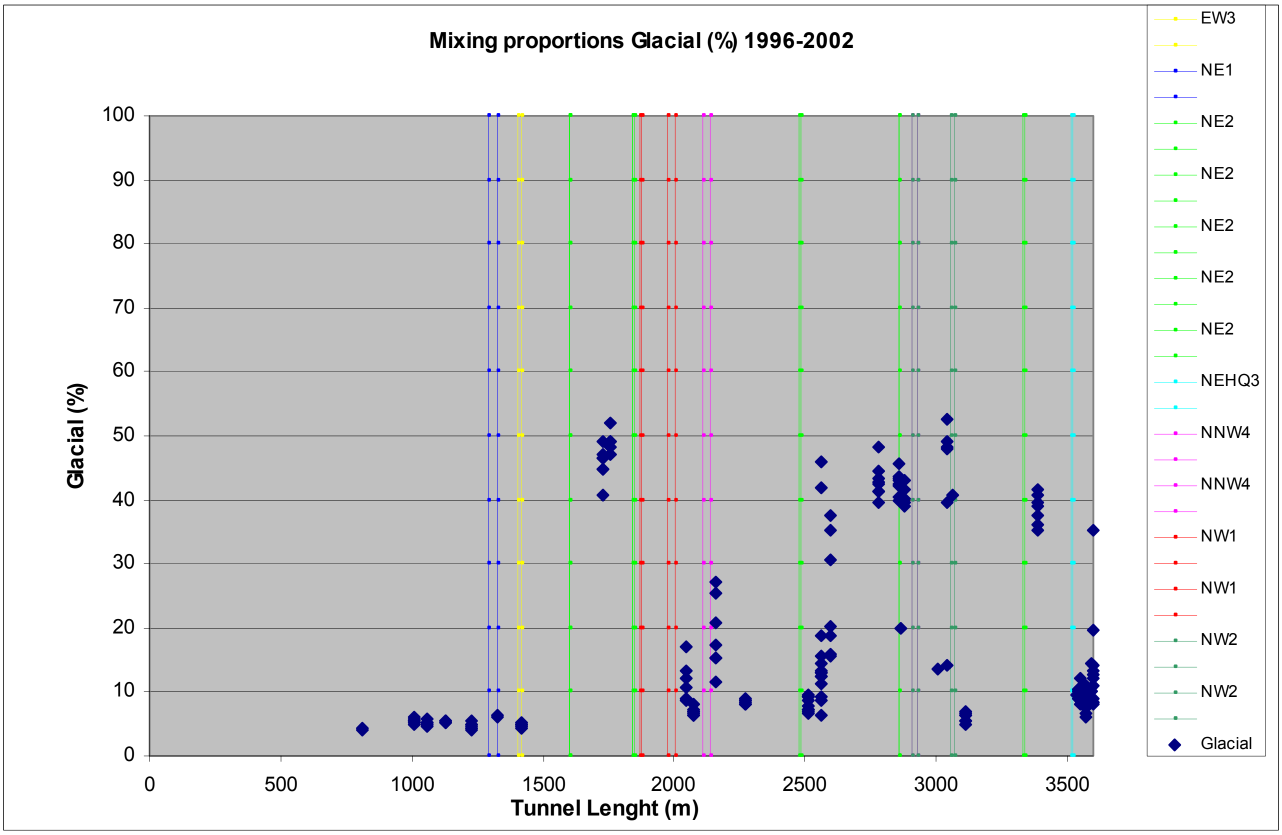
Mixing proportions Biogenic (%) 1996-2002
Biogenic (%)
Tunnel Lenght (m)
EW3
NE1
NE2
NE2
NE2
NE2
NE2
NEHQ3
NNW4
NNW4
NW1
NW1
NW2
NW2
Biogenic


Mixing proportions Litorina (%) 1991-1995
Litorina (%)
100
90
80
70
60
50
40
30
20
10
0
0
500
1000
1500
2000
2500
3000
3500
Tunnel Lenght (m)
EW3
NE1
NE2
NE2
NE2
NE2
NE2
NEHQ3
NNW4
NNW4
NW1
NW1
NW2
NW2
Litorina

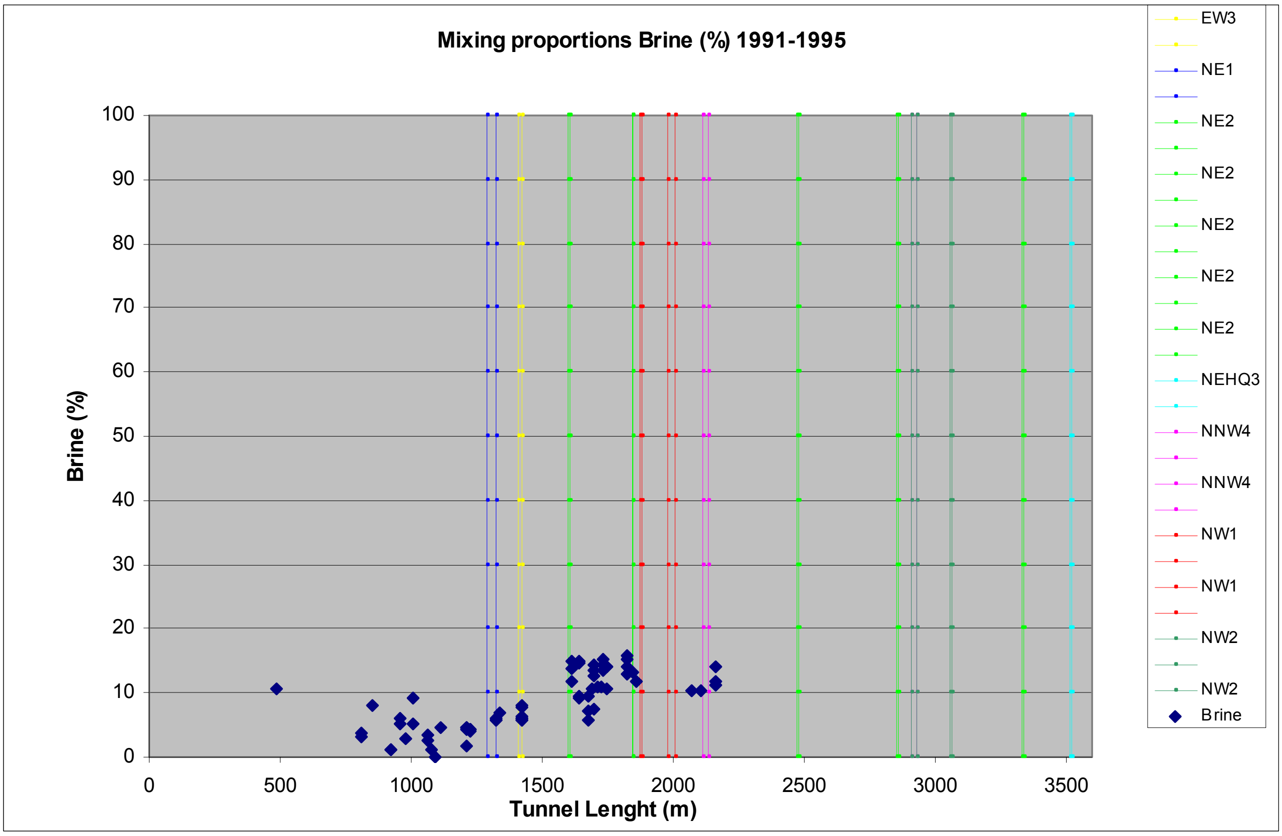

Mixing proportions Litorina (%) 1996-2002
Litorina (%)
100
90
80
70
60
50
40
30
20
10
0
0
500
1000
1500
2000
2500
3000
3500
Tunnel Lenght (m)
EW3
NE1
NE2
NE2
NE2
NE2
NE2
NEHQ3
NNW4
NNW4
NW1
NW1
NW2
NW2
Litorina

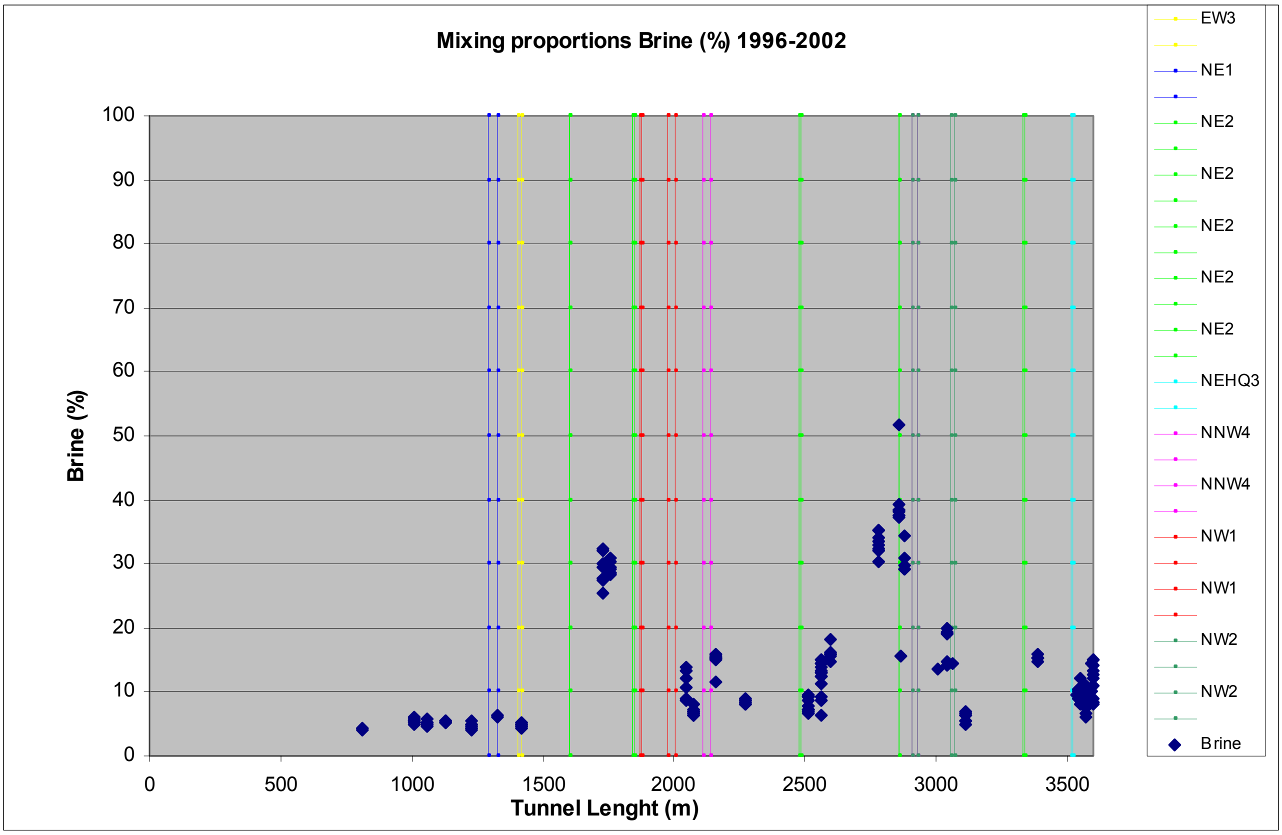


Mixing proportions Glacial (%) 1991-1995
Glacial (%)
Tunnel Lenght (m)
0
500
1000
1500
2000
2500
3000
3500
0
10
20
30
40
50
60
70
80
90
100
EW3
NE1
NE2
NE2
NE2
NE2
NE2
NEHQ3
NNW4
NNW4
NW1
NW1
NW2
NW2
Glacial



Mixing proportions Glacial (%) 1996-2002
Glacial (%)
Tunnel Lenght (m)
0
500
1000
1500
2000
2500
3000
3500
0
10
20
30
40
50
60
70
80
90
100
EW3
NE1
NE2
NE2
NE2
NE2
NE2
NEHQ3
NNW4
NNW4
NW1
NW1
NW2
NW2
Glacial


Mixing proportions Brine (%) 1991-1995
Brine (%)
100
90
80
70
60
50
40
30
20
10
0
0
500
1000
1500
2000
2500
3000
3500
Tunnel Lenght (m)
EW3
NE1
NE2
NE2
NE2
NE2
NE2
NEHQ3
NNW4
NNW4
NW1
NW1
NW2
NW2
Brine


Mixing proportions Brine (%) 1996-2002
Brine (%)
100
90
80
70
60
50
40
30
20
10
0
0
500
1000
1500
2000
2500
3000
3500
Tunnel Lenght (m)
EW3
NE1
NE2
NE2
NE2
NE2
NE2
NEHQ3
NNW4
NNW4
NW1
NW1
NW2
NW2
Brine