Chemical management

Visit from Polish delegates / The Norwegian Environment Agency
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Norske Skog
Saugbrugs

Outline

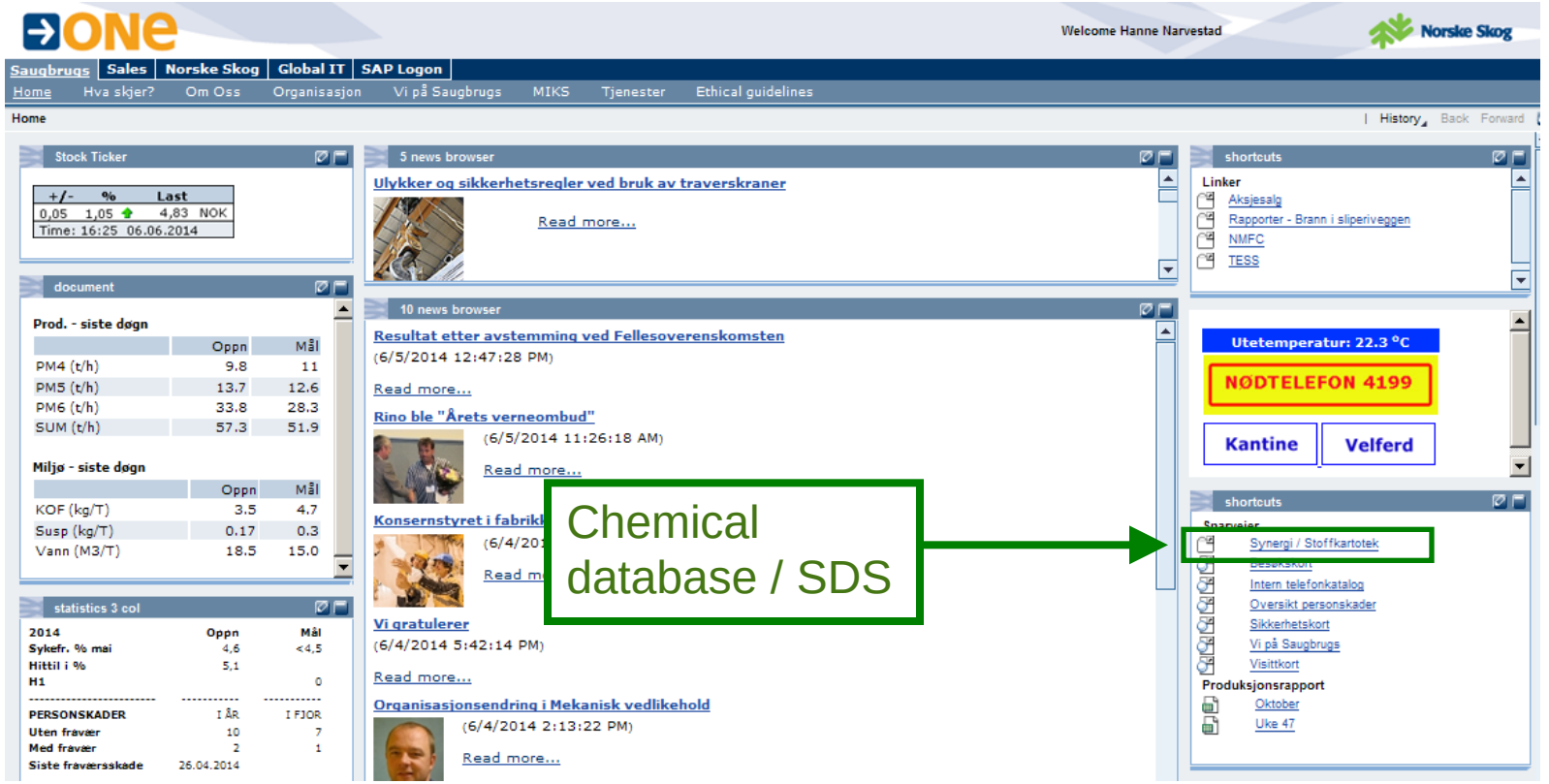
- Approval of chemicals
- Chemical database / Safety Data Sheets / Labelling
- Risk assessment
- Substitution
- Unloading of bulk chemicals
- Mill trials with chemicals

Approval of chemicals

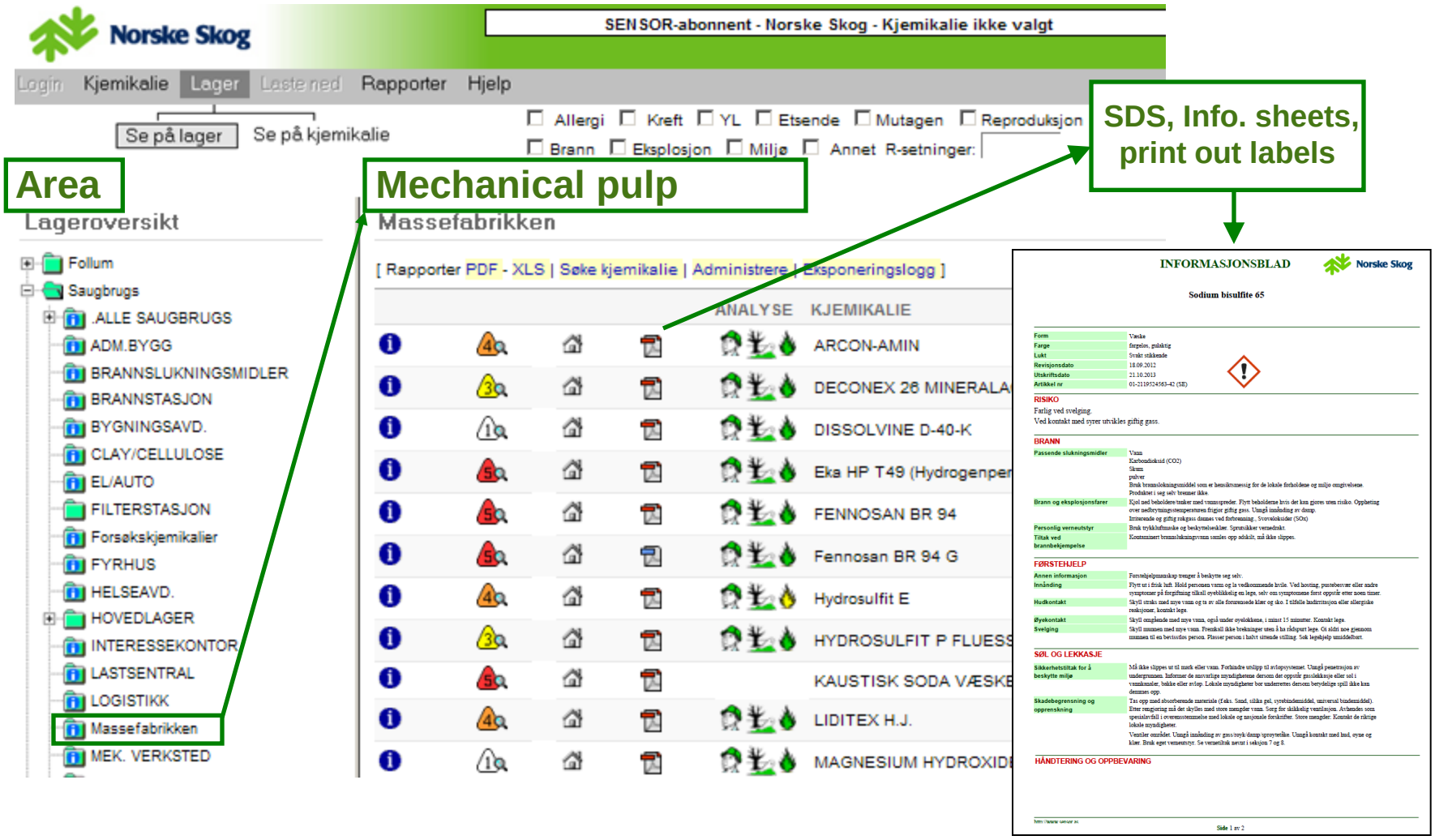
- All chemicals used at Norske Skog Saugbrugs AS must undergo an approval process before they can be purchased and used in the mill.
- A standardized form is used.
- The approval form must be commented and signed by the following persons in order to approve the chemical:
  - Company doctor (also Master of Science in Chemical Engineering)
  - Senior purchaser - The Procurement Department
  - Process engineer (Chemical Engineer)
  - Engineer - Waste Water Treatment Plant
  - Safety representative
  - Chairman of the Chemical Committee (final approval)
- The Chairman of the Chemical Committee is responsible for ensuring that the chemical is notified to the Product Registry before purchasing.

Chemical database / Safety Data Sheets (SDS) / Labelling

- All chemicals (= 478) used in the mill are registered in our chemical database (this is operated by Sensor Chemcontrol AS).
- All employees can reach this chemical database through the intranet (paper copies are also available, a complete collection of all SDS is available on paper at the Gate Guard).



Chemical database / Safety Data Sheets (SDS) / Labelling



Safety Data Sheets (SDS) / Labelling

Safety Data Sheets (Information sheets)

- **unloading station**
- **storage location**
- **dosage location**

Picture

Labelling – unloading station

New labelling:

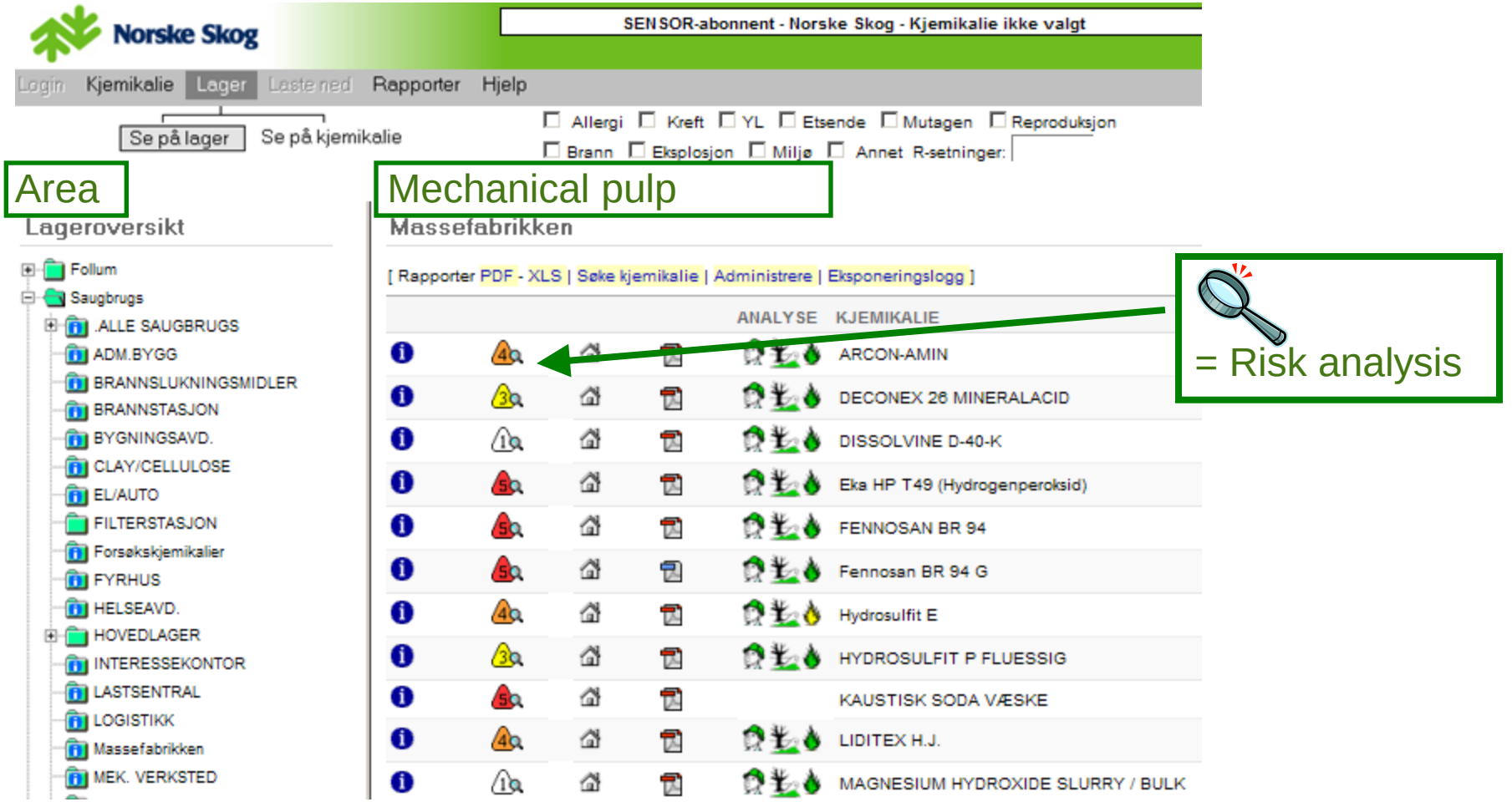
Picture

Old labelling:

Picture

Work to be done before 1 June 2015:
Replace old with new labelling.

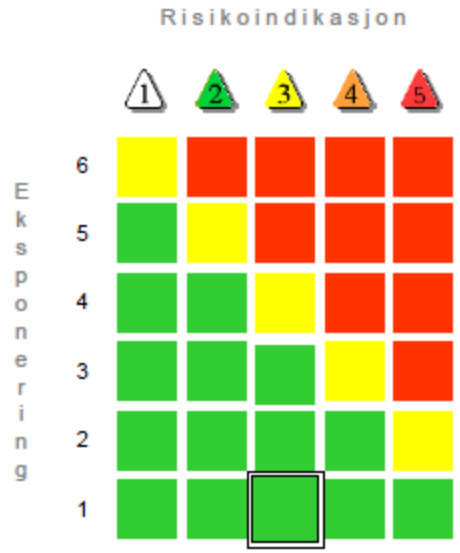
Risk assessment



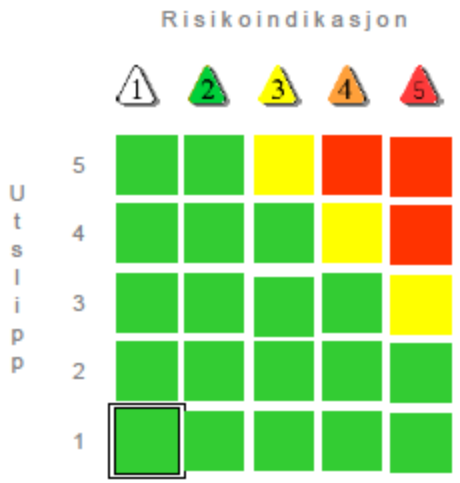
Risk assessment – part one

= Risk analysis (part one) – three categories

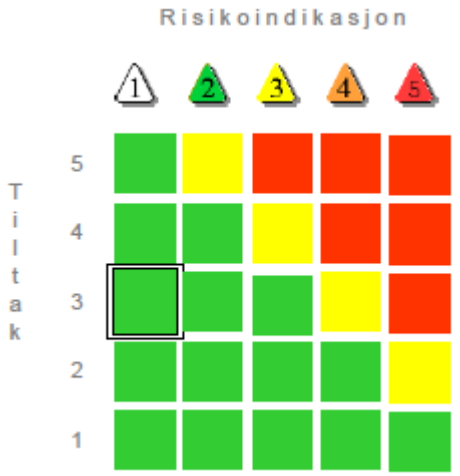
Working environment



Environment



Fire and explosion



Risk assessment – part two

Our own extended risk assessment form is used:

- when there is need for a more detailed assessment (yellow or red in risk assessment part one)
- for more specific work processes including chemicals, such as:
  - handling of containers with hydrosulfite
  - handling of phosphoric acid at the WWTP
  - handling of retention chemicals (powder)

Substitution

- substitution assessments are carried out in each department / area
- the Chairman of the Chemical Committee has the responsibility for maintaining an overview of the conducted substitution assessments
- we would like to work more systematically with substitution assessments in the future

Examples of very important results from work with substitution:

2008-01	Change from sodium hydroxide / sodium silicate to magnesium hydroxide as alkali in hydrogen peroxide bleaching.
2010-02	Change from sulphur dioxide to sodium bisulfite (sodium hydrogen sulfite) for pH adjustment after bleaching.

Unloading of bulk chemicals - procedure

Some important activities before filling:

At the Gate Guard:

1) The driver has to read and understand the unloading procedure (in Norwegian, English or German) and sign. The signed form is stored at the Gate Guard.

2) Gate Guard contacts, according to the freight note, the contact person in the department which shall receive the chemical and provides information about the geographic location of the unloading station.

3) For some defined chemicals the driver will be given a man down alarm.

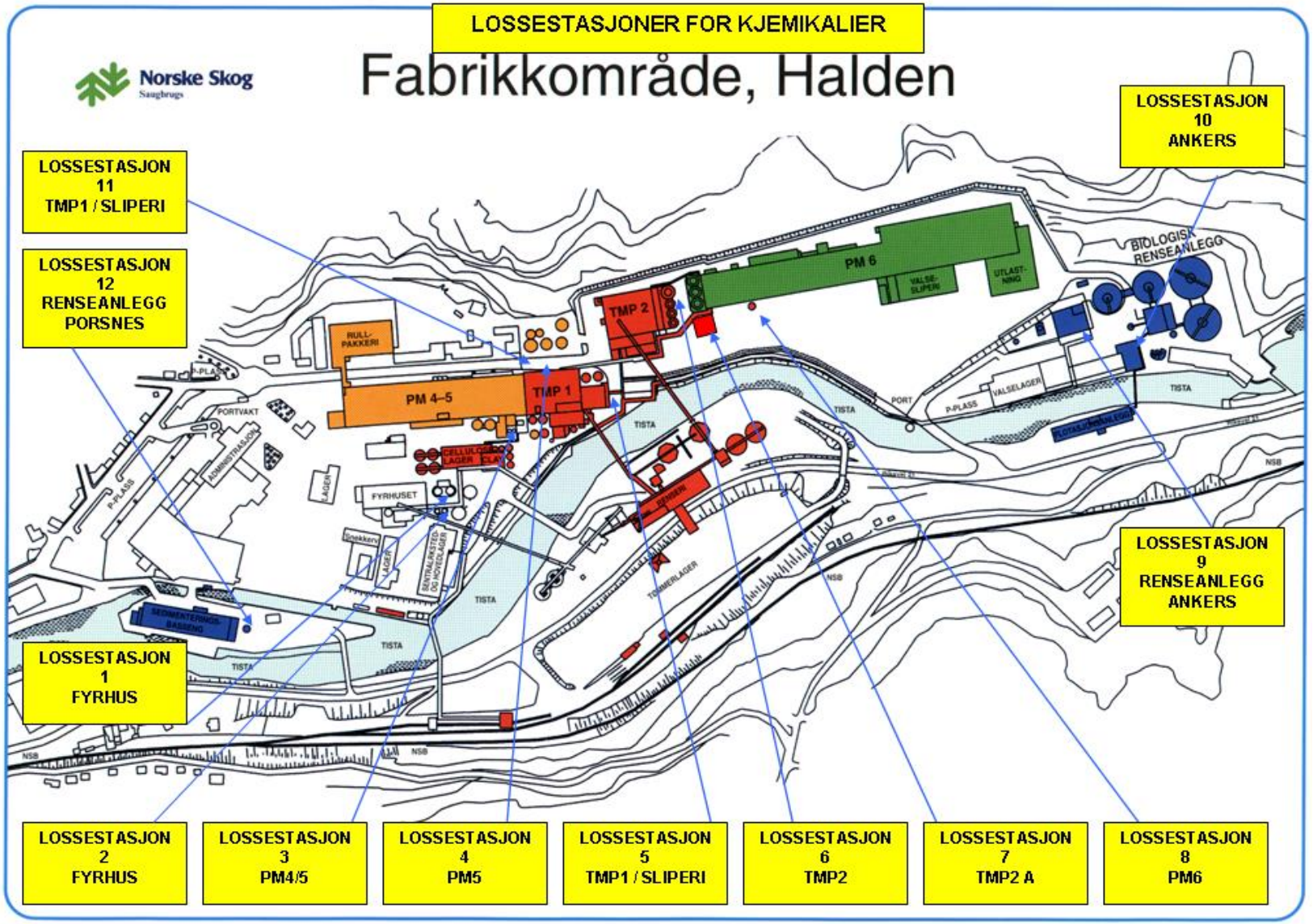
At the unloading station:

4) The contact person meets the lorry driver at the unloading station and receives the freight note.

5) The contact person gives information about emergency equipment and procedures and checks that the correct storage tank is ready for filling (incl. opens/closes valves).

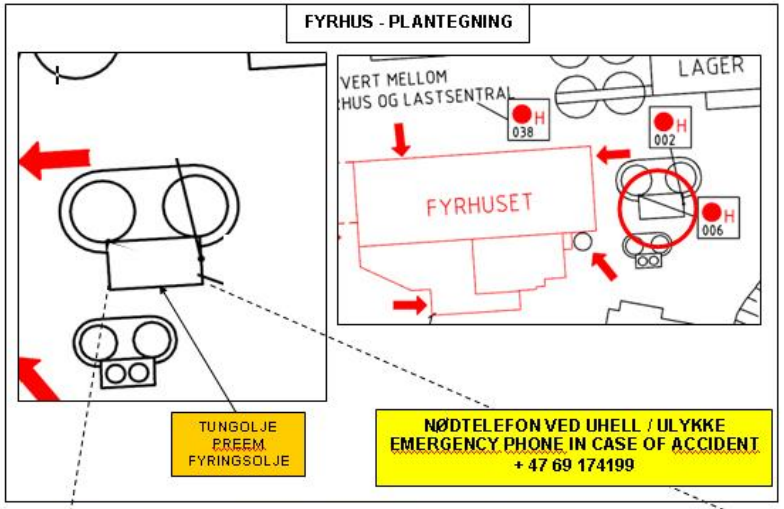
Mandatory protection for the driver: tightly fitting safety goggles, safety shoes, helmet, reflective vest or similar + protective equipment specified in the SDS

Unloading stations – an overview map



Unloading stations – local details

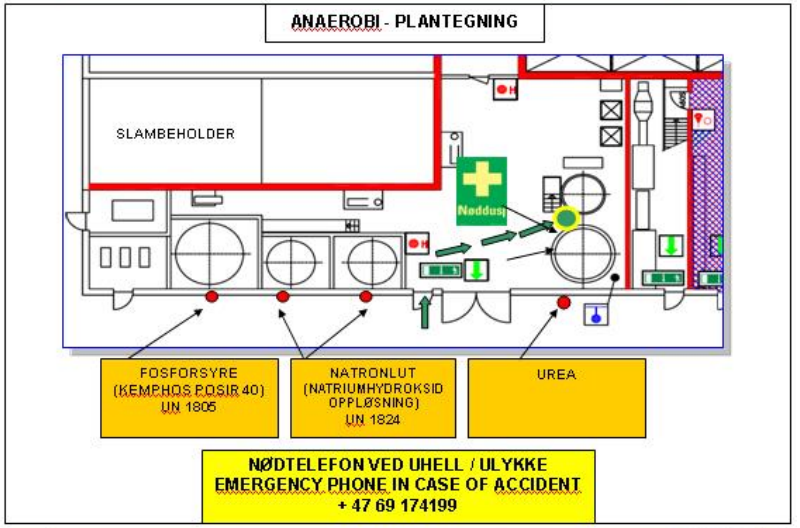
LOSSESTASJON 1 FOR KJEMIKALIER
FYRHUS
TUNGOLJE



Kontaktperson ved fylling av kjemikalier:

Kl.08:00 – 15:00	Operatør Fyrhus	tlf. +47 69174259
Kl.15:00 – 08:00	Operatør Fyrhus	tlf. +47 69174259

LOSSESTASJON 9 FOR KJEMIKALIER
RENSEANLEGG ANKERS – ANAEROBI
FOSFORSYRE – NATRONLUT - UREA



Kontaktperson ved fylling av kjemikalier:

Kl.08:00 – 15:00	Operatør renseanlegg Skiftsjef	tlf. +47 69174044 / 90961205 tlf. +47 69174111
Kl.15:00 – 08:00	Operatør renseanlegg Skiftsjef	tlf. +47 69174044 / 90961205 tlf. +47 69174111

Mill trials with chemicals

Our own “Mill trial procedure” is used

Owner of the trial

Trial coordinator - responsibility:

- **send an approval form to the Chairman of the Chemical Committee**
- **chemical risk assessment**
- **SJA**
- **information sheets as well as “Ongoing mill trial”sign**
- **chemical residues**

Involved (in addition to operators, engineers etc.):

- **chemical contact at the department / area, safety representative, representative from the Chemical Committee and eventually HES / QA manager and fire chief**

Chemical management – a focus area in 2014

- Ensure that we follow all new laws and regulations regarding chemicals (incl. REACH and CLP).
- Work with our intranet system in order to make it easier to find the required information regarding chemical management.
- Revision of internal documents (routines and procedures) for chemical management.
- The different roles and responsibilities associated with chemical management in our mill have been revised and are clearly described in an overarching document.
- Strong focus on risk assessment of chemicals.