# Appendix 13.1



### SAFETY AT YARA SIILINJÄRVI SITE

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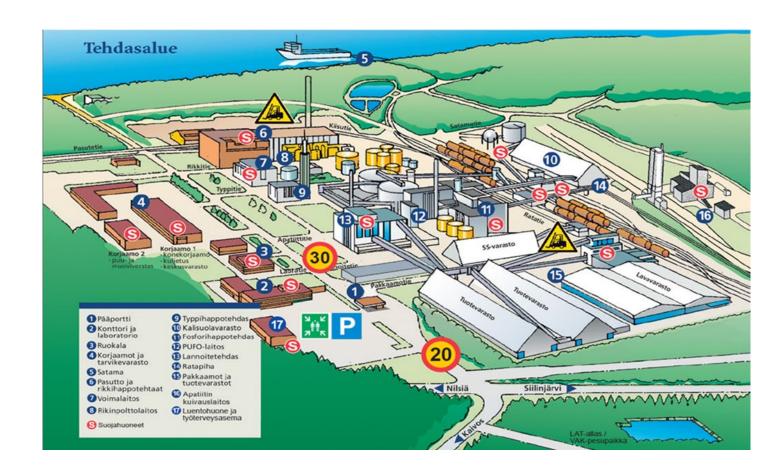
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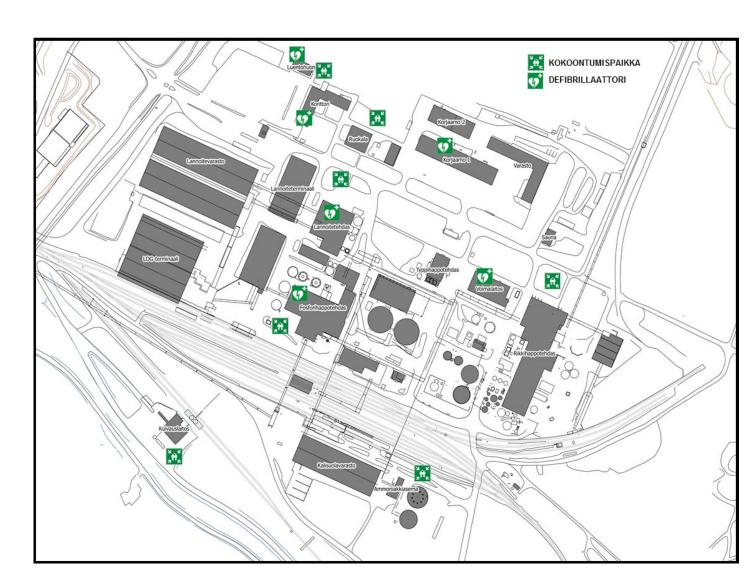


### Shelters in the plant area



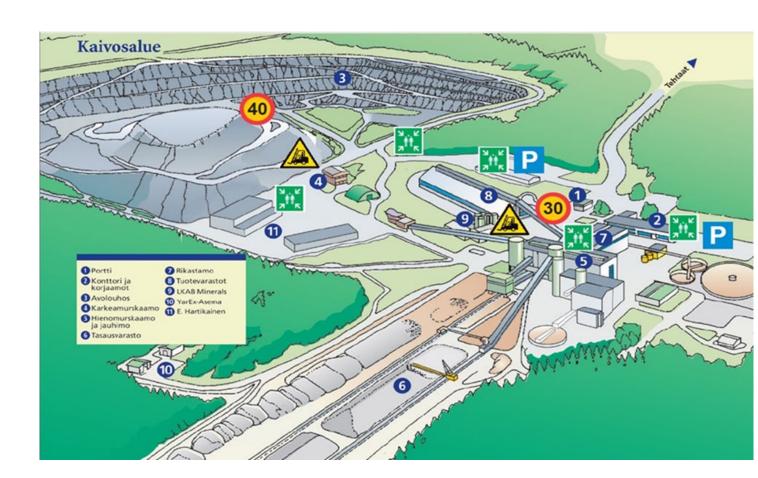


# Gathering points and defibrillators in the plant area





# Gathering points at the mine





# The risks of major accidents at the site include:

### Fertiliser fire: gas cloud

- At the fertiliser storage area or factory
- In materials handling or aboard a ship.

#### Ammonia leak: gas cloud

- Unloading of railway cars, placing in storage
- Factory processes

### Sulfur dioxide leak: gas cloud

Breaking down of a process gas line

#### **Environmental damage**

- Dam accident
- Fire extinguishing water

### The following gases may occur in the area:

- Ammonia
- Sulfur dioxide
- Sulfur trioxide
- Nitrogen oxides
- Fluoride gases
- Hydrogen sulfide
- Chlorine

#### The most common dangerous chemicals at the site are:

- Ammonia
- Nitric acid and nitrogen oxides
- Ammonium nitrate
- Sulfuric acid and sulfuric trioxide
- Sulfur dioxide
- Hydrogen sulfide
- Peracetic acid
- Chlorine
- Phosphoric acid
- Hexafluorosilicic acid
- Lye / sodium hydroxide
- Calcium hydroxide
- Sodium hydrogen sulfide





### Department-specific induction at the site

Everyone working at site shall have an occupationa safety card. Approved cards are TTK, Trinno and verkkokoulu.com.



 Before starting work, a procedure-specific induction must be performed for each procedure.

FHT = phosphoric acid factory Includes: gypsum pile

LAT = fertiliser factory

RET = sulfuric acid and energy production Includes = power plant, ammonia station, calcine pile

LOG = logistics Includes = packaging section, harbour, railway yard, storage, apatite kiln plant

APT = mine

Includes = open pit, concentrating plant, Yarex, E. Hartikainen, paste plant and traffic in the mining area.

Inductions are valid for one year.

Induction by procedure from the video in Prewise.

Duration approximately 15 minutes per video.



Inspections of electrical tools and specified PPE requirements

Electrical tools and extension cords must be inspected by an electrician every 12 months.

A mark of the inspection is made in the marking strip next to the plug.

A note should also be made in the inspection record and documentation.

Partners in the 1st category = at the site all the time.

Partners in the 2nd category = regular supplier, more than 10 times a

vear.

Partners in the 3rd category = one-time supplier, less than 10 days a year.

Partners in the 1st category shall pay for the inspections themselves. For projects, the requirement for inspections is included in the contracts.

Yara pays for the inspections for partners in the 2nd and 3rd categories.

The sanction for rejected tools is €100 per tool, but such sanctions can be easily avoided with a visual check:

- Plug or extension socket is broken
- Frame of electrical tool is broken
- Visible damage to the flexible cord (for example a cut)
- The cover of the extension socket is missing
- Failure of the cable clamp
- Other damage or failure which can be easily visually detected.

#### **SAFETY SHOES AT THE MINE AREA**

Safety shoes with an ankle support shall be used at the mine area.

Regular safety shoes are only allowed at specified areas.





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#### Traffic instructions for the Siilinjärvi mine

### 1. Purpose and scope of application

These traffic instructions define the rules for traffic and moving about in the mining area. The purpose of these instructions is to inform anyone moving in the mining area about its special characteristics and to provide guidance for safe traffic in the area. The area to which these instructions pertain is defined in chapter 3. The general site traffic rules apply for traffic elsewhere in the mining area.

Only staff of Yara Suomi and its contractors who have received the required induction to these instructions may move around in the mining area. Once approved, the induction is valid for one year at a time, after which a revision must be carried out. The traffic instructions entered into force on 1 March 2014.

### 2. Responsibilities and authorisations

Everyone moving in the mining area is obliged to observe these instructions. Anyone who notices activities that go against the instructions or other safety instructions of the site is obliged to intervene in the situation and to stop the activity. All dangerous and near-miss situations and any deficiencies in the safety instructions must be immediately reported in accordance with the reporting practices of the site.

Due to the heavy site transports, variable conditions and the nature of the operating environment, the mining area features risks of severe accidents. For this reason, anyone moving around in the area must at all times exercise particular caution and follow these instructions.

Yara Suomi Oy is not responsible for any damage to private cars or machines in the area.

Yara Suomi Oy has the right to use external parties in monitoring compliance with these instructions.

### 3. Mining area

The mining area, to which these instructions pertain, consists of the Särkijärvi and Saarinen open pits and the Jaakonlampi test quarry, primary crush, banking areas, dam areas, the paste plant, the transport contractor's depot areas at the Saarinen and Särkijärvi pits, the drill car repair shop and the roads that connect all of these sites.

The yard area of the concentration plant/repair shop, the balancing storage, the Yarex station and the AN prill storage are not included in the scope of these traffic instructions. The regulations set out in the general site traffic instructions apply in these areas. The area of the Siilinjärvi mine is presented in image 1.

During gas alarms, the Särkijärvi mine and its surroundings, as well as the outdoor areas of the concentrating plant and the contractors' deports, must be evacuated to the nearest gathering place. The gas alarm stops all valid work permits. After the gas alarm, everyone must wait for permission before entering the pit.

A paste plant, which is a part of the concentrating plant, operates in between the Musti tailings pond area and the Saarinen open pit at the mining site. When at the paste plant, take note of the blasting work at the Saarinen open pit.



An underground pump house for quarry water is located at the bottom of the Särkijärvi open pit. The tunnel is accessible via access control and working there requires a work permit. VHF radios work in the tunnel and also provide alarms for those working in the tunnel.

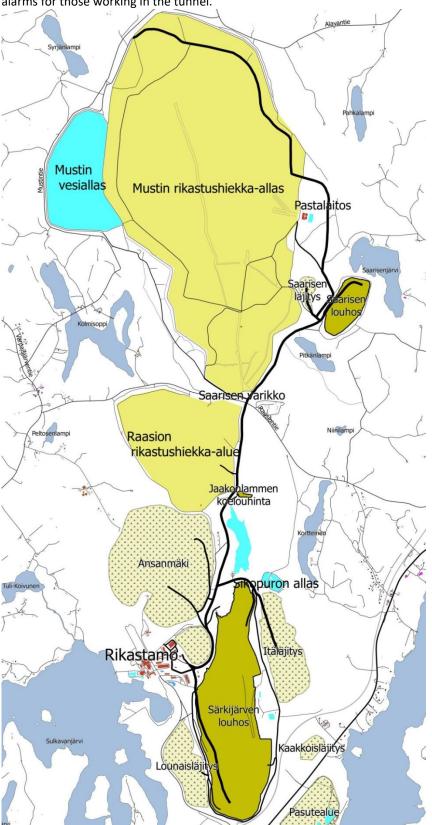


Image 1. Siilinjärvi mining area





#### 4. Traffic in the mining area

This chapter contains instructions that must be observed by all moving around in the area indicated in chapter 3. Practices for visitors to the mine are explained in detail in chapter 5.

The authorities (the police and the rescue services) may move around freely in the mining area in order to perform their duties without the required induction.

Any commuting for work through the mining area is forbidden.

As a rule, the gates at the factory and mining area are kept closed. When going through the gates, you must ensure that you leave them closed and locked.

#### 4.1. Vehicles

As a rule, using any vehicles other than off-road vehicles at the mining area is forbidden. One-off work tasks, such as projects, forestry management etc., anywhere in the main area except for the open pits are an exception to this rule. Exceptional permits for using a car for transport to such work sites are given by the issuer of the work permit and indicated on the permit. In the open pits, using any cars other than off-road vehicles is forbidden at all times.

The vehicles must be in a condition similar to that at the annual vehicle inspection, with the exception of hauling trucks for the quarry material and work machinery and separately agreed vehicles, which must have undergone a service and an inspection as specified in the mine safety regulations. Before starting, all vehicles and work machinery must be subjected to a departure test (cf. SSJA). In the test, the condition of the tyres and lights and the operation of the brakes, for example, are checked. If defects are detected in the vehicle or machine, it may not be used.

All vehicles used in the mining area, with the exception of hauling trucks, work machinery, lorries and other vehicles of similar sizes, must be equipped a safety flag attached to the mast of the vehicle. The height of the safety flag from the ground must be at least 3.5 metres. In addition, all vehicles, with the exception of hauling trucks, must be equipped with a yellow flashing light.

All vehicles regularly in use at the mining area must be equipped with a VHF phone, portable fire extinguisher (recommendation: 6 kg) and first-aid kit. If necessary, the issuer of the work permit shall lend a VHF phone to all external contractors working temporarily at the mine. The contractors must verify the receipt of the phone with their signature. The need for a VHF phone is defined specifically for each work permit / project, depending on where in the area indicated in chapter 3 the work site in question is located. Once the work is completed, the VHF phone must be returned to the issuer of the work permit. In the pit area, the VHF phones use memory locations 7 (chargers, drillers and external workers), 8 (E. Hartikainen Oy's charging truck hauling trucks and other equipment) and 9 (other projects). In addition to this, a shared communication channel is in use during accidents in memory location 13, enabling the alarms to be heard by the entire site.

The orderer of any work must provide details of the regulations concerning vehicles to the supplier upon ordering the work. The attachment of the safety flag on the vehicle, the yellow flashing light and the other equipment mentioned above are the responsibility of the contractor at their own cost.

#### 4.2. Traffic

Entrance to the mining area is only allowed through the main gate.

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The traffic regulations of the Road Traffic Act are observed everywhere in the mining area (please note: seatbelts and hands free equipment must be used). Pay attention to the traffic signs!

As an exception to this, hauling trucks have the right of way. Other vehicles must at all times give way to hauling transportation traffic.

The speed limit at the mining area is 40 km/h, unless otherwise indicated. The driving speed must be at all times adjusted to the quality of the road, visibility and the other conditions, so that safety is never compromised and the driver can control the vehicle in all circumstances. Please note that dust and fog reduce visibility and sludge may make the roads slippery.

At the contractor's depots and the concentration plant area the speed limit is 30 km/h.

For vehicles driving one after each other, a sufficient collision avoidance distance, taking the conditions into account, must be kept at all times. The minimum collision avoidance distance is 30 metres. This distance also applies to hauling trucks. In overtaking situations, a safety distance of at least 5 metres must be kept at all times and in all directions from any hauling trucks that are passed.

Do not overtake hauling trucks if it is not necessary. Overtaking any vehicle at a crossing is forbidden.

Rocks may fall off the edge of the skip of hauling trucks. Falling rocks are dangerous and could roll for several dozens of metres. When driving in the mining area, you must always be prepared to steer clear of falling rocks. Road maintenance is presented in more detail in chapter 4.5.

When traveling in vehicles other than hauling trucks through loading machine working areas, you must always ask permission from the loading machine operator first.

As a result of the risk of cave-in or work carried out above areas at the mine may have to be shut. Entering such closed areas is strictly forbidden.

#### 4.3. Parking in the mining area

Vehicles or mobile machinery must be parked on as level a surface as possible, with the parking brake engaged, and the steering wheels directed towards a wall or similar obstacle. In addition to this, parking must be secured by setting obstacles in front of the wheels whenever necessary.

Never park behind a hauling truck or loading machine.

#### 4.4. Outsiders in the mining area

Due to the sheer size of the mining area, it is always possible that unauthorised outsiders may gain access to the area. This may include regular cars without a host from Yara or its contractors, not equipped with safety flags and/or flashing lights, or pedestrians dressed in normal, non-workwear clothes.

Anyone working in the mining area who notices unauthorised vehicles or persons must warn others in the area of this immediately using the VHF phone and remove the outsider from the mining area immediately. All such incidents must be reported to Yara in accordance with the incident reporting practices.





#### 4.5. Road network in the mining area

Due to the varying production circumstances, the roads in the mining area change constantly; old roads are taken out of use and new roads are built. Therefore, you should always stay alert and pay attention to your route, crossing areas in particular.

Contractors are responsible for road maintenance. E. Hartikainen Oy is responsible for the roads used for the transport of ore and waste rock. In the summer, the maintenance of transport roads for ore and waste rock entails dust suppression by watering and salting the roads and sludge removal; in the winter, snow-ploughing and antiskidtreatment, removal of rocks that have fallen off the trucks and maintenance of roads with quarry gravel and crushed stone.

Please pay attention to the road maintenance machinery and vehicles as well as any rocks that have fallen off the trucks when moving around the mining area.

The maintenance of the rest of the roads (dam areas, pump houses etc.) is the responsibility of other contractors on a case-specific basis.

#### 5. Blasting safety

Blasting work is executed at both the Särkijärvi and Saarinen open pits one to two times per week on varying weekdays. This chapter describes risk factors related to charging and blasting, which all moving about in the area must be familiar with. If necessary, more information can be obtained from the mine staff or the blasting work manager working at the time.

Watching explosions from roads leading to the mine or elsewhere in the area at risk of flying rocks is strictly forbidden without the explicit, case-specific permission of the foreman of the explosion work.

#### 5.1. Notifying of and executing blasting work

At the Särkijärvi open pit, the blasting date and time is indicated with a yellow flashing light, which is located close to the gate of the mine. Another flashing light is located on the roof of the gyratory crusher manager's booth. The time of the blasting work is usually 1.45pm. The exact time is defined by flight and rail traffic, with a tolerance of ±15 minutes from the time indicated with the flashing light.

At the Saarinen open pit, the flashing light indicating blasting work is installed next to the ore haul road leading to Saarinen, soon after the traffic lights at Raasion tie road. At the Saarinen open pit, the blasting times are usually 9.45am or 1.45pm. The time of the blasting work is indicated with the flashing light.

Everyone working in the mining area is obliged to find out whether their work site is located in the area at risk of flying stones and rocks. 15 minutes before the confirmed blasting time, the workers and site machinery must be outside the area at risk of flying rocks. Each contractor is responsible for ensuring that their equipment and staff are at a safe distance.

As the blasting draws near, the guards close down the roads to the area and inspect the blast area. All orders given by blasting work guards must obeyed immediately.

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Before the explosion, you will hear an intermittent whistle for 3 minutes, followed by a continuous whistle for 1 minute. If you at this time suspect that you are in the blast area, contact the foreman of the blasting work with your VHF phone via channel 7. Seek shelter immediately or leave the area. Staying indoors is always safer than outdoors. If you hear the whistle at the mine end, stay in the yard of the concentrating plant. Do not queue up at the mine gate.

# 5.2. Actions to take in the event of a fire in a charging vehicle, the AN prill storage of the Yarex station or explosive storage

In the event of a fire in a charging vehicle, an emergency warning will be issued via the VHF phone. Once you have heard the warning, exit the danger area immediately. You must observe the orders issued by the blasters and rescue professionals on site at all times.

In the event of a fire in the Yarex station, explosive storage or AN prill storage, you must observe any orders issued by the blasters and the rescue professionals.

### 5.3. Charged fields

Due to the nature of the charging work, open pits always include charged fields that are being prepared for the next blasting work. Moving about in a charged field and between large boulders (breakages) left behind from blasting work is strictly forbidden without the permission of the chargers. The breakages and charged areas must be marked visibly with red flags.

On blasting work days, the chargers prepare for the blasting by drawing shot-firing cables from the fields, breakages, toe holes etc. close to the blasting site. Avoid driving off road on blasting days. If a road is closed with a flag, access in that direction and to that area is no longer permitted. Driving over a blasting cable will break the cable and move the blast.

#### 5.4. Thunderstorms

Thunderstorms may cause a risk of explosion at charged fields. For this reason, you should always leave the open pit during thunderstorm. You can monitor the progress of a frontal thunderstorm with thunder radars available on the Internet.

When the frontal thunderstorm is approaching the quarry, leave the blast area. Everyone working in the area is obliged to ensure that all persons working in the blast area are aware of the approaching frontal thunderstorm. In addition to this, the mine contractor shall issue a notification of the approaching frontal thunderstorm on channels 7, 8 and 9 of the VHF phone. Once the thunderstorm has passed and it is safe to return to the pit, a separate notice will be issued in the same way as described above.



#### 6. Visitors in the mining area

This chapter describes the issues that must be taken into account when taking visitors to the mining area indicated in chapter 3. Otherwise you should observe the general visiting instructions for the Siilinjärvi site. The hosts of the visit and those guiding the visitors at the mine site are responsible for ensuring the safety of the visitors and compliance with these instructions.

Visitors may only move around the factory and mining areas when guided by their host. If a subcontractor has a need to bring visitors to the company sites, they must acquire permission from the orderer. These visitor instructions apply also to the staff and visitors of the contractors operating in the area.

### 6.1. Visits to the vantage point over the open pit

The vantage point over the open pit may be visited without separate permission with the following conditions:

- Monday—Friday 7am—1pm or 3pm—5pm without providing a separate notification.
- As a rule, the vantage point may not be visited Monday–Friday 1pm–3pm. The foreman of the blasting work may grant an exceptional permit for the visit.

Personal protective equipment is not required for visits to the vantage point. When visiting the vantage point marked on the map in a vehicle, no special equipment is needed.

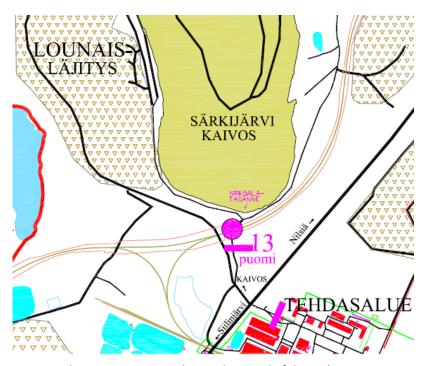


Image 2. The vantage point at the southern end of the Särkijärvi open pit.





### 6.2. Visits elsewhere in the mining area

Those who are not mine staff must always request permission for a visit to the mining area or when bringing visitors to the mining area (with the exception of the vantage point). Mine staff who are familiar with the conditions of the mining area and able to arrange a competent guide for the visit, if necessary, may grant such permissions. The minimum age limit for visitors to the mining area (with the exception of the vantage point) is 15 years.

For any other parts, the general site visitor practices apply for visits to the mining area. All visitors must wear personal protective equipment (protective goggles, safety shoes, high-visibility clothing and safety helmet) at the mine site. In addition to this, the same requirements apply to the visitors' vehicles as do to any other vehicles used in the mine site.

If the visitors enter the mine site with their own car, their host must go through the instructions indicated above with the driver. In addition to this, if necessary, a representative of Yara must be present in the vehicle, or the visitors must drive as a convoy with Yara's representative driving the first car.