



Overview of a selection of facilities for treatment and destruction of organic hazardous waste in the Barents and Baltic Sea region countries

Report for the Barents Euro-Arctic Council's (BEAC) Working Group on Environment



FINAL REPORT
Ecolabel Partnership & Virebit Ltd

May 2013

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

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Cover photo: Ekokem Oy Ab, Finland

List of Acronyms

BAT	Best Available Techniques
BEAC	Barents Euro-Arctic Council
BREF	Best Available Techniques Reference Document
EEA	European Economic Area
EMAS	European Eco-Management and Audit Scheme
E-PRTR	European Pollutant Release and Transfer Register
EWC	European Waste Catalogue
IED	Directive (2010/75/EU) on Industrial Emissions
IPPC	Integrated Pollution Prevention Control
HELCOM	Helsinki Commission (Baltic Marine Environment Protection Commission)
Klif	Klima og forurensningsdirektoratet , The Climate and Pollution Agency of Norway
PCB	Polychlorinated biphenyls
POPs	Persistent Organic Pollutants

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DISCLAIMER

This publication is developed on behalf of the Barents Euro-Arctic Council's Working Group on Environment (BEAC WGE) with financial support from some of its member states. However, the content of this publication does not necessarily reflect the views, policies or recommendations of the Barents Euro-Arctic Council.

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Summary

SUMMARY

The report "Overview of a selection of facilities for treatment and destruction of organic hazardous waste in the Barents and Baltic Sea region countries" is developed on behalf of the Barents Euro-Arctic Council's (BEAC) Working Group on Environment.

The aim of the report is to present information on technical, operational and legal conditions for a selection of facilities that are granted license for environmentally-sound treatment and/or destruction of organic hazardous waste. The report is limited to describing facilities for thermal destruction of organic hazardous waste and to the treatment of oily waste. Landfills for depositing hazardous wastes are not included in the report. Ten countries are included in the study and from each country 2-3 facilities are described in the report. The selected facilities show a variety of technologies that are commonly used. The report may serve as a catalogue for companies who are looking for treatment alternatives for their waste or for investors or others who are looking to see which technologies are commonly used in this region. However, it is important to underline that the report presents only a selection of facilities and that there are a number of facilities that are not presented in the report.

The report contains information on relevant legal framework and guidelines regarding hazardous waste treatment, information on each facility's ownership, contact information, permit, capacity, energy production, residues, requirements on delivery and reception of waste, restrictions for import of waste and information on the range of treatment cost (gate fee) for destruction of hazardous waste (2012/2013 data) in the region.

The countries included in the overview are Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Norway, Poland, Russia and Sweden.

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Summary

РЕЗЮМЕ

Доклад «Обзор избранных предприятий для переработки и уничтожения органических опасных отходов в странах Баренцева региона и региона Балтийского моря» разработан Рабочей группой по окружающей среде Баренцева Евро-Арктического Совета (СБЕР).

Целью доклада является представление информации о технических, эксплуатационных и правовых условиях избранных предприятий, которые получили лицензию на экологически безопасную переработку и/или уничтожение органических опасных отходов. Предприятия ограничены термическим уничтожением органических опасных отходов и переработкой нефтесодержащих отходов. Полигоны для размещения опасных отходов в доклад не включены. Исследование охватило десять стран и от каждой страны в докладе описаны 2-3 предприятия. Выбранные предприятия демонстрируют различные широко используемые технологии. Доклад может служить как каталог для компаний, которые ищут альтернативные варианты переработки для своих отходов или для инвесторов или других сторон, которые хотят узнать, какие технологии широко используются в этом регионе. Тем не менее, важно подчеркнуть, что в настоящем докладе даётся описание только некоторых предприятий, и что существует целый ряд предприятий, которые не попали в него.

Доклад содержит информацию о соответствующей правовой базе и руководящих нормативах, касающихся обращения с опасными отходами, информацию о собственниках каждого предприятия, контактную информацию, имеющихся разрешениях, мощности производства, производстве энергии, остатках после сжигания, требованиях по доставке и приему отходов, ограничениях на импорт отходов и сведения о диапазоне стоимости обработки (плата за прохождение ворот) за уничтожение опасных отходов (данные 2012/2013 гг.) в регионе.

Странами, включёнными в доклад, являются Дания, Эстония, Финляндия, Германия, Латвия, Литва, Норвегия, Польша, Россия и Швеция.

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Introduction

1. Introduction

1.1. Scope of the study

This study has been prepared jointly by the consultant companies Ecolabel Partnership (Ekoleima Ay), Finland and Virebit Ltd., Finland for the Barents Euro-Arctic Council's (BEAC) Working Group on Environment and under the work programme of the subgroup on Cleaner Production and Environmentally Sound Consumption. The aim of the study was to produce a report with information on technical, operational and legal conditions for a selection of relevant facilities that are granted a license for environmentally sound treatment and/or destruction of organic hazardous waste. Ten countries were included in the study and from each country 3 facilities were selected to be described in the final report. The selected facilities show a variety of technologies that are commonly used and granted license for operation in the respective countries. The ten countries in the overview are Finland, Norway, Russia, Sweden, Denmark, Estonia, Latvia, Lithuania, Poland and Germany.

The study was mainly limited to the thermal destruction of organic hazardous waste and to the treatment of oily waste. Hazardous waste landfills are not included in the report. Thermal destruction facilities are presented to show frequently used technologies for environmentally sound destruction of organic hazardous waste. Oily waste treatment is selected for the overview because it is the most commonly occurring hazardous waste group, highly relevant for the region and a major risk to the environment, especially in the arctic environment. Oily waste treatment methods will include waste mineral oil refining for reuse or fuel and different technologies of separation of mineral oil and oily solids from water. Methods for thermal treatment include incineration in rotary kiln incinerators particularly designed for incineration of hazardous waste and incineration in cement kilns equipped with special feeder systems for waste materials.

The report contains an overview of relevant legal issues and guidelines regarding hazardous waste treatment. All ten countries have ratified both Basel and Stockholm Convention and eight of the ten countries are members of the European Union whereas Norway follows the EU directives in its national legislation.

The BAT (Best Available Techniques) Reference Document (BREF) for dedicated waste incineration has been published by the European Commission. The document gives guidelines and parameters for the incineration process and its operation in line with the respective EU Directives.

The description of the facilities in this document should give information about the capabilities of each facility to receive various types of organic hazardous waste. The document may serve as a catalogue for companies who are looking for treatment alternatives for their waste or for investors or others who are looking to see which technologies are commonly used in this region. However, it is important to underline that the report presents only a selection of facilities and that there are a number of facilities in each of the countries that are not presented in this report. Detailed information on prices for treatment of organic hazardous waste is not included in the report, but an approximate range of prices is presented based on the available information. Most of the companies do not publish general price lists. The gate fee is often negotiated case by case.

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Introduction

The 27 facilities in this report were chosen using the above mentioned criteria: All facilities have a valid operational and environmental permit, they are designed to treat hazardous waste either by thermal or other proven means, their technology being in line with the standards given in the BREF document for dedicated waste incineration or in case of treatment of waste oil the method is approved in their operational or environmental permit.

1.2. Methodology

The information to this report was collected from several sources. The European Pollutant Release and Transfer Register E-PRTR (<http://prtr.ec.europa.eu>) contains information about waste treatment facilities in Europe. A preliminary list of companies for this project was prepared using data from E-PRTR. A list of Russian facilities was collected partly from internet and partly by using personal contacts. The first approach was to send a letter to the relevant authorities of the countries inquiring information about possible facilities that would fulfil the criteria described above. This inquiry resulted in only general comments about where more detailed information could be found, or there was no response at all. A preliminary list of facilities was prepared and a letter was sent to 35 facilities. Some companies were approached using personal contacts to the management. The letter was resent due to poor response and at the end answers directly from 7 companies were received. The information of other preselected companies was then collected using web pages of the companies and the controlling authorities in each country. After this procedure there were still not enough information from Poland, Lithuania and Russia. The Finnish trade promotion organisation FINPRO (www.finpro.fi) was hired to collect the missing data from Russia, Poland and Lithuania. After a careful evaluation of the collected information the final list of companies contains 27 facilities from Finland, Norway, Sweden, Denmark, Estonia, Latvia, Lithuania, Poland, Russia and Germany.

HELCOM or Helsinki Commission - Baltic Marine Environment Protection Commission - is the governing body of the Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (entered into force on 17 January 2000). HELCOM has published a survey¹ of North-Western Russian hazardous waste amounts and treatment facilities and methods. According to the report the main hazardous waste treatment facility in the vicinity of the Baltic Sea is SUE Polygon Krasny Bor, which has collected hazardous waste since the late 1960s. The facility is not included in the report because the actual activity at the site is mostly storage of hazardous waste.

¹ HELCOM 2010, BALTHAZAR project 2009-2010: Reducing risks of hazardous wastes in Russia

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Relevant legislation

2. Relevant legislation regulating the treatment and destruction of organic hazardous waste

2.1 EU

The Directive 2000/76/EC of the European Parliament and of the Council on the incineration of waste gives the basis for each EU country's national legislation concerning incineration of waste. It gives the conditions for delivery and reception of waste, operating conditions and maximum air emissions limit values. The limit values are also given for water discharges from exhaust gas purification processes as well as for residues remaining after the incineration process. The monitoring and control and measurement requirements are given.

The regulation (EC) No 1013/2006 of the European Parliament and of the Council on shipments of waste controls all waste movements over the borders of EU countries, either imported to an EU country from another EU country or from outside of the EU and exports to EU countries or to countries not belonging to the EU. "This Regulation establishes procedures and control regimes for the shipment of waste, depending on the origin, destination and route of the shipment, the type of waste shipped and the type of treatment to be applied to the waste at its destination" (Article 1. paragraph 1 of the EC Regulation No 1013/2006). Norway as a member of the EEA (European Economic Area) follows EU directives in their national legislation.

2.2 Basel Convention

The Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal regulates hazardous waste exports and imports. Any movement of hazardous waste over the border shall be controlled by a notification procedure where the authorities in the country of origin of waste, in the receiving country and in the transit countries have to approve the intended transport prior to commencing the transportation. The original owner of the waste is responsible of the procedure until the waste has been disposed of. In case the intended disposal facility cannot receive the waste, the original owner is obliged to take the waste back and find another treatment facility. The financial risk is covered by financial guarantee which is obligatory before the approval of the transportation.

2.3 Stockholm Convention

Stockholm Convention lists 21 particularly harmful and persistent chemicals (POPs) and gives timelines and other conditions for their disposal. Some chlorinated pesticides and polychlorinated biphenyls (PCB) are examples of the POPs.

2.4 Best available techniques

The Integrated Pollution Prevention and Control Reference Document on the Best Available Techniques (BREF) for Waste Incineration is based on the IPPC Directive 96/61/EC regarding incineration of waste.

The IPPC-directive is now integrated in the new directive (2010/75/EU) on Industrial Emissions (IED) which came into force on 7 January 2011, and should be implemented into national legislation by 7

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Relevant legislation

January 2013. According to the proposed work programme for revision of BREFs for the period 2013-2018, the BREF on Waste Incineration is planned for revision based on IED in the period 2014-2016.

The document deals only with the dedicated incineration of waste and not with other situations where waste is thermally treated, e.g. co-incineration processes such as cement kilns.

The document gives guidelines and examples for acceptable procedures and processes including emission control and limits which are regulated in the waste incineration Directive and other relevant EU legislation.

2.5 Russian legislation

The Russian legislative system concerning hazardous waste is different from the European Union. The main laws controlling hazardous waste collection and treatment are:

- Federal Law No. 128-FZ of the Russian Federation of August 8, 2001 Concerning the Licensing of Certain Types of Activity
- Statute on Licensing of Collection, Use, Deactivation, Handling, and Disposal of Hazardous Waste (adopted by the Russian Government Order of 26.08.2006 N 524).
- Russian Government Order of 26.08.2006 No. 524 "On the Adoption of the Ordinance on Licensing of the Business of Collection, Use, Deactivation, Transportation, and Disposal of Hazard Class I – IV Waste" (as edited by the Russian Government Order of 15.06.2009 N 486)

A hazardous waste passport form shall be completed individually for each type of waste produced (Instruction on completion of hazardous waste passport forms, Order of the Ministry of Natural Resources of Russia from 02.12.2002 N 785 "On adoption of the hazardous waste passport, clause 3)). Passport must be approved by the territorial body of Rospotrebnadzor. Licenses in the waste management sector are issued by Rostechnadzor.

Regulation of emissions and discharges is performed through calculation of permissible emissions and discharges basing on approved methods. The emission limit values of flue gases of waste incineration facilities are defined based on maximum permissible concentration of pollutants in ambient air at the boundary of sanitary protection zone of the enterprise. Thus, there are no direct limit values of harmful substances in flue gases common for all waste incineration facilities like in the EU Directives².

In addition, the Basel Convention obligations have been introduced into the Russian legislative system by the Government Order of 17 July 2003 N 442 "On Trans-boundary Movement of Wastes".

² HELCOM 2010, BALTHAZAR project 2009-2010: Reducing risks of hazardous wastes in Russia

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

List of Facilities

3. List of Facilities

The list of selected facilities consists of 27 companies in the countries listed in the below table.

Country	Incineration	Oily waste treatment
Finland	1	2
Sweden	1	2
Norway	1	2
Denmark	1	2
Estonia	2	1
Latvia	1	1
Lithuania	-	3
Poland	1	2
Russia	-	1
Germany	2	1
TOTAL	10	17

Table 1. Number and type of facilities in the countries included in the study.

The information about the facilities is shown in the alphabetical order by country and facility. A short description about each facility and their services regarding the treatment of organic waste is given. A table containing relevant information about the facilities follows the general description.

The original target of presenting three cases from each country could not be fulfilled in the case of Russia and Latvia because of difficulties in acquiring plant specific data of facilities relevant to the study.

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Denmark Kommunekemi A/S

3.1 Denmark

Kommunekemi A/S

In Kommunekemi organic hazardous waste is incinerated. The incineration takes place in three rotary kilns where the hazardous substances are decomposed and transformed into a form that is environmentally neutral. The hazardous waste is incinerated at app. 1.200°C.

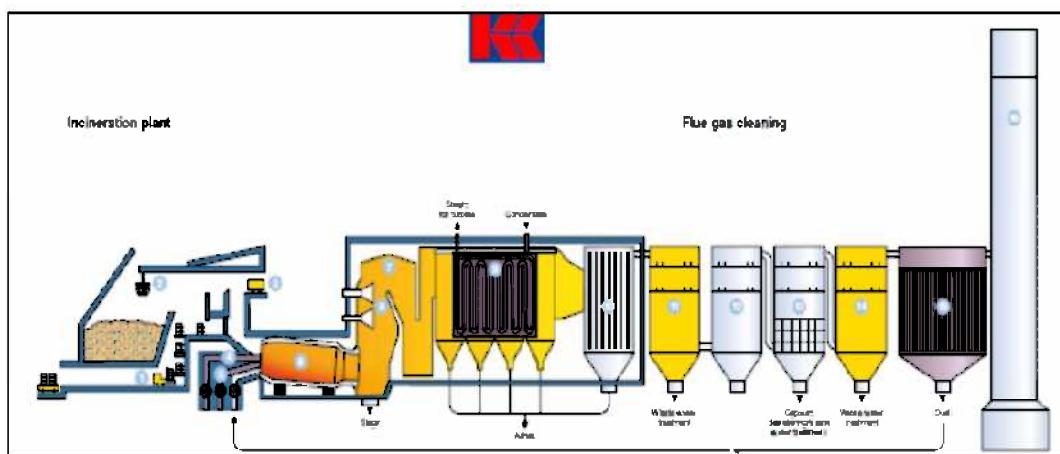
Kommunekemi's incineration lines are operated 24 hours a day all year round. They are monitored from a high-tech distributed control system (DCS) - monitoring app. 25,000 measurement points.

Country	Denmark
Name of facility	Kommunekemi A/S
Ownership	Kommunekemi is owned by the Nordic capital fund EQT Infrastructure
Contact information	CEO: Carsten Fich Email: kk@kommunekemi.dk Web-site: www.kommunekemi.dk Address: Lindholmvej 3 DK-5800 Nyborg Denmark Tel: +45 6331 7100, Fax: +45 6331 7300
Technology	
Method of treatment	High temperature incineration, waste oil treatment and recycling
Capacity	200,000 tonnes/year
Energy production	Steam turbines 3,8 MW and 12,5 MW. Net energy production in the year 2006 was ca. 200,000 MWh
Information about the license/permit	
The licensing authority	Danish Ministry of the Environment, Environment Centre Odense
The controlling authority	Danish Environmental Protection Agency, Nyborg Municipality
Permit number	J.nr. ODE-431- 00033, Date 27.11.2009, announced 1.12.2009
Permit validity	To be revised within 10years (2019)
Acceptable waste types	Hazardous and industrial waste with some exceptions
Waste restrictions	No explosives or radioactive waste
Restrictions for importing waste from other countries	In accordance with the EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Requirements on delivery and reception of waste	A declaration of waste obligatory prior to the arrival at the gate
Control of emissions	In accordance with the EU Directive 2000/76/EC on the incineration of waste and Statutory Order of Denmark no. 162 of 11 March 2003 on waste incineration plants
Control of water discharges	Water discharges from air emission control systems In accordance with the EU Directive 2000/76/EC on the incineration of waste and Statutory Order of Denmark no. 162 of 11 March 2003 on waste incineration plants
Residues	Slag from incineration plants: approx. 15,000 tonnes/year Ash from incineration plants: approx. 7,000 tonnes Filter cakes from inorganic systems, filter cakes from flue gas cleaning and gypsum from flue gas cleaning: approx. 7,000 tonnes Contaminated soil and other debris around 2,000 tonnes

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

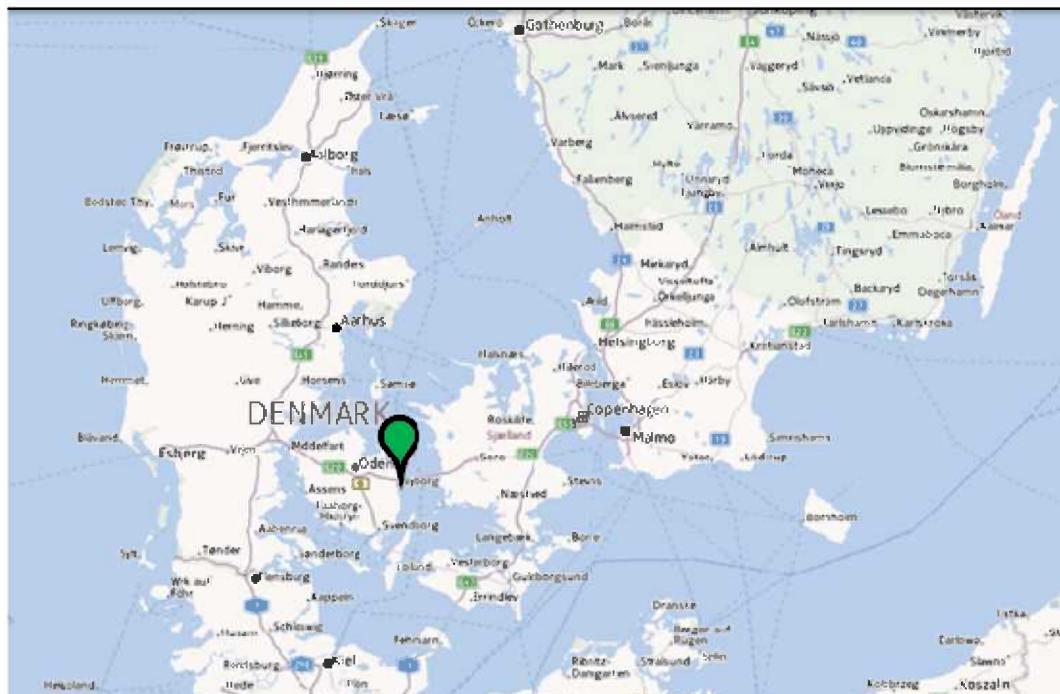
Denmark Kommunekemi A/S

Control, monitoring and reporting	Continuous monitoring of critical parameters, detailed record of incoming waste and producers, any irregularities in operation etc. An annual report to the Authority containing information on operating hours, treated waste quantity, amount and type of the resulting slag and residual products, calculation of total emissions. The annual report can be replaced by the company's green accounting / EMAS statement.
Treatment cost/gate fee for hazardous waste	Kommunekemi does not have an official standard price list, the Customer Service will give prices for specific waste types, upon request.



A process chart about the destruction of organic hazardous waste

Source: www.kommunekemi.dk => www.nordgroup.eu



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Denmark Dansk Olie Genbrug A/S

Dansk Olie Genbrug A/S

Dansk Olie Genbrug A/S collects waste oil and oily wastes and has two main processes: Waste oil having high contents of lubricating base oil is reprocessed so that the base oil can be reused. Oily water containing waste is cleaned and used mainly for energy production.

Country	Denmark
Name of facility	Dansk Olie Genbrug A/S
Ownership	Dansk Olie Genbrug is 100% owned by Avista Dollbergen GmbH
Contact information	CEO: Jan Glerup Email: JG@oliegenbrug.dk Web-site: www.Oliegenbrug.dk Address: Juelsmindevej 18, 4400 Kalundborg Tel/Fax: 004559565644/004559565688
Technology	
Method of treatment	R9 (Oil refining or other reuses of oil). Reuse: Used lubricating oils, such as engine, transmission and hydraulics oils, as well as hot transmission and insulation oil contain large amounts of base oil, which is cleaned so that it can be re-used for production of lubricating oil. Energy production: Water and oil is separated, the oil is cleared of sludge and can be sold as a heating fuel product for heavy industry.
Capacity	60000 tonnes/year
Energy production	Information not available
Information about the license/permit	
The licensing authority	Kalundborg Kommune
The controlling authority	Kalundborg Kommune
Permit number	8-76-11-323-1008-1996, 326-2007-31642, 2007-004053
Permit validity	Information not available
Acceptable waste types	Dansk Olie Genbrug collects all types of waste oil, be it mineral or synthetic, pure or emulsified in water, as long as it can be pumped.
Waste restrictions	Chlorinated waste oil cannot be processed.
Restrictions for importing waste from other countries	In accordance with the EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Requirements on delivery and reception of waste	Information not available
Control of emissions	No waste incineration.
Control of water discharges	Controlled in accordance with the above mentioned permits issued by Kalundborg Kommune.
Residues	Oily waste (160708*)
Control, monitoring and reporting	Own laboratory
Treatment cost/gate fee for hazardous waste	The oil price is determined by daily market. Usually the company buys the waste oil suitable for re-refining

Source: Dansk Olie Genbrug A/S, www.oliegenbrug.dk

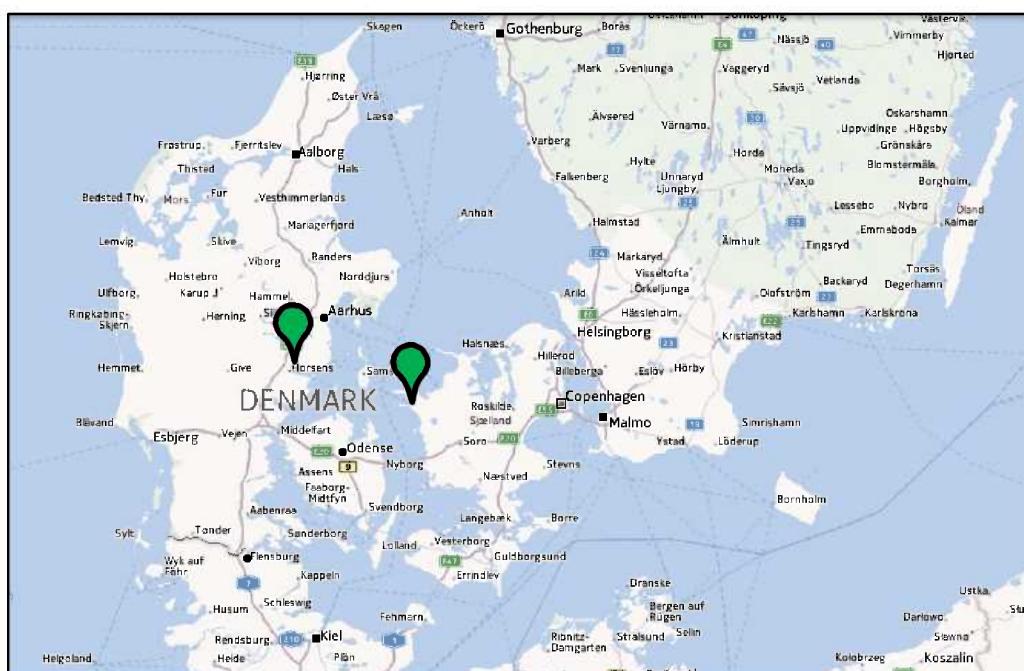
HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Denmark Dansk Olie Genbrug A/S



Dansk Olie Genbrug A/S

Source: www.oliegenbrug.dk



HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Denmark Jysk Miljørens A/S

Jysk Miljørens A/S

Jysk Miljørens A/S receives oily waste and purifies it either for energy production or for reuse.

Country	Denmark
Name of facility	Jysk Miljørens A/S
Ownership	Gunnar Lund Olieservice A/S (parent company)
Contact information	CEO Email: mail@jyskmiljorens.dk Web-site: www.jyskmiljorens.dk Address: Oliehavnsvej 18 8000 Aarhus C Tel: +45 86945555, Fax: +45 86945156
Technology	
Method of treatment	Waste oil collection and treatment by purification for energy production or for reuse
Capacity	60-80.000 tonnes/year
Energy production	Surplus of energy is led to the municipality of Aarhus in form of heat.
Information about the license/permit	
The licensing authority	Fredericia Kommune, Århus Amt
The controlling authority	Fredericia Kommune, Århus Amt, Natur- og miljøkontoret
Permit number	Fredericia 04-11-2010 Sags id.: 10/3118, Århus 8-76-1-751-51-04/K1c-P51-2
Permit validity	8 years
Acceptable waste types	Slop oil, oil-water mixtures
Waste restrictions	Only oil based waste will be accepted
Restrictions for importing waste from other countries	In accordance with the EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Requirements on delivery and reception of waste	Quality and origin of waste, producer to be declared
Control of emissions	In accordance with the above mentioned permits given by Fredericia Kommune and Århus Amt.
Control of water discharges	In accordance with the above mentioned permits given by Fredericia Kommune and Århus Amt.
Residues	Oil containing sludge 3000 tonnes/year Solid waste 200 " Cooling liquid slum 200 " Developer 3000 " Filter dust from bag filter 2,5 " Used washing water from flue gas cleaner 420 "
Control, monitoring and reporting	Reporting once a year to the controlling authority about received waste and their origin and produced amounts of recycled products. Report shall contain amounts of waste produced in the facility.
Treatment cost/gate fee for hazardous waste	Range 730-3900 Dkr/ton (ca. 100-525 €/ton) (oily waste – non-pumpable oil sludge)

Source: www.jyskmiljorens.dk

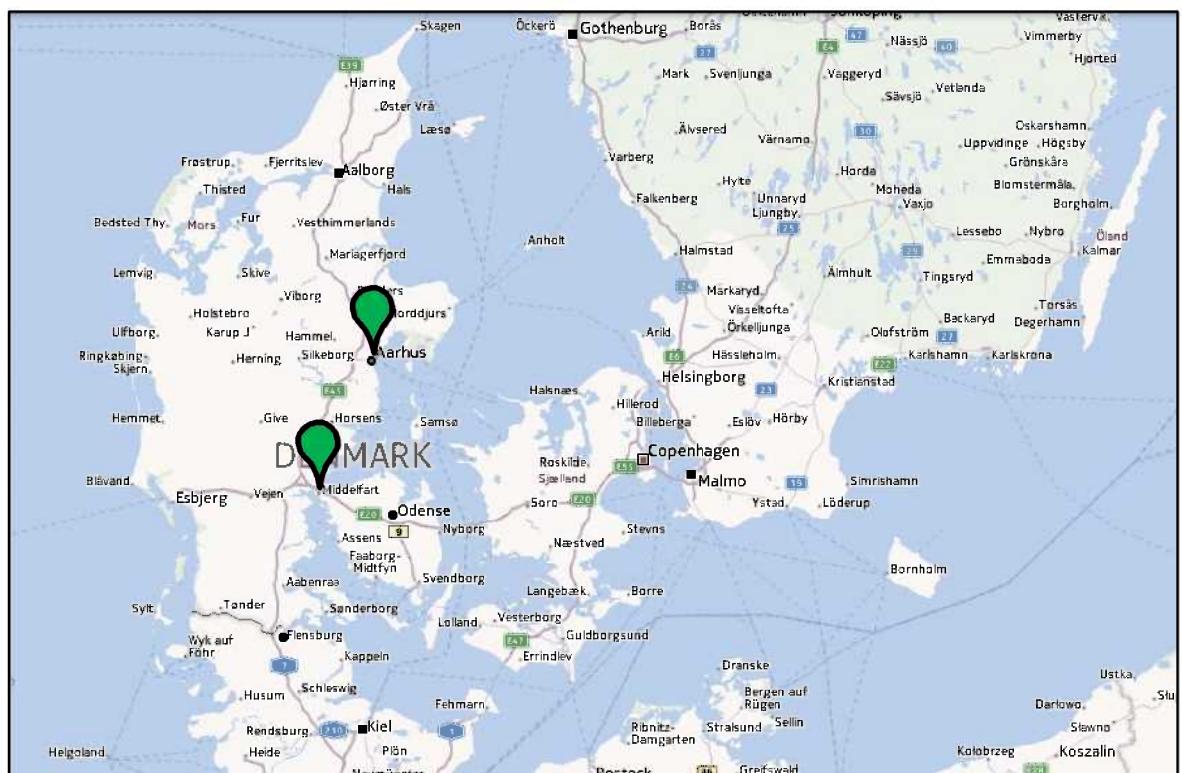
HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Denmark Jysk Miljørens A/S



Jysk Miljørens A/S

Source: www.jyskmiljorens.dk



The locations of the facilities (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Estonia - AS Epler & Lorenz Ohtlike Jäätmete Käitluskeskus

3.2 Estonia

AS Epler & Lorenz Ohtlike Jäätmete Käitluskeskus

AS Epler & Lorenz has a small incinerator for hazardous organic waste.

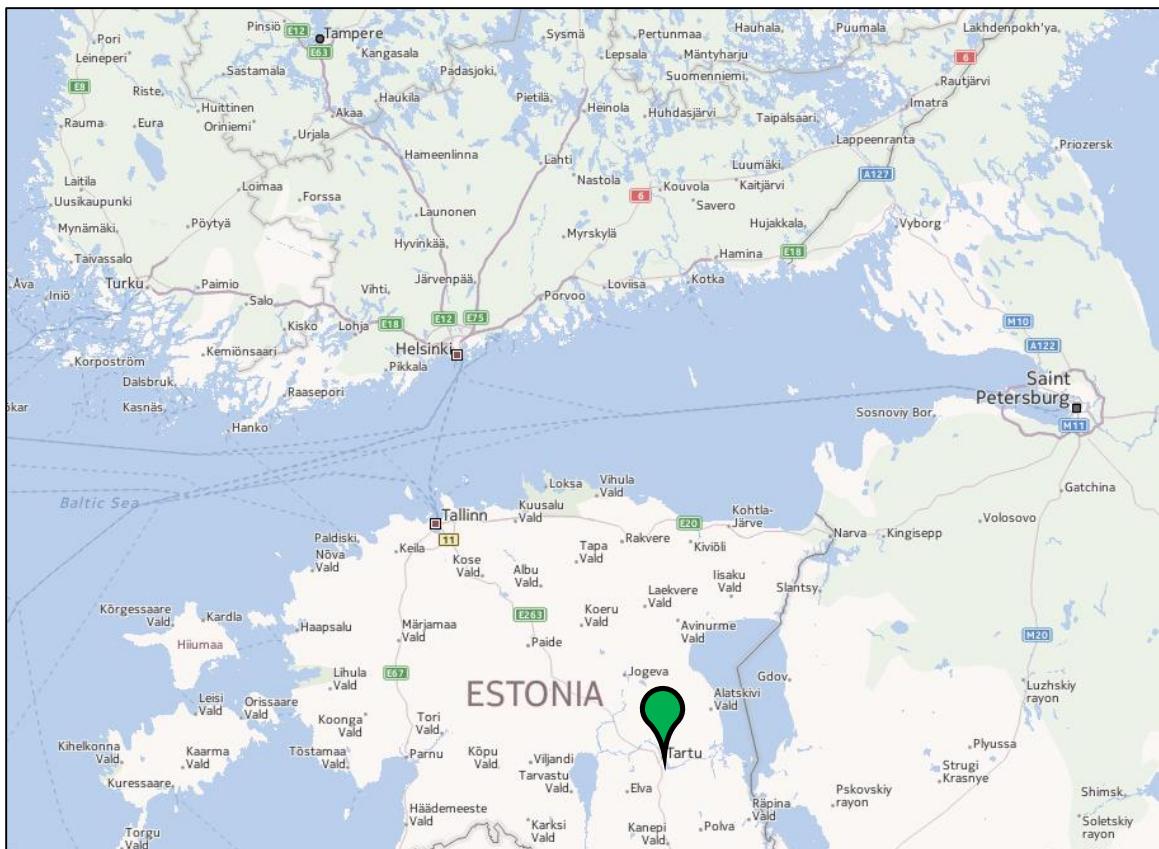
Country	Estonia
Name of Structure	AS Epler & Lorenz Ohtlike Jäätmete Käitluskeskus
Owner	AS Epler & Lorenz
Contact details	Executive director Janis Lorenz E-mail janis@epler-lorenz.ee Web site www.epler-lorenz.ee Address Ravila 75a, 51014 Tartu Phone/fax + 372 742 1398
Technology	
Treatment method	Incineration in waste incineration factory
Capacity	2000 tonnes/year
Energy production	For own use
Information about the license/permit	
Organization that issued the license	Environmental Board of Estonia
Inspecting organization	Environmental Inspectorate of Estonia
Number of the permit	Treatment license of dangerous substances no. 0280; combined environmental permit no. L.KKL.TM-148476
Validity period of the permit	June 9, 2016
Waste types to be treated	E.g. medical waste, pesticides, medicines, chemicals, waste containing PCBs, oils, paints etc.
Waste restrictions	No explosives or radioactive waste
Limitations set out for the import of waste from other countries	In accordance with the EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Conditions to be applied for the transport and transfer of waste	In accordance with the legislative acts regulating the waste treatment (Waste Act, Regulation no 66 from June 4, 2004 „The conditions for foundation, usage and closing of waste incineration factories“ issued by the Ministry of the Environment, EU directive 2000/76/EC etc.) and conditions set out in the company.
Control of emissions	The marginal rates are shown in the combined environmental permit (available at http://klis2.envir.ee/); the basis for the application is the regulation no. 66 from June 4, 2004 issued by the Ministry of the Environment and the EU directive 2000/76/EC.
Control of water discharges	No waste water is formed during incineration

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Estonia - AS Epler & Lorenz Ohtlike Jäätmekeskus

Residues	Bottom ash, fly ash, used activated charcoal
Verification, inspection, reporting	In accordance with the issued licenses and permits.
Treatment cost/gate fee for hazardous waste	Treatment prices are given only for actual deliveries of waste. No public price list.

Source: AS Epler & Lorenz Ohtlike Jäätmekeskus, www.epler-lorenz.ee



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Estonia EcoPro AS

EcoPro AS

EcoPro AS collects oil waste, solvents and other organic waste. The main treatment process for organic waste is oil purification for energy production.

Country	Estonia
Name of facility	EcoPro AS
Ownership	Private ownership
Contact information	Email: ecopro@ecopro.ee Web-site: www.ecopro.ee Address: Pärnu mnt 141, 11314 Tallinn Tel: +372 6604762 Fax: +372 6604763
Technology	
Method of treatment	Collection and treatment of waste oil by purification for energy use, collection of hazardous organic waste
Capacity	5000 tonnes/year
Energy production	Information not available
Information about the license/permit	
The licensing authority	Environmental board of Estonia
The controlling authority	Environmental Inspectorate of Estonia
Permit number	HJR 8-3/8473, 21.01.2010
Permit validity	16.03.2010 – 02.06.2014
Acceptable waste types	According to the List of Waste (EWC) with some exceptions
Waste restrictions	No explosives, radioactive waste, infectious or highly reactive waste
Restrictions for importing waste from other countries	In accordance with the EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Requirements on delivery and reception of waste	Waste accepted only against a signed approval document
Control of emissions	Information not available
Control of water discharges	Information not available
Residues	Information not available
Control, monitoring and reporting	Annual reporting to the Environmental Inspectorate about the received and treated quantities
Treatment cost/gate fee for hazardous waste	Price examples (1.2.2012): Waste oil in bulk 28 €/ton Tank bottom sludge 373 €/ton

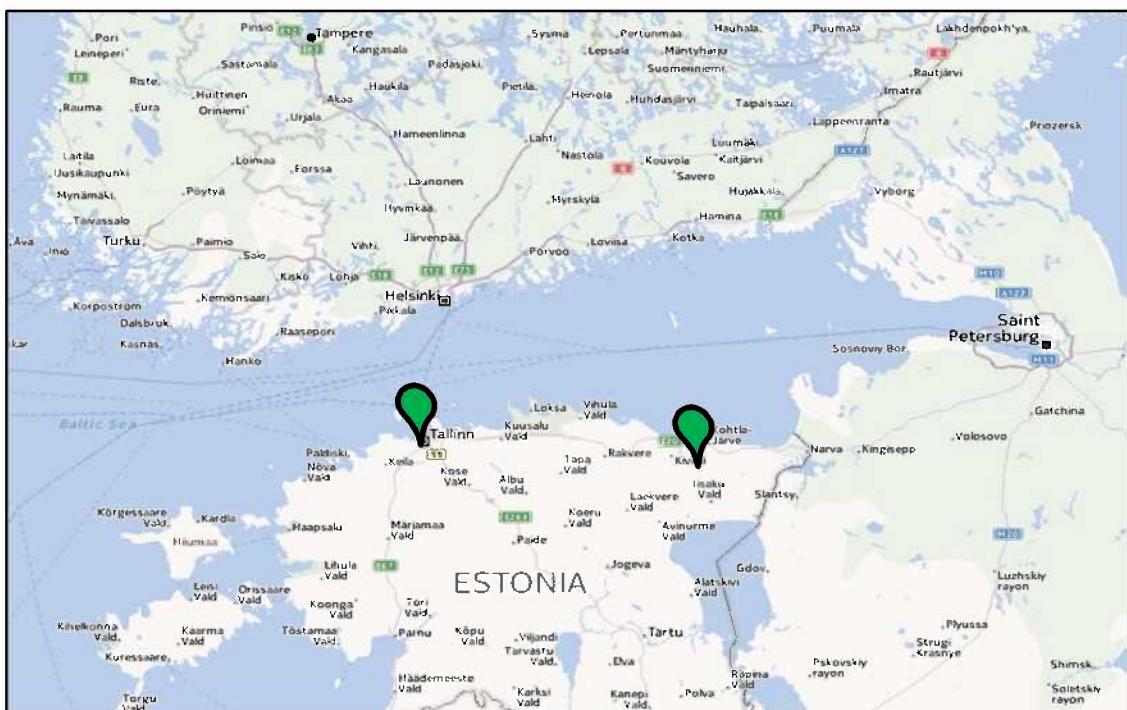
HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Estonia EcoPro AS



EcoPro AS

Source: www.ecopro.ee, <http://klis.envir.ee/klis>



The locations of the facilities (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Estonia AS Kunda Nordic Tsement

AS Kunda Nordic Tsement

AS Kunda Nordic Tsement uses organic waste, including hazardous waste for its energy source in cement production.

Country	Estonia
Name of facility	AS Kunda Nordic Tsement
Ownership	The owners of AS Kunda Nordic Tsement are Heidelberg Cement Sweden AB (Sweden), who holds 75% of the shares and CRH Europe Holding BV (the Netherlands), who holds 25% of the shares.
Contact information	Email: knc@knc.ee Web-site: www.heidelbergcement.com/ee Address: Jaama 2 44106 Kunda Tel: +372 32 29 900 Fax: +372 32 21 546
Technology	
Method of treatment	Incineration of waste oil and various organic hazardous waste
Capacity	Information not available
Energy production	Information not available
Information about the license/permit	
The licensing authority	Environmental Board
The controlling authority	Environmental Inspectorate
Permit number	01.07.2011 V 8-4/11/22596-1
Permit validity	04.01.2012 – 03.01.2017
Acceptable waste types	Organic hazardous and non-hazardous waste with some restrictions
Waste restrictions	No explosives or radioactive waste. Halogen concentration restricted
Restrictions for importing waste from other countries	In accordance with the EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Requirements on delivery and reception of waste	Waste has to be declared prior to reception
Control of emissions	Control of emissions is based on the Estonian Regulation no. 66 from June 4, 2004 issued by the Ministry of the Environment and the EU directive 2000/76/EC.
Control of water discharges	Waste water discharge from flue gas cleaning is controlled by the Estonian Regulation no. 66 from June 4, 2004 issued by the Ministry of the Environment and the EU directive 2000/76/EC.
Residues	Information not available
Control, monitoring and reporting	Information not available
Treatment cost/gate fee for hazardous waste	Information not available

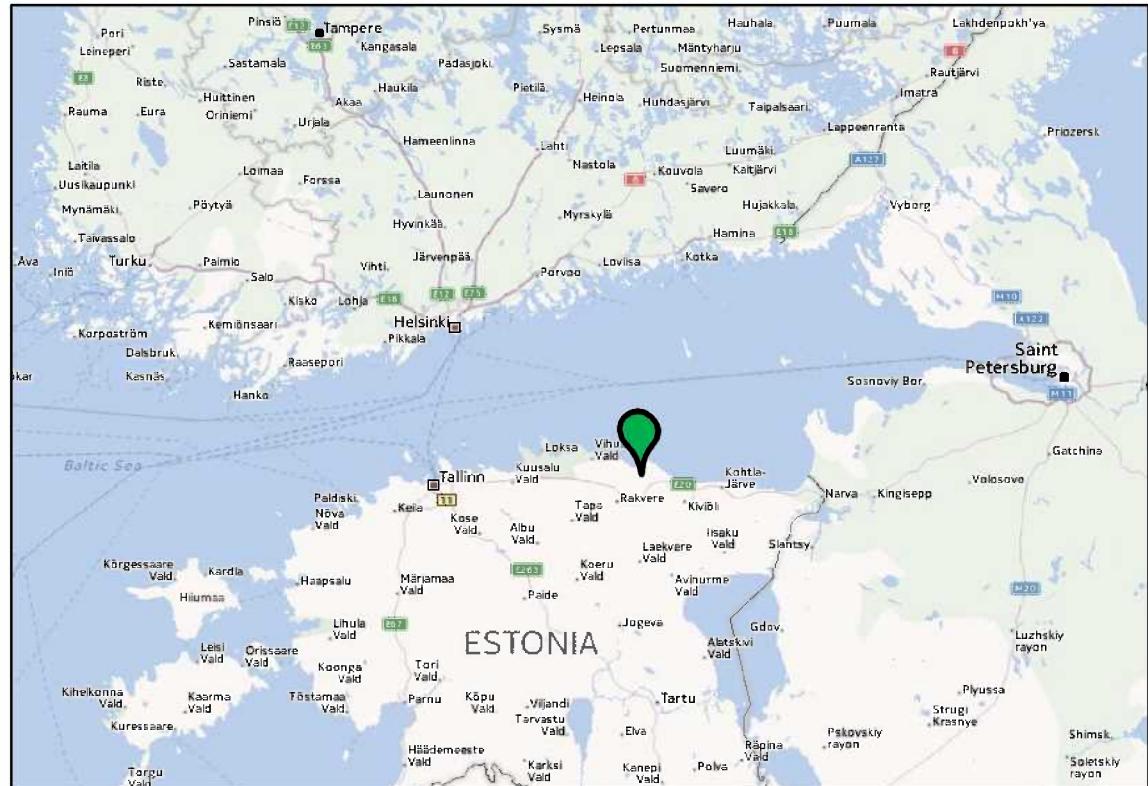
HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Estonia AS Kunda Nordic Tsement



AS Kunda Nordic Tsement

Source: www.heidelbergcement.com/ee, <http://klis.envir.ee/klis>



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Finland Ekokem Oy Ab

3.3 Finland

Ekokem Oy Ab

Ekokem Oy Ab has two dedicated high temperature rotary kiln incinerators for final disposal of organic hazardous waste. Heat is recovered in the steam boiler, while the slag produced by the process can be used in landscaping or soil construction works. Heat from the incineration process is recovered for use as electricity and district heating.

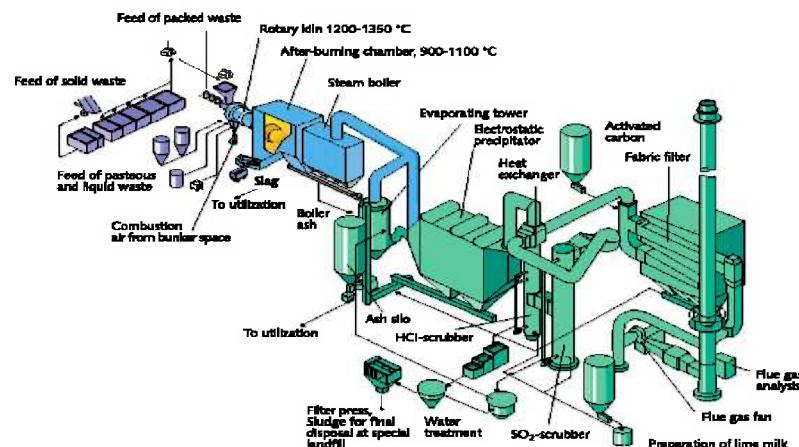
Country	Finland
Name of facility	Ekokem Oy Ab
Ownership	State of Finland 34,1%, Municipalities and their organisations 32,1 %, enterprises 33,8%
Contact information	CEO Timo Piekkari Email firstname.lastname@ekokem.fi , info@ekokem.fi Web-site www.ekokem.fi Address Kuulojankatu 1, 11120 Riihimäki, Finland
Technology	
Method of treatment	High temperature incineration using rotary kiln technology. Ekokem has currently two high temperature incineration lines in operation. In addition, Ekokem has a waste-to-energy plant.
Capacity	The capacity for organic hazardous waste altogether is 166 000 tonnes/year or ca. 550 tonnes/day. (average operating hours 7000/year)
Energy production	465 GWh (2011). Used partly as district heat to neighbouring towns Riihimäki and Hyvinkää.
Information about the license/permit	
The licensing authority	The Regional State Administrative Agency of the Southern Finland.
The controlling authority	The Centre for Economic Development, Transport and the Environment of Häme.
Permit number	YSO/119/2007, Dnro HAM-2004-Y-443-111, 31.10.2007
Permit validity	Until further notice
Acceptable waste types	In general all type of organic hazardous waste can be accepted
Waste restrictions	Radioactive waste and explosives are forbidden to be received.
Restrictions for importing waste from other countries	Import of hazardous waste is allowed by Finnish legislation and Ekokem has no restrictions for import with the exception of radioactive and explosive wastes mentioned above.
Requirements on delivery and reception of waste	All waste has to be declared in advance. The facility will not receive any waste loads without a preliminary declaration procedure and registration.
Control of emissions	Air emissions are controlled in accordance with the Government Decree No. 151/2013 on waste incineration and EU Directive No. 2000/76/EC on incineration of waste.
Control of water discharges	Waste water discharges from waste incineration flue gas cleaning are controlled in accordance with the Government Decree No. 151/2013 on waste incineration and EU Directive No. 2000/76/EC on incineration of waste.
Residues	Slag from incineration is reused in landfill construction and road construction etc. Fly ash is stored in hazardous waste landfills in accordance with the EU landfill directive nr. 1999/31/EC.

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Finland Ekokem Oy Ab

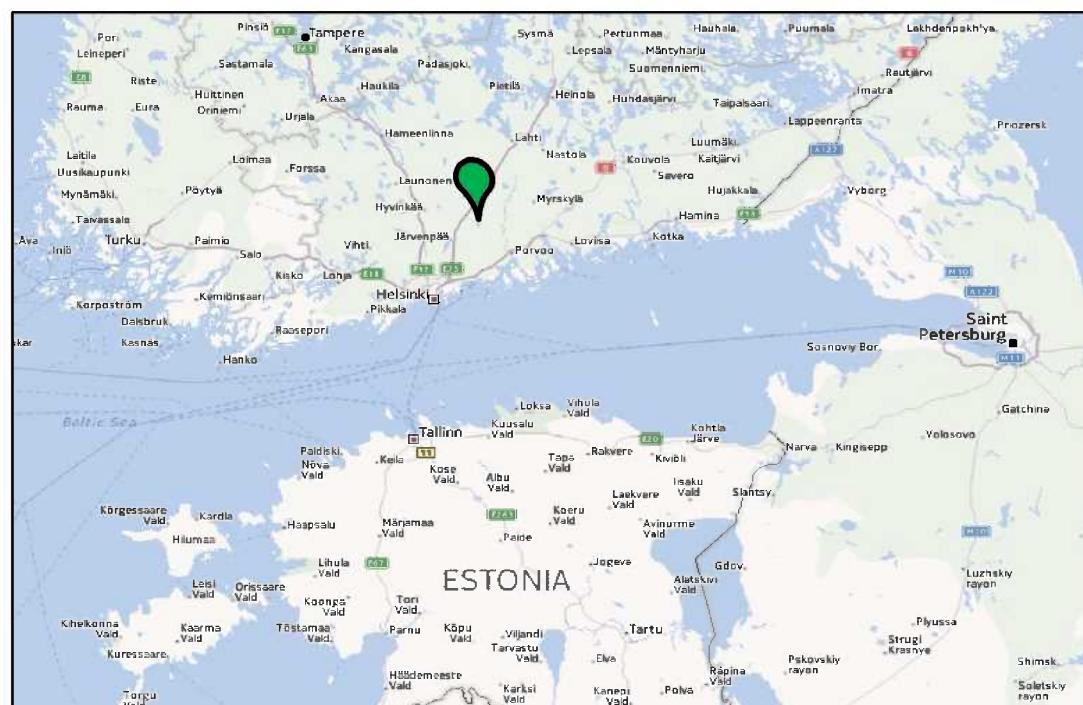
Control, monitoring and reporting	Ekokem carries out continuous monitoring of air emissions and monitoring of water discharge. The controlling authority will have its own tests occasionally. Ekokem reports to the controlling authority on monthly basis.
Treatment cost/gate fee for hazardous waste	Ekokem will not publish a general price list. All pricing is based on a request for the treatment of a certain waste type and amount.

Source: Ekokem Oy Ab, <http://www.finlex.fi>



Principle of the Ekokem high temperature incineration process

Source: Ekokem Oy Ab



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Finland Lassila & Tikanoja Oyj

Lassila & Tikanoja Oyj

The company collects waste oil and purifies it for energy use.

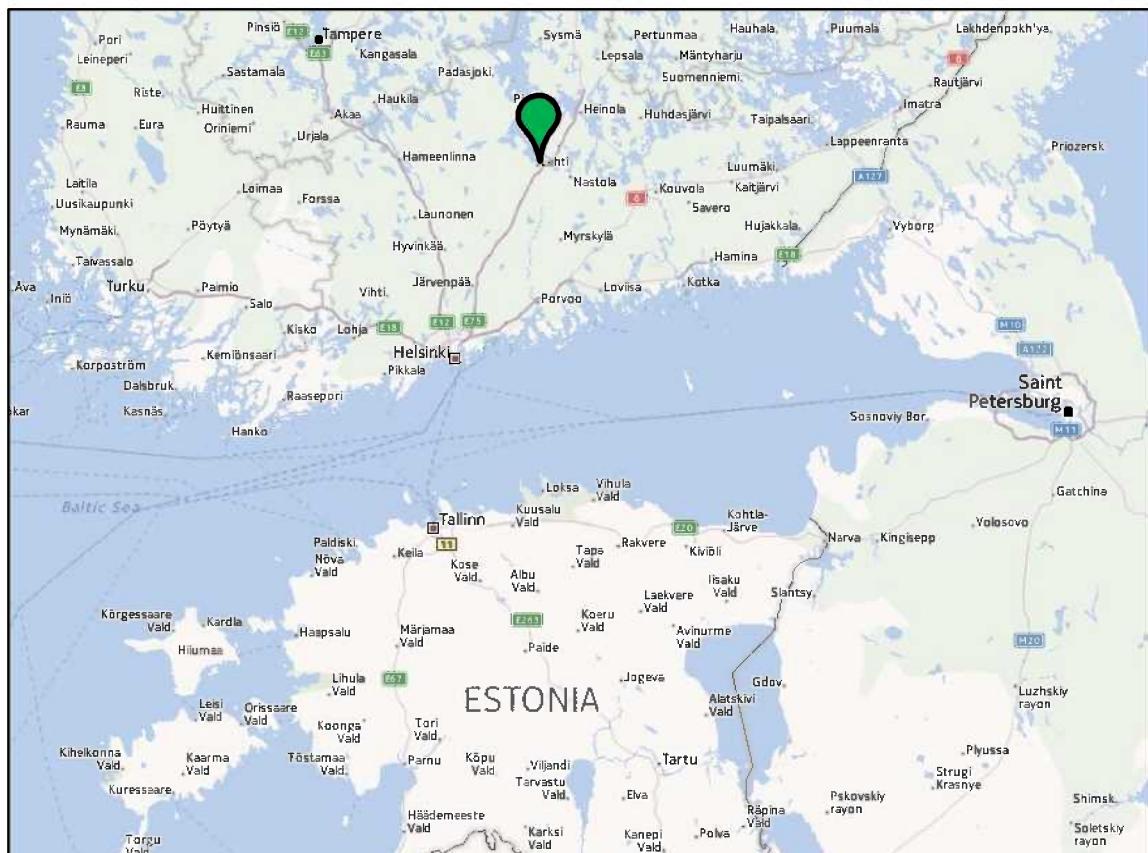
Country	Finland
Name of facility	Lassila & Tikanoja Oyj
Ownership	Company listed in NASDAQ OMX Helsinki stock exchange. The biggest single stock holder owns about 6%.
Contact information	Email: info@lassila-tikanoja.fi Web-site: www.lassila-tikanoja.fi Address: Viilaajankatu 6, 15520 Lahti Tel: +358 10 636 111 Fax: +358 10 636 2800
Technology	
Method of treatment	Purification of waste oil and recycling
Capacity	17,000 tonnes/year
Energy production	No energy production
Information about the license/permit	
The licensing authority	Regional State Administrative Agency, Southern Finland Office
The controlling authority	Centre for Economic Development, Transport and the Environment, Kanta-Häme and Päijät-Häme Regional Agency
Permit number	Dnro HAM-2003-Y-446-111, Nro YLO/lup/7/05, 17.1.2005
Permit validity	A new application to be made until 1.12.2012
Acceptable waste types	Waste oil, oily waste
Waste restrictions	PCB less than 10 mg/kg in incoming waste
Restrictions for importing waste from other countries	Import of hazardous waste is allowed by the Finnish legislation with some exceptions (e.g. radioactive waste)
Requirements on delivery and reception of waste	Before delivery a description of waste including the amount of waste and packages (form and size)
Control of emissions	Environment Protection Act No. 4.2.2000/86, Environment Protection Decree No. 18.2.2000/169
Control of water discharges	Environment Protection Act No. 4.2.2000/86, Environment Protection Decree No. 18.2.2000/169, Government Resolution No.365/1994)
Residues	Waste that can be reused as material is not permitted to be sent for energy production. Hazardous residues and waste not permitted to be treated at the plant have to be delivered to a facility which has a permission to incinerate or otherwise treat such material

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Finland Lassila & Tikanoja Oyj

Control, monitoring and reporting	A control and monitoring plan has been made and approved. Surface waters to be controlled minimum of twice a year by special permission of the controlling authority (nominal frequency 4 times a year) At least the following components to be analysed from surface waters by an independent laboratory: pH, conductivity, temperature, visual appearance, odour, mineral oil, copper, nickel, lead, chrome, mercury, arsenic, cadmium, tin. Ground water control twice a year from a control well installed downstream from the facility. Odours, performance and efficiency of the odour removal equipment to be controlled according to the approved plan.
Treatment cost/gate fee for hazardous waste	L & T does not publish a general price list. All pricing is based on a request for the treatment of a certain waste type and amount.

Source: www.lassila-tikanoja.fi, <http://www.avi.fi/fi/ymparistoluvat/Sivut/default.aspx>



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Finland L&T Recoil Oy

L&T Recoil Oy

The company collects waste engine oil and it has a re-refining facility to make base oil for lubricants.

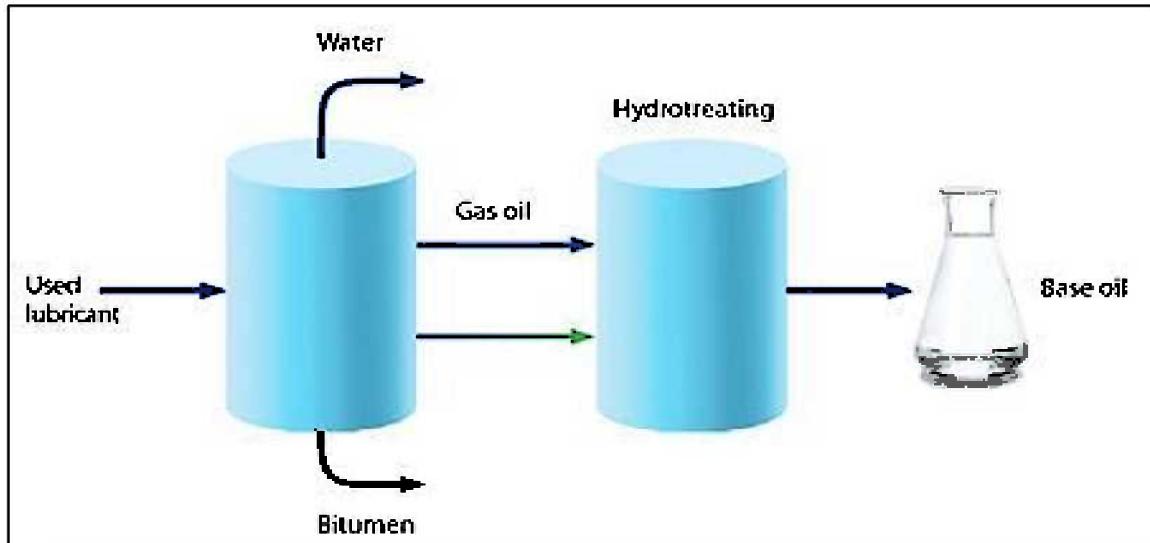
Country	Finland
Name of facility	L&T Recoil Oy
Ownership	EcoStream Oy
Contact information	Email: juha.kokko@lt-recoil.fi Web-site: www.lt-recoil.com Address: Paksumiestie 15-17, FI-49460 Hamina, Finland Tel: +358 5 2353 800 Fax: +358 5 230 2330
Technology	
Method of treatment	Waste oil collection and re-refining of lubricants
Capacity	60,000 tonnes/year
Energy production	For own use, boilers 5,3 + 3,5 MW (nominal)
Information about the license/permit	
The licensing authority	Regional State Administrative Agency, Southern Finland Office
The controlling authority	Centre for Economic Development, Transport and the Environment, Southeast Finland Regional Agency
Permit number	Nro A 1109 Dnro KAS-2007-Y-155-111, date 24.10.2008
Permit validity	Until further notice. An application for an update of the permit to be submitted until 30.11.2016
Acceptable waste types	Waste oil, oil waste from ships and base oil from used lubricants
Waste restrictions	Only oil based waste suitable for regeneration (re-refining)
Restrictions for importing waste from other countries	Import of hazardous waste is allowed by the Finnish legislation with some exceptions (e.g. radioactive waste)
Requirements on delivery and reception of waste	Control of the incoming material and minimization of spillage
Control of emissions	Environment Protection Act No. 4.2.2000/86, Environment Protection Decree No. 18.2.2000/169
Control of water discharges	Environment Protection Act No. 4.2.2000/86, Environment Protection Decree No. 18.2.2000/169, Government Decree 1022/2006
Residues	Waste catalyst 15 tonnes/year Oil/water treatment sludge 100 " " Tank bottom sludge 300 " " Sludge from waste water pre-treatment 200 " " Sludge from process units 100 " "

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Finland L&T Recoil Oy

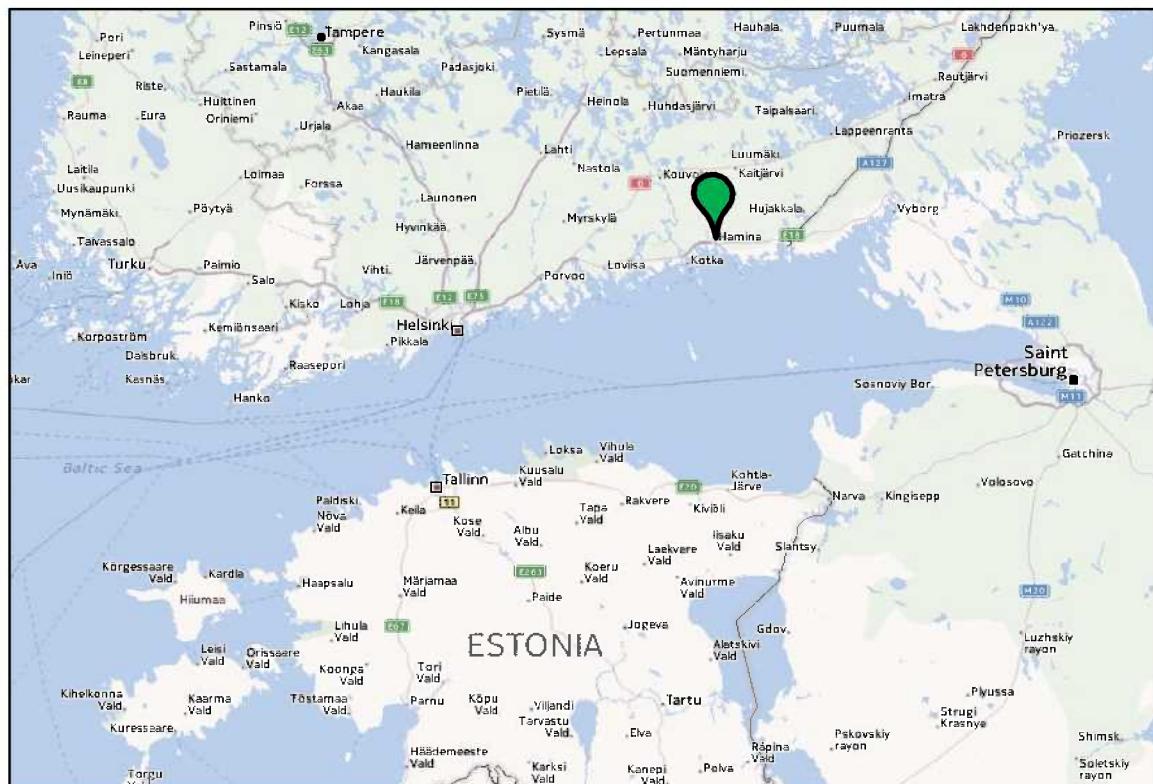
Control, monitoring and reporting	Annual reporting to the controlling authority
Treatment cost/gate fee for hazardous waste	By request depending on the quantity and quality. Normally incoming material need to be purchased.

Source: www.recoil.com, <http://www.avi.fi/fi/ymparistoluvat/Sivut/default.aspx>



Principle of the L&T Recoil process

Source: www.lt-recoil.com



The location of the facility (Base map copyright © 2012 Nokia)

Source: www.lt-recoil.com

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Germany AVG Abfall-Verwertungs-Gesellschaft mbH

3.4 Germany

AVG Abfall-Verwertungs-Gesellschaft mbH

AVG operates two identical high temperature rotary kiln incinerators for hazardous organic waste.

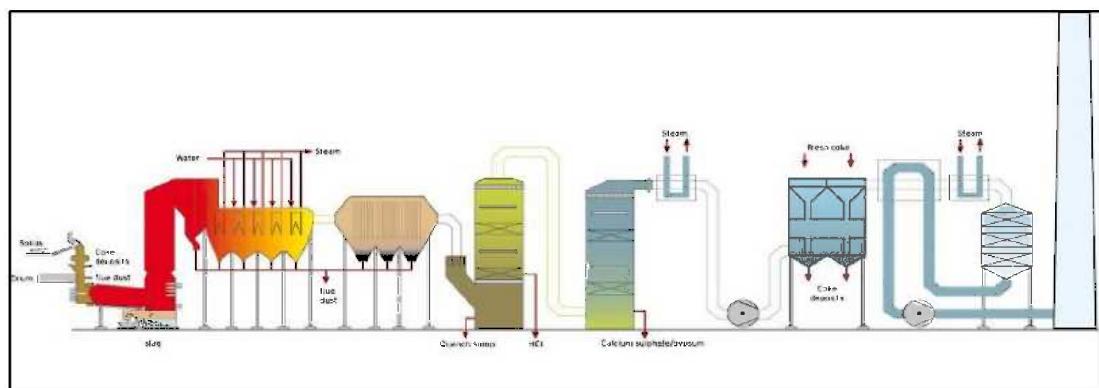
Country	Germany
Name of facility	AVG Abfall-Verwertungs-Gesellschaft mbH
Ownership	Indaver Deutschland GmbH
Contact information	CEO Andreas Ellermann Email andreas.ellermann@indaver.de Web-site www.avg-hamburg.de Address Borsigstrasse 22113 Hamburg Tel/Fax + 49 40 73351 0
Technology	
Method of treatment	Incineration of hazardous waste on land
Capacity	140.000 tonnes/year
Energy production	AVG is connected to Hamburg's district heating network via the neighboring Tiefstack combined power plant. They can supply up to 30,000 households with steam from the incineration process.
Information about the license/permit	
The licensing authority	Behörde für Stadtentwicklung und Umwelt Hamburg Amt für Immissionsschutz und Betriebe Sachgebiet Energie und Abfall (IB 12) Stadthausbrücke 8, 20355 Hamburg
The controlling authority	Behörde für Stadtentwicklung und Umwelt Hamburg Amt für Immissionsschutz und Betriebe Sachgebiet Energie und Abfall (IB 12) Stadthausbrücke 8, 20355 Hamburg
Permit number	See AVG's annex no. 1 – description of permits AVG
Permit validity	No time limitation
Acceptable waste types	AVG disposes of all the combustible materials in the European waste catalogue - in solid, paste or liquid form, loose or in drums.
Waste restrictions	Basically, the following materials shall be excluded from acceptance: explosive substances, bottled gases, radioactive materials, unknown materials, biological and chemical warfare agents
Restrictions for importing waste from other countries	See above. In accordance with EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Requirements on delivery and reception of waste	Detailed instructions in the AVG General Conditions.
Control of emissions	Emission monitoring is performed in accordance with the requirements of the German Federal Immission Legislation (BImSchG). Monitoring parameters are defined by the 17th German Federal Immission Ordinance (17. BImSchV) and are monitored continuously.
Control of water discharges	No water discharges from operating the incineration plant

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Germany AVG Abfall-Verwertungs-Gesellschaft mbH

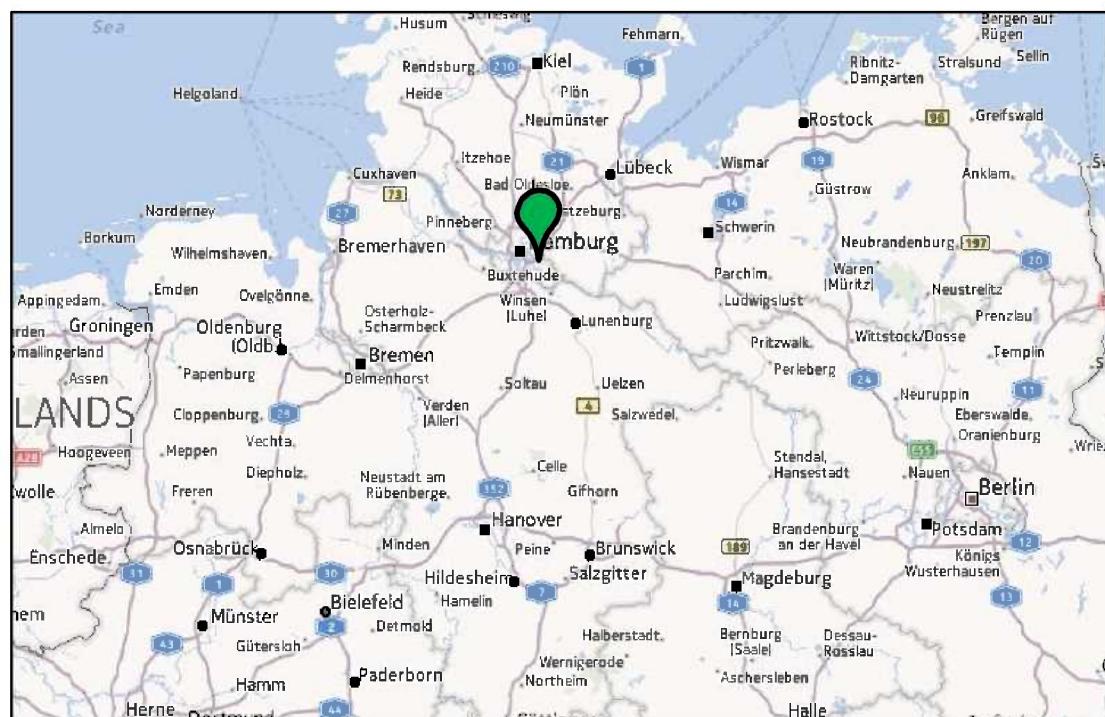
Residues	The resulting incinerator fly ash is disposed of at underground salt mines located in Germany. The incinerator slag is disposed of at German landfills. The gypsum from flue gas cleaning is disposed of at German landfills.
Control, monitoring and reporting	A visual inspection of the delivered waste is performed, data are compared with internal registration and samples for analytical examinations are taken if necessary. The amount of waste delivered is controlled by weighing trucks on entering and leaving the site.
Treatment cost/gate fee for hazardous waste	Price indication (range) – free delivered at plant side Hamburg – Euro 0,-/ton until Euro 900,-/ton; treatment cost on single request

Source: AVG Abfall-Verwertungs-Gesellschaft GmbH



A process chart about the destruction of organic hazardous waste

Source: AVG Abfall-Verwertungs-Gesellschaft GmbH



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Germany - SAVA GmbH & Co. KG

SAVA GmbH & Co. KG

SAVA GmbH & Co. KG operates a high temperature rotary kiln incinerator for the treatment of hazardous organic waste.

Country	Germany
Name of facility	SAVA GmbH & Co. KG
Ownership	REMONDIS Group
Contact information	CEO Dr. Martin Kemmler Email info.sava@remondis.de Web-site http://www.sava-online.com Address Ostertweute 1, 25541 Brunsbüttel, Germany Tel/Fax: Phone: +49(0)4852/8308-0 Fax: +49(0)4852/8308-12
Technology	
Method of treatment	Rotary kiln, flue gas cleaning system
Capacity	35.000 tonnes / year
Energy production	4.5 MW
Information about the license/permit	
The licensing authority	State Agency for Agriculture, Environment and Rural Areas LLUR (Landesamt für Landwirtschaft, Umwelt und ländliche Räume)
The controlling authority	State Agency for Agriculture, Environment and Rural Areas LLUR (Landesamt für Landwirtschaft, Umwelt und ländliche Räume)
Permit number	Not available
Permit validity	Not available
Acceptable waste types	Acceptance catalogue available on the company webpage
Waste restrictions	See above
Restrictions for importing waste from other countries	In accordance with the EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Requirements on delivery and reception of waste	The delivery of waste is based on the General Terms and Conditions of SAVA GmbH & Co. KG (available: http://www.sava-online.com/geschaeftbedingungen/pdf)
Control of emissions	The control of emissions in the air is based on the Federal Law on Protection from Emission (17th BlmSchV) and in the SAVA Planning Resolution (PR), given as average daily values against the actual annual and monthly averages.
Control of water discharges	The control of water discharges from flue gas cleaning in accordance with the EU directive 2000/76/EC.
Residues	Information not available
Control, monitoring and reporting	Regularly
Treatment cost/gate fee for hazardous waste	Price given for individual waste types and amounts case by case

Source: SAVA GmbH & Co. KG, <http://www.sava-online.com>

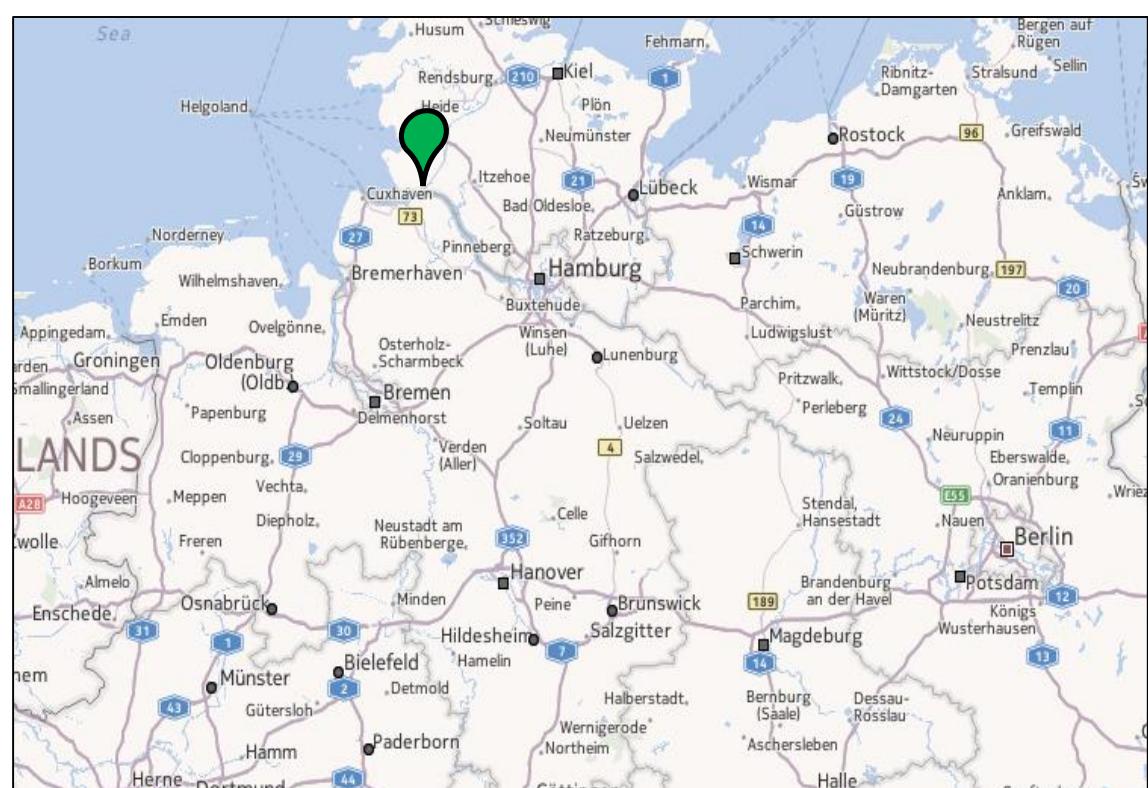
HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Germany - SAVA GmbH & Co. KG



SAVA GmbH & Co. KG

Source: <http://www.sava-online.com>



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Germany - Mineralöl-Raffinerie Dollbergen GmbH

Mineralöl-Raffinerie Dollbergen GmbH

Mineralöl-Raffinerie Dollbergen GmbH's activities are collection of oil, recycling and re-refining of oil, plant engineering and the marketing of oils and lubricants of all types.

Country	Germany
Name of facility	Mineralöl-Raffinerie Dollbergen GmbH
Ownership	Avista Oil AG
Contact information	CEO Bernd Merle Email bernd.merle@avista-oil.com Web-site www.mineralael-raffinerie.de Address Bahnhofstraße 82, 31311 Uetze-Dollbergen Tel/Fax +49 (0)5177 85-0 / +49 (0)5177 85-228
Technology	
Method of treatment	Recycling and refining of waste oil
Capacity	230.000 tonnes/year
Energy production	Not applicable
Information about the license/permit	
The licensing authority	Staatliches Gewerbeaufsichtsamt Hannover
The controlling authority	Staatliches Gewerbeaufsichtsamt Hannover
Permit number	BImSchG 204-40211/27 BimSchG 504a-40500/4/4.4 BimSchG 501.7-40500/4/4.4
Permit validity	Unlimited
Acceptable waste types	The refinery "Mineralöl-Raffinerie Dollbergen GmbH" owns the permissions to accept used oils, in accordance with the Ordinance on Waste oils (Altölverordnung), liquid waste, in accordance with the PCB/PCT Waste Ordinance (PCB/PCT Abfallverordnung), and other liquid waste.
Waste restrictions	Maximum limits are set for PCB and halogens
Restrictions for importing waste from other countries	In accordance with the EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Requirements on delivery and reception of waste	Detailed description of the delivery and reception of waste in the "General Conditions of Sale and Delivery" leaflet available from the company web pages.
Control of emissions	Not applicable
Control of water discharges	Information not available
Residues	Oily waste
Control, monitoring and reporting	Own laboratory
Treatment cost/gate fee for hazardous waste	Not available

Source: Mineralöl-Raffinerie Dollbergen GmbH

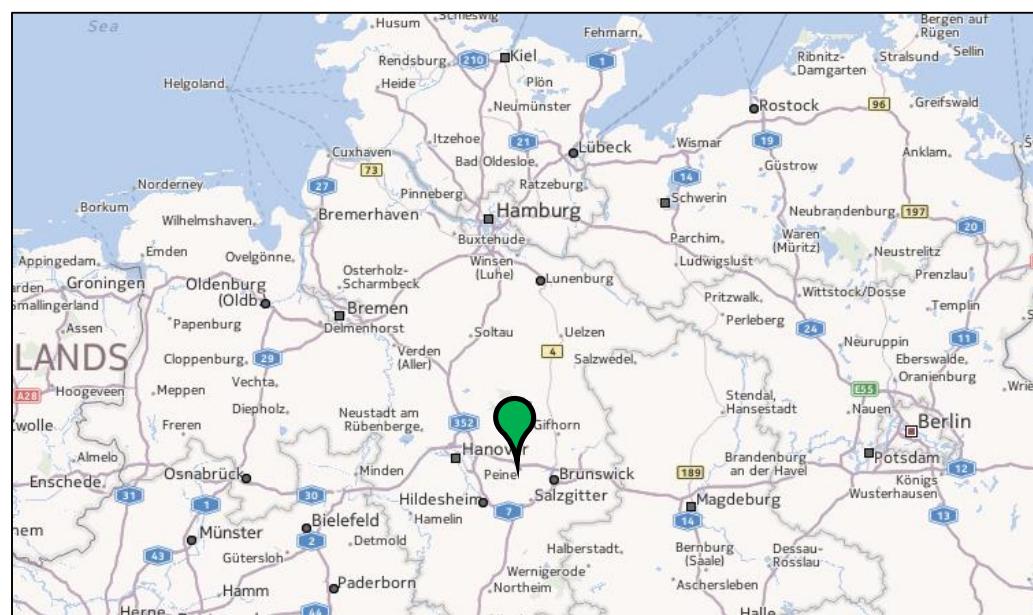
HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Germany - Mineralöl-Raffinerie Dollbergen GmbH



Mineralöl-Raffinerie Dollbergen GmbH

Source: Mineralöl-Raffinerie Dollbergen GmbH



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Latvia - CEMEX Latvija, Brocēnos

3.5 Latvia

CEMEX Latvija, Brocēnos

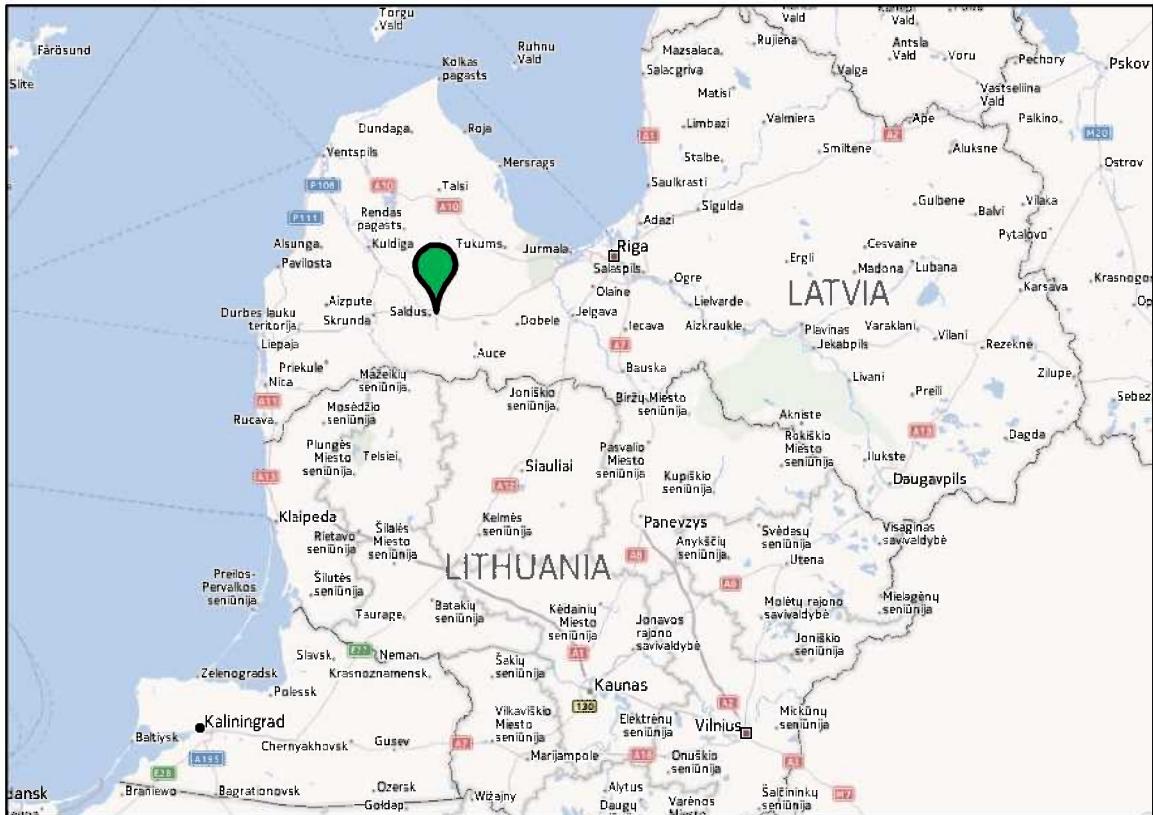
Waste used as alternative fuel for cement kiln operation. High temperature incineration of waste.

Country	Latvia
Name of facility	CEMEX Latvija, Brocēnos
Ownership	CEMEX S.A.B. de C.V, Mexico
Contact information	Email: ilonija.audere@cemex.com , informacija@cemex.com Web-site: www.cemex.lv Address: Rūpīcas iela 10, Brocēni, LV – 3851, Latvia Tel: +37167033500 Fax: +37167033514
Technology	
Method of treatment	Waste used as alternative fuel for cement kiln operation. High temperature incineration of waste
Capacity	The amounts of alternative fuel are not defined in the permit
Energy production	Information not available
Information about the license/permit	
The licensing authority	Riga Regional Environmental Board
The controlling authority	Latvian Environment, Geology and Meteorology Agency
Permit number	Nr. RI 09 IB 0013/20.3.2009
Permit validity	Until 19.3.2014
Acceptable waste types	Information not available
Waste restrictions	Information not available
Restrictions for importing waste from other countries	In accordance with the EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Requirements on delivery and reception of waste	Information not available
Control of emissions	Regarding the air emissions, a reference is given to air quality standards for carbon monoxide, nitrogen dioxide, sulphur dioxide and particulate matter PM10, the CM Regulations No. 588 adopted on 21.10.2003, "Regulations on Air Quality" 1, 2, 3 and Annex 7. In accordance with the EU directive 2000/76/EC.
Control of water discharges	In accordance with the EU directive 2000/76/EC
Residues	Product residues returned to the production: 8500 tonnes/year. Residues not returned to the production ca. 17 tonnes/year.
Control, monitoring and reporting	Annual report each year until 15. of February containing waste amounts and other parameters
Treatment cost/gate fee for hazardous waste	Not available

Source: www.cemex.lv

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Latvia - CEMEX Latvija, Brocēnos



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITES OVERVIEW

Latvia EKO OSTA

EKO OSTA

Eco Osta collects effluents contaminated with oil products and used lubricants/lube oils from ships and other sources. The processes are purification of ballast waters, waters contaminated with oil products, effluents and drainage waters.

Country	Latvia
Name of facility	EKO OSTA
Ownership	Private
Contact information	Email: ekoosta@ekoosta.lv Web-site: www.ekoosta.lv Address: 39 Tvaika Street , Riga, LV-1005, Latvia Tel: +371 67393860 Fax: +371 67393067
Technology	
Method of treatment	Waste oil and oily waste collection, purification and recycling
Capacity	200,000 m ³ /year
Energy production	Two boilers total 1,8 MW, for own processes only
Information about the license/permit	
The licensing authority	Riga Regional Environmental Board
The controlling authority	Latvian Environment, Geology and Meteorology Agency
Permit number	Nr. RI12IA0003/25.06.2012
Permit validity	Seven years
Acceptable waste types	Waste oil, oily water, tank washings and contaminated ballast water from ships
Waste restrictions	Waste is originated from ships and no radioactive or explosives accepted
Restrictions for importing waste from other countries	In accordance with the EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Requirements on delivery and reception of waste	The quality of received waste will be analysed. Parameters depend on the type of waste e.g. for oil contaminated water COD and pH

Control of emissions	Air emission values only for fuel oil use, no waste is burned.
Control of water discharges	Maximum concentrations for a number of parameters are given in the permit Nr. RI12IA0003/25.06.2012 issued by the Riga Regional Environmental Board
Residues	Sludge from water treatment
Control, monitoring and reporting	According to ISO 14001. Environmental Due Diligence Audit (EDD) is carried out annually. Once a year, the emission limit control of compliance for the polluting substances which include instrumental measurements of the emission of sulphur dioxide, particles, carbon dioxide, and nitrogen dioxide, shall be carried out (from the boilers).
Treatment cost/gate fee for hazardous waste	Not available

Source: www.ekoosta.lv

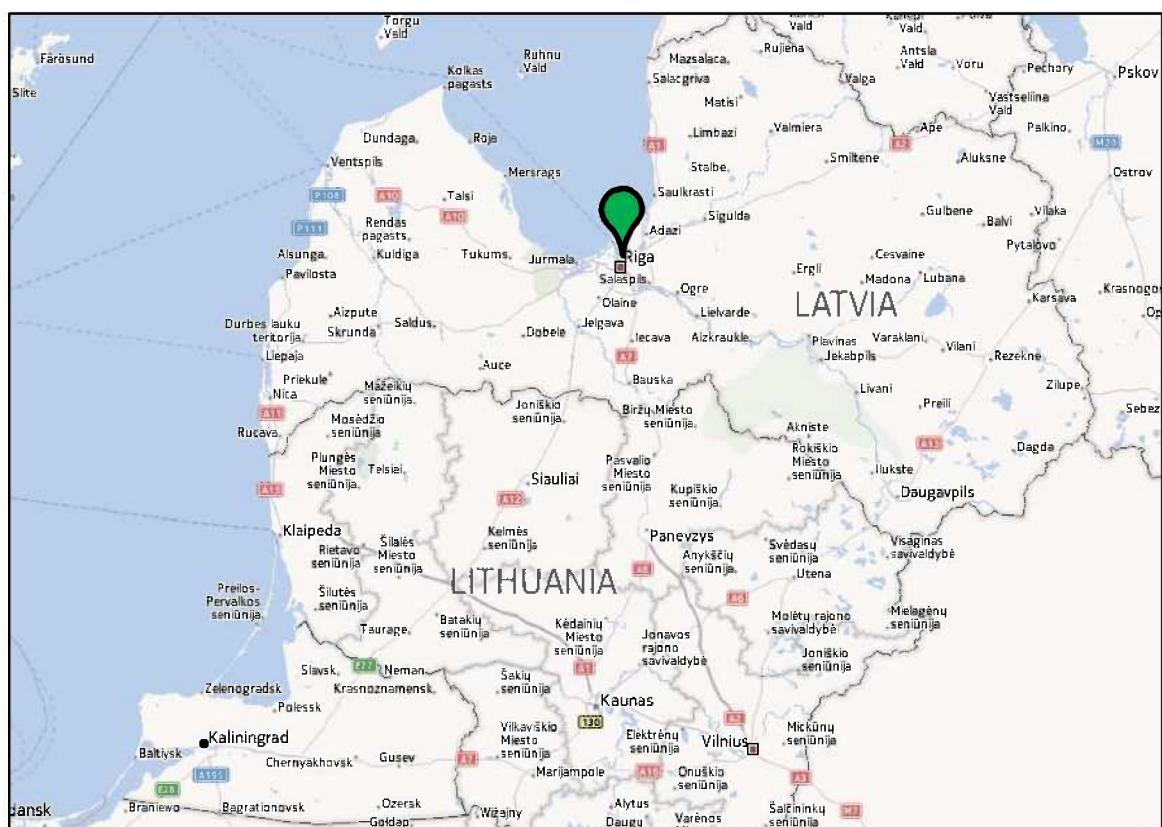
HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Latvia EKO OSTA



EKO OSTA

Source: www.ekoosta.lv



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Lithuania - SC Klaipėdos Nafta

3.6 Lithuania

SC Klaipėdos Nafta

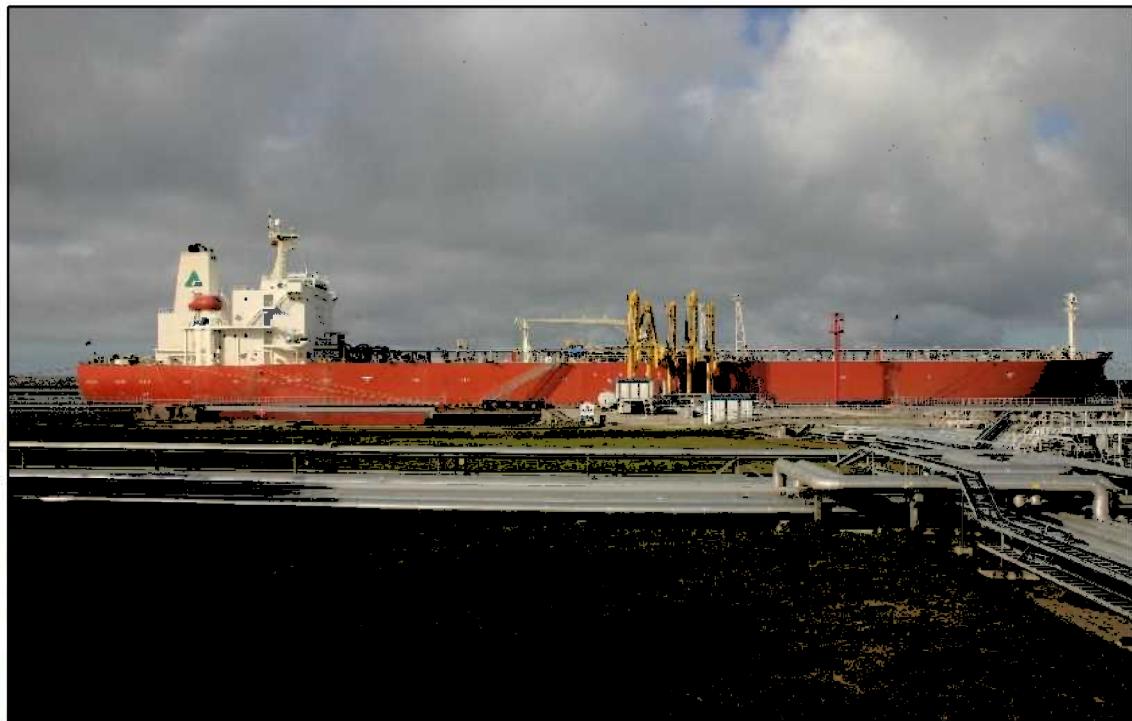
SC Klaipedos Nafta receives and purifies bilge water and other oil containing waste water from ships.

Country	Lithuania
Name of facility	SC Klaipėdos Nafta
Ownership	SC Klaipėdos Nafta
Contact information	Email info@oil.lt Web-site www.oil.lt Address Buriu g. 19, a./d. 81, LT-91003 Klaipėda Tel/Fax Tel.: +37046391772/Fax: +37046311399
Technology	
Method of treatment	Mechanical & biological treatment of water polluted with oil
Capacity	40 m ³ /h
Energy production	Not applicable, the treatment method does not produce energy
Information about the license/permit	
The licensing authority	Klaipeda regional environment protection department of Ministry of Environment
The controlling authority	Klaipeda regional environment protection department of Ministry of Environment
Permit number	(11.2)-30-71/2005
Permit validity	Termless (revision should be made in case of technical changes)
Acceptable waste types	Bilge water (13 04 03*); Waste water polluted with oil products (16 10 01*)
Waste restrictions	Waste water with more than 10000 mg/l of chlorides
Restrictions for importing waste from other countries	In accordance with the EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Requirements on delivery and reception of waste	A single delivery shouldn't be more than 7000 m ³
Control of emissions	Not applicable, no incineration of waste
Control of water discharges	The control of waste water discharges is regulated and carried out by Klaipeda regional environment protection department of Ministry of Environment
Residues	No information available
Control, monitoring and reporting	Laboratory of SC Klaipėdos Nafta controls waste water treatment and makes reports for Klaipeda regional environment protection department
Treatment cost/gate fee for hazardous waste	Treatment cost is 12 EUR/m ³ plus VAT

Source: SC Klaipėdos Nafta

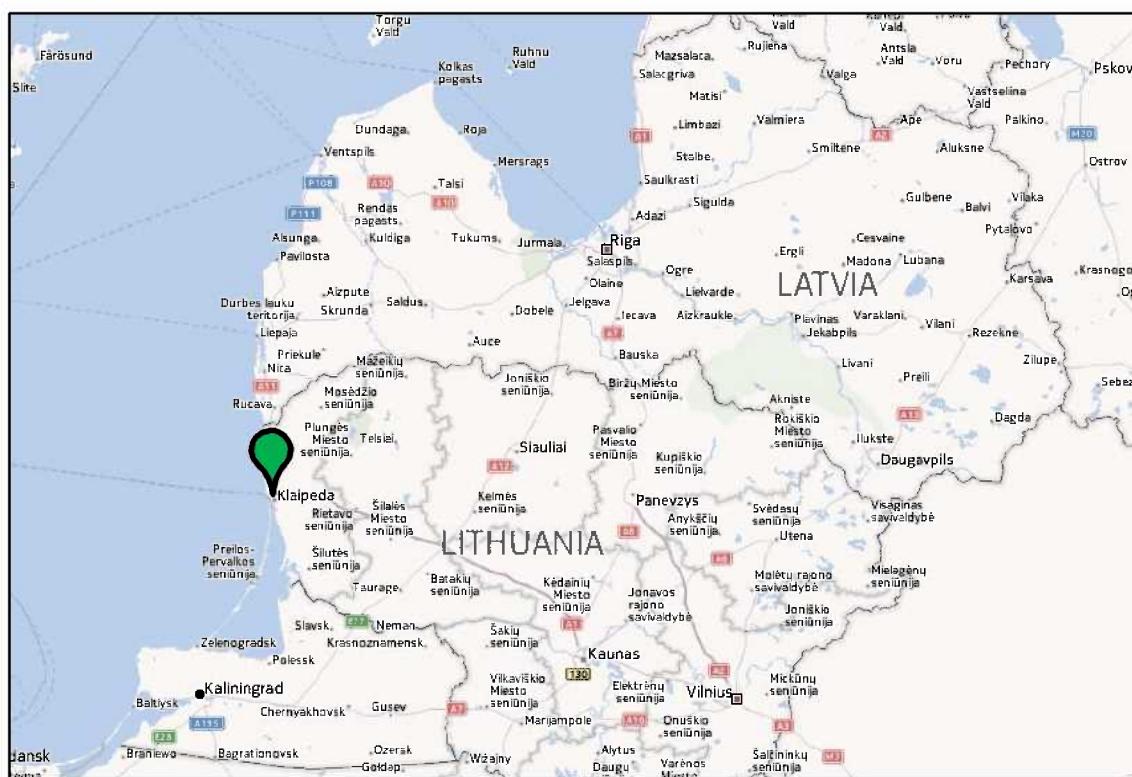
HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Lithuania - SC Klaipėdos Nafta



Reception facilities of SC Klaipėdos Nafta

Source: SC Klaipėdos Nafta



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Lithuania - UAB "Klaipėdos keleivių ir krovinių terminalas"

UAB "Klaipėdos keleivių ir krovinių terminalas" (JSC Klaipeda passenger and cargo terminal)

The main activity of the company is oily water collection and cleaning from ships.

Country	Lithuania
Name of facility	UAB "Klaipėdos keleivių ir krovinių terminalas" (JSC Klaipeda passenger and cargo terminal)
Ownership	Koncernas Achemos Grupė UAB – 60%; Bega UAB – 40%.
Contact information	CEO: Benediktas Petruskas Email: info@kkkt.lt Web-site: www.kkkt.lt Address: Nemuno gatvė 24, LT-93227, Klaipėda Tel.: +370 46 313137 Fax.: +370 46 313136
Technology	
Method of treatment	Oily water is collected from ships by means of two tanker vessels (capacity 350 tonnes each). Oily water is stored in large tanks first (3000 tonnes), then oily surface is scooped into smaller tanks (300 tonnes) where it is heated up to facilitate oil separation. Subsequently, the oily surface is processed by separator (Alfa Laval) and then goes through a flotation unit. Following this process, water samples are taken and residual water is drained into municipal water treatment network. Oil is sold as fuel, while residual sludge is taken to external contractor for processing.
Capacity	Processing capacity for oily water is 25 tonnes/h, determined by the separator capacity. Company processes about 15 000 tonnes of oily water annually. Operates two vessels with capacity for oily water collection (350 tonnes each) as well as a third one for oil collection from water surface. Company has six onshore oily water storage tanks with total capacity of 9900 tonnes (3x3000 tonnes; 3x300 tonnes).
Energy production	No energy production
Information about the license/permit	
The licensing authority	Environmental protection agency of Lithuania (EPA)
The controlling authority	Klaipeda regional environment protection department
Permit number	Nr. 000431
Permit validity	General license has no term limits; permits for different waste streams are applied for on a case-by-case basis, as demand arises. The company has stopped oily water recycling in 2012, but is continuing collection services.
Acceptable waste types	Oily and contaminated water; oil water from ships and motor transport; motor oil and heating oil
Waste restrictions	Food oils are not accepted, as well as all other hazardous substances not specified in Group 13.
Restrictions for importing waste from other countries	Maritime hazardous waste treatment is governed by Marpol Convention. Permits are not required for accepting oily water, provided that the quantities accepted do not exceed those specified in a general permit.

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

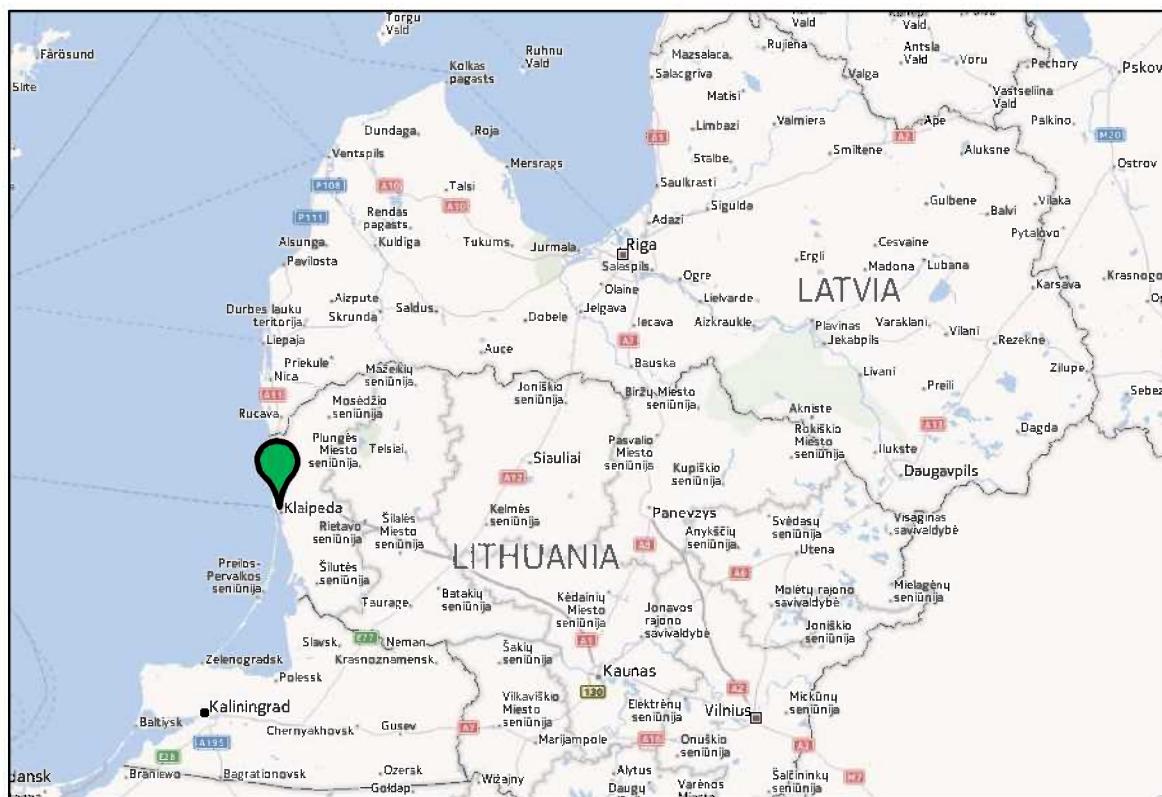
Lithuania - UAB "Klaipėdos keleivių ir krovinių terminalas"

Requirements on delivery and reception of waste	Quantities of hazardous cargo delivered by inland transport should be covered by permit quota for particular waste stream (oils and oily water).
Control of emissions	Quarterly monitoring of air emissions plus spot checks by Klaipeda region environmental protection department
Control of water discharges	Two water samples are taken prior to each discharge of treated water into municipal sewage facilities. Parameters measured are BOD, Suspended Solids, Chlorine, Acidity and Oil Residues.
Residues	Annual production of oily sludge is about 30 tonnes, which is transported for treatment by external contractor.
Control, monitoring and reporting	In accordance with ISO 14001 certificated by JSC „Det Norske Veritas“.
Treatment cost/gate fee for hazardous waste	There is no tariff gate fee. Treatment cost is determined on a case by case basis depending on oil content, quantity accepted, etc.



UAB "Klaipėdos keleivių ir krovinių terminalas"

Source: www.kkkt.lt, Finpro



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Lithuania - UAB "Žalvaris" filialas Atliekų utilizavimo centras

UAB "Žalvaris" filialas Atliekų utilizavimo centras (Waste recycling centre)

UAB Žalvaris specializes in collection of hazardous waste and partial processing. UAB Žalvaris has 7 regional branches across Lithuania. The company collects all types of hazardous waste, with the exception of hazardous pharmaceutical waste and radioactive waste. Their focus is hazardous waste collection from car service stations, such as used oils, brake liquid, car batteries, used filters, oil absorbents, shock absorbers and car batteries. They process some solid waste, such as car batteries, at their own facilities. However, most other waste, including hazardous organic waste, is exported to be processed, mainly to Sweden. The company does not have its own incineration or regeneration facilities for oily water, pesticides and other hazardous liquids.

Country	Lithuania
Name of facility	UAB "Žalvaris" filialas Atliekų utilizavimo centras (Waste recycling centre)
Ownership	Census Group UAB – 90%; private persons – 10%
Contact information	CEO: Mr. Mantas Marcinkevičius Email: info@zalvaris.lt Web-site: www.zalvaris.lt Address: Palemono g. 1, 52159 Kaunas , Lithuania Tel: +8 37 490 260 Fax: +8 37 373 478

Technology

Method of treatment	Waste oil collection in drums. Do not have their own processing facilities for incineration or regeneration of oily water, processed oils, BCPs or pesticides. These hazardous wastes are temporarily stored and then exported for processing to other countries, mostly Poland and Sweden. The company processes used car batteries and electronic waste at their facilities.
Capacity	Domestic: 1,000 tonnes/month of solid and liquid waste combined; out of which approx. 500 tonnes /month are car batteries. Export: Waste oil, oily water and PCBs to Poland, Sweden, Germany, Belgium ca. 500 tonnes/month (Oils – 100-120 tonnes/month; PCB – 1 tonnes/month; oily water – 10-15 tonnes/month; used filters, contaminated soil; oil absorbents, contaminated wood – approx.. 370 – 390 tonnes). Have waste oil storage facilities in Vilnius and Kaunas, with capacity of 50 tonnes each.
Energy production	No energy production

Information about the license/permit

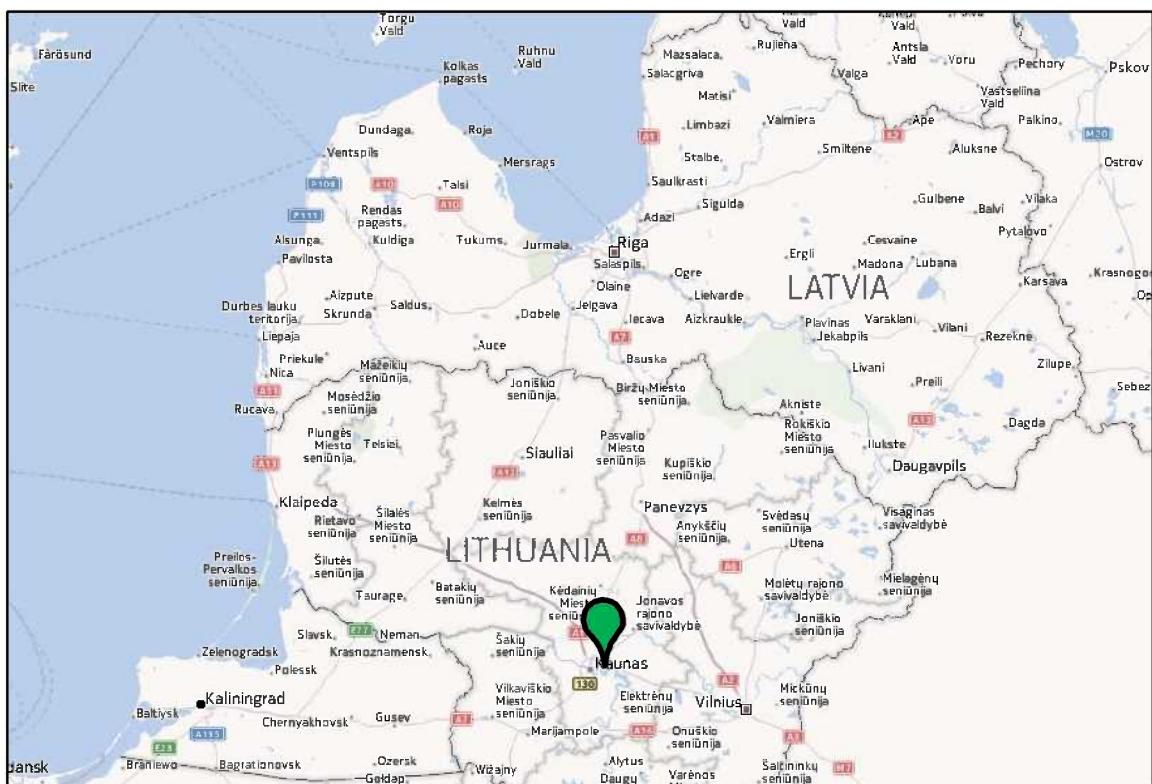
The licensing authority	Environmental protection agency of Lithuania (EPA)
The controlling authority	Kaunas Regional Environmental Protection Department
Permit number	Nr. 000303, issued 2006.12.20.
Permit validity	General license has no term limits; permits for different waste streams are applied for on a case-by-case basis, as demand arises.
Acceptable waste types	Collects all hazardous waste except pharmaceutical, biodegradable and communal waste. Does not handle radioactive waste.
Waste restrictions	Permits for different waste streams are issued by the Regional Environmental Protection Departments, depending on the origin of the waste stream (UAB Žalvaris operates 7 regional branches across Lithuania). Due to the fact that costly bank guarantees are required for the entire amount of waste allowed to be handled under particular permit, the company is reluctant to apply for permits on waste streams

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Lithuania - UAB "Žalvaris" filialas Atliekų utilizavimo centras

	which it cannot predict in advance. Practically, it means that in case a sudden need to handle a large amount of particular waste stream not covered by existing permit arises, the company has to apply for a new permit, which can take up to several months.
Restrictions for importing waste from other countries	Import and export is allowed by legislation. Permits for each individual shipment are to be obtained in advance. Permits for international shipment take between 1-6 months to obtain.
Requirements on delivery and reception of waste	Preliminary declaration of waste is required to obtain a permit.
Control of emissions	Since the company does not incinerate or regenerate waste, they do not measure air emissions. Levels of solid particles from used batteries and electronic waste are too small to be measured.
Control of water discharges	Since the company does not regenerate oily water, it is not under obligation to measure its water discharges. The same limits which apply to all industrial companies also apply to UAB Žalvaris
Residues	There are no residues produced from processing electronic waste
Control, monitoring and reporting	Company carries out its own monitoring of water discharges. Control checks are also done by municipal water treatment company as well as Kaunas regional environmental protection department, as per standard procedures applicable to all industrial companies.
Treatment cost/gate fee for hazardous waste	UAB Žalvaris has a standard list price for auto service station waste (used oil, brake fluids, used filters, batteries) which is their primary specialization , but it adjusts its pricing for hazardous liquids depending on quantity, level of hazard, etc.

Source: : www.zalvaris.lt, Finpro



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Norway Norcem Brevik

3.7 Norway

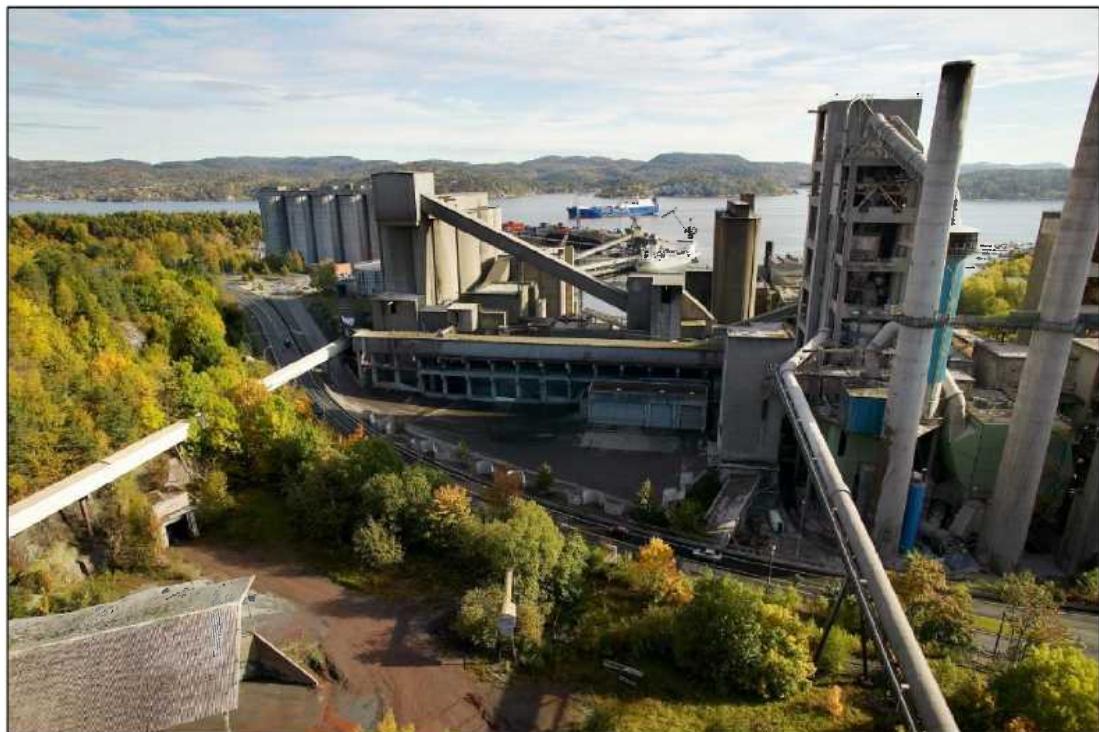
Norcem Brevik

Norcem Brevik uses alternative fuels in cement production. The amount of alternative waste derived fuel is over 130,000 tonnes/year which represents some 50% of all fuel needed for cement production. Ca. 15% of the waste based fuel origins from fossil materials, which includes industrial organic hazardous waste.

Country	Norway
Name of facility	Norcem Brevik
Ownership	Heidelberg Cement Group
Contact information	Email: david.verdu@norcem.no Web-site: http://www.heidelbergcement.com Address: Postboks 38, Setrevegen 2, 3991 Brevik Tel: +47 35 57 20 00 Fax: +47 35 57 17 47
Technology	
Method of treatment	Cement kiln incineration
Capacity	50,000 tonnes/year of hazardous organic waste 15,000 tonnes/year waste oil
Energy production	Information not available on web pages of the company
Information about the license/permit	
The licensing authority	Climate and Pollution Agency (Klif)
The controlling authority	Klif, Klima- og forureningsdirektoratet (Climate and Pollution Agency)
Permit number	2004.057.T/8.12.2004, latest update 18.4.2012
Permit validity	until further note
Acceptable waste types	hazardous organic waste
Waste restrictions	For waste oil used as fuel PCB limit 50 mg/kg, max halogens 1000 mg/kg, heat value min. 30 MJ/kg, flashpoint less than +55°C. No radioactive or explosive waste
Restrictions for importing waste from other countries	In accordance with the Basel Convention and relevant regulations in Norway and EU
Requirements on delivery and reception of waste	Notification of waste prior to delivery is obligatory
Control of emissions	The emissions control is carried out in accordance with the permit (see above) and the latest revision of the permit dated 18.4.2012.
Control of water discharges	No direct discharge of process water from the operation
Residues	No residues from hazardous waste; all mixed with the product. Dust collected from the stacks and refractory bricks and similar residues are stored in the special landfill at Norcem.
Control, monitoring and reporting	Internal control and regular reporting to the controlling authority, depending on the substance, either annually or twice per year. Independent controls occasionally.
Treatment cost/gate fee for hazardous waste	Prices are given only for actual waste to be delivered. No general price list available

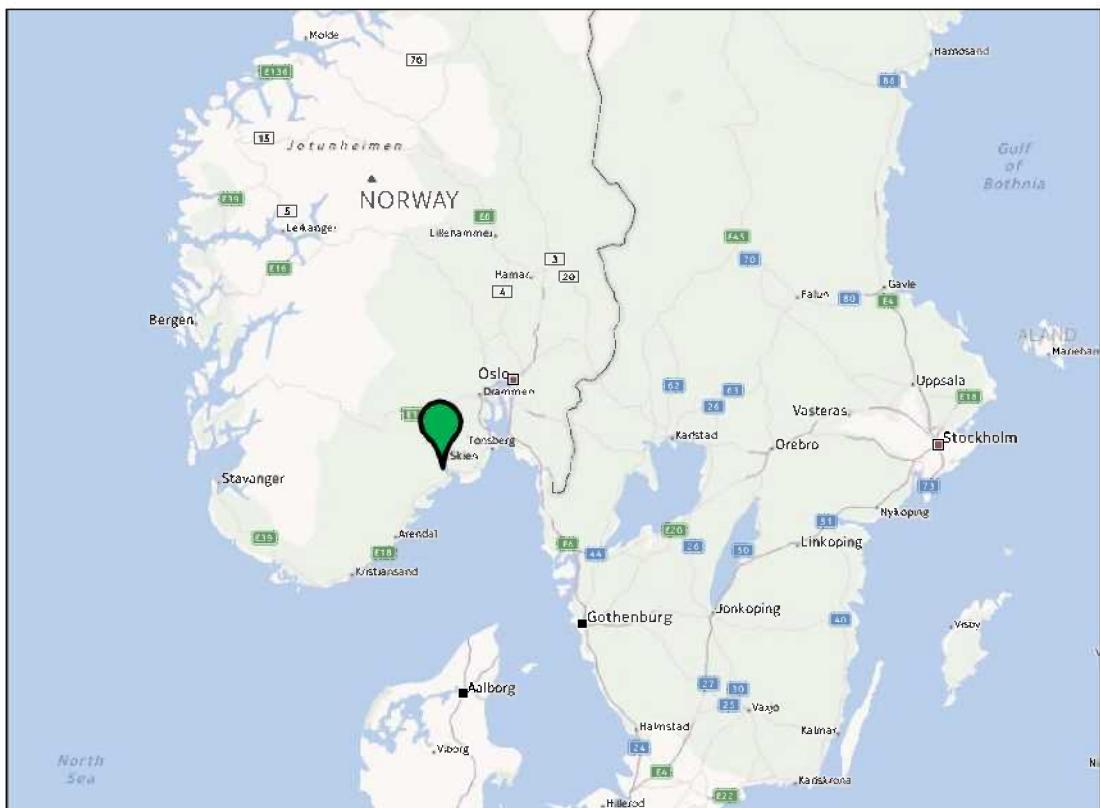
HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Norway Norcem Brevik



Norcem Brevik

Source: <http://www.heidelbergcement.com>, www.klif.no



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Norway Halliburton AS Mongstadsbase

Halliburton AS Mongstadsbase

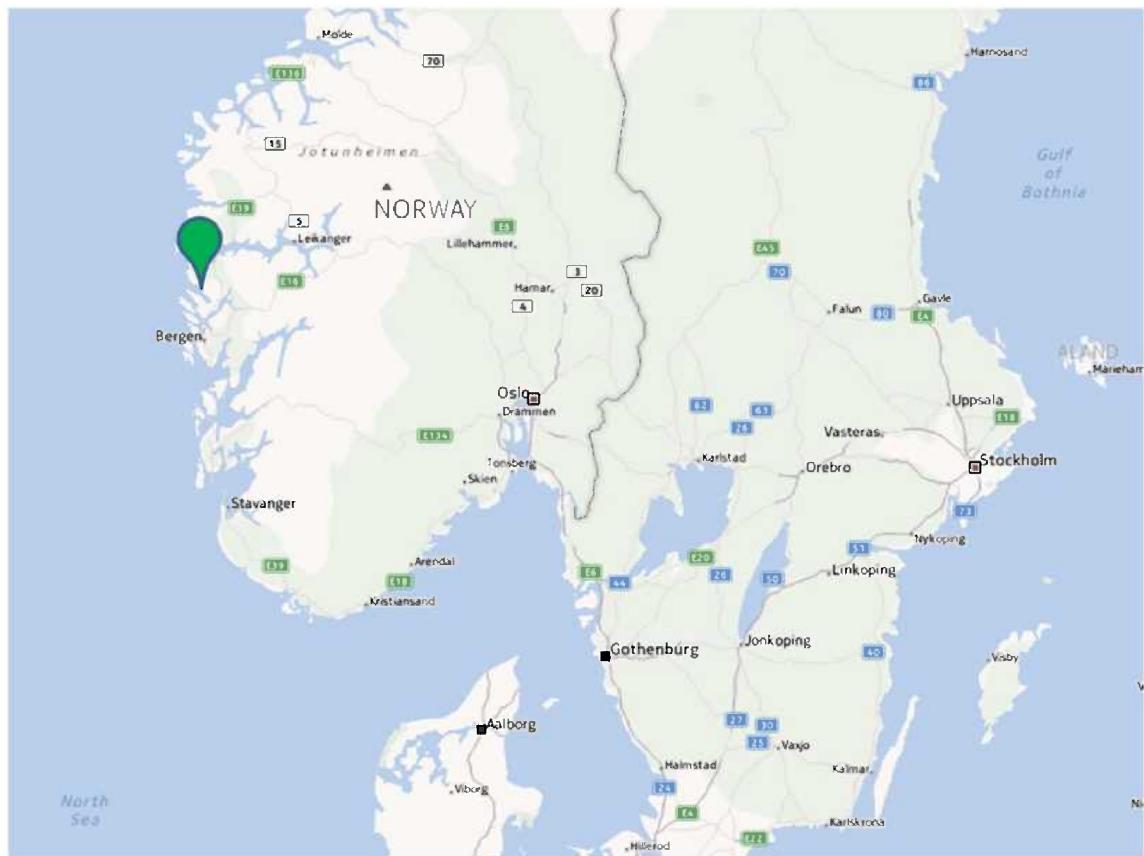
Halliburton AS Mongstadsbase provides treatment and disposal services for oil drilling waste.

Country	Norway
Name of facility	Halliburton AS Mongstadsbase
Ownership	Halliburton
Contact information	Email: norcommunications@halliburton.com Web-site: www.halliburton.no Address: Mongstad Sør, 5954 MONGSTAD Tel: +47 51 83 70 00 Fax: +47 51 83 83 83
Technology	
Method of treatment	Reception, treatment, purification and disposal of oil drilling waste
Capacity	240,000 tonnes/year
Energy production	No energy production
Information about the license/permit	
The licensing authority	Climate and Pollution Agency (Klif)
The controlling authority	Climate and Pollution Agency (Klif)
Permit number	2.4.2004/28.6.2012/ ref.: 2008/295
Permit validity	Until further notice
Acceptable waste types	Oil emulsions, slop water, process water, washing water, oil and grease waste, waste oil (not refundable), water with remains of drilling waste and oil
Waste restrictions	Only above listed waste permitted
Restrictions for importing waste from other countries	In accordance with the Basel Convention and relevant regulations in Norway and EU
Requirements on delivery and reception of waste	Upon receipt of hazardous waste a system has to be established to ensure that the received hazardous waste is declared or legally received so that the further processing can be done in a responsible manner.
Control of emissions	The activity will have only minor emissions to the air and must not cause any harm to the surrounding area in the form of dust or odour. Diffuse emissions from production processes or open areas, e.g. from storage areas, loading and unloading areas or purification facilities, that may cause harm to the environment, shall be avoided as much as possible.
Control of water discharges	The above mentioned permit sets limits to waste water discharges for a number of components.
Residues	Produced waste should be reused in the own processes in accordance with the prevailing laws. If any waste cannot be reused it shall be taken to a licensed facility for further treatment or disposal within a year from the production of such waste
Control, monitoring and reporting	The company has to report to Klif every year before 1 st of March about emissions as stipulated by Klif (see www.klif.no)
Treatment cost/gate fee for hazardous waste	Not available

Source: www.halliburton.no, www.klif.no

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Norway Halliburton AS Mongstadsbase



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Norway - Renor AS Brevik

Renor AS Brevik

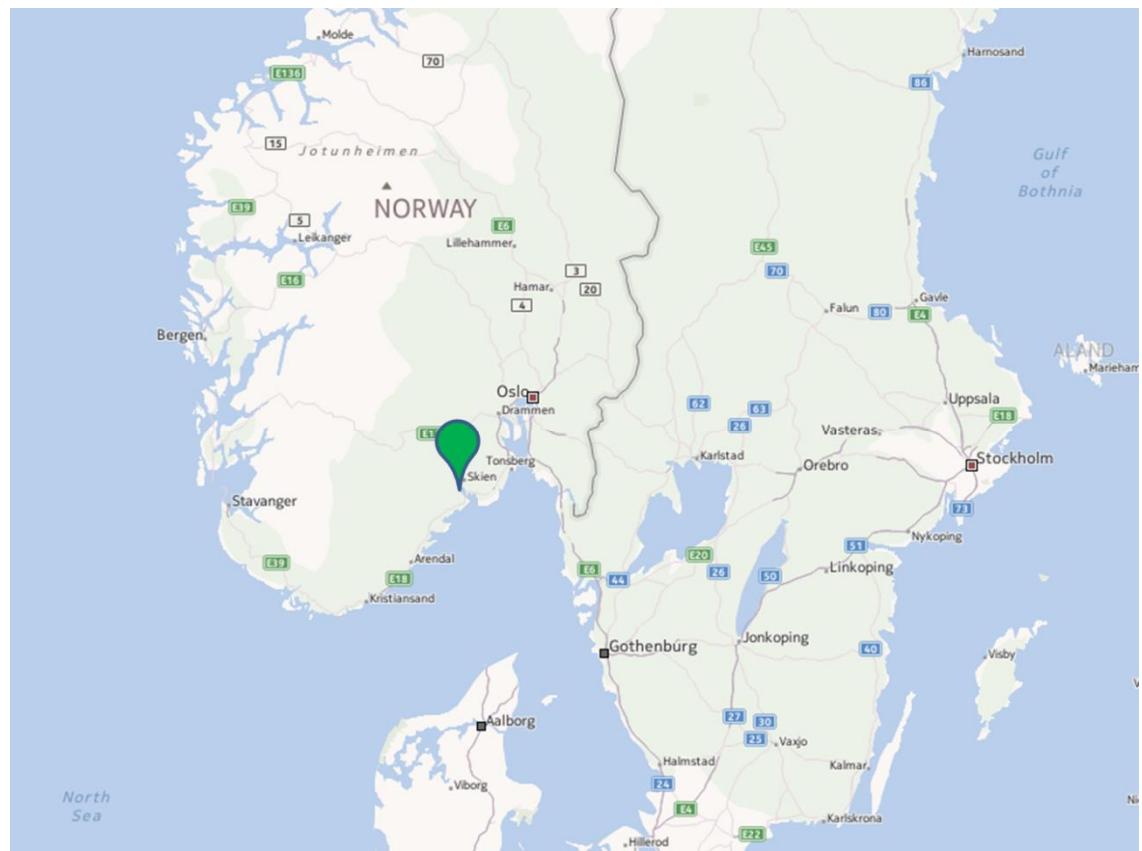
Renor AS Brevik collects and recycles organic hazardous waste and has a waste oil treatment process. Majority of organic waste is delivered to Norcem cement plant for incineration.

Country	Norway
Name of facility	Renor AS Brevik
Ownership	Heidelberg Cement
Contact information	Email: renor@renor.no Web-site: www.heidelbergcement.com Address: Tangenveien 29, 3991 Brevik, Norway Tel: +47 63 86 26 20
Technology	
Method of treatment	Waste oil treatment, collection and recycling of organic hazardous waste
Capacity	50,000 tonnes/year
Energy production	Information not available
Information about the license/permit	
The licensing authority	Klima- og Forureningsdirektoratet (Klif)
The controlling authority	Klima- og Forureningsdirektoratet (Klif)
Permit number	17.4.2008/16.11.2010, 508/96-002
Permit validity	Until further notice
Acceptable waste types	Waste oil, oil containing water/sludge, oil emulsions, other type of oily waste, solvent containing waste with or without halogens, waste containing paint, glue, varnish and printing inks, distillation waste, waste containing tar, pesticides, PCB containing waste, other organic hazardous waste, photo chemicals
Waste restrictions	Explosives, self-igniting materials, infectious materials, other reactive or radioactive materials
Restrictions for importing waste from other countries	In accordance with the Basel Convention and relevant regulations in Norway and EU
Requirements on delivery and reception of waste	Upon receipt of hazardous waste a system has to be established to ensure that the received hazardous waste is declared or legally received so that the further processing can be done in a responsible manner.
Control of emissions	Emissions of dust and solvent vapours as well as odours have to be avoided by necessary means in reception, storage, pre-handling etc. to the lowest possible level.
Control of water discharges	The above mentioned permit sets limits to waste water discharges for a number of components. Maximum amount of effluents is restricted to 18,000 m ³ /year.
Residues	Any residues or waste that Renor cannot treat has to be delivered to an acceptable treatment facility within one year of reception.
Control, monitoring and reporting	The company has to report to Klif every year before 1st of March about emissions as stipulated by Klif (see www.klif.no)
Treatment cost/gate fee for hazardous waste	Prices are given only for actual waste to be delivered. No general price list available

Source: www.heidelbergcement.com, www.klif.no

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Norway - Renor AS Brevik



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Sarpi Dąbrowa Górnica (Veolia)

3.8 Poland

Sarpi Dąbrowa Górnica (Veolia)

The company operates a high temperature rotary kiln incinerator for the treatment of organic hazardous waste. At the moment the company is applying for new environmental permit and increasing the treatment capacity.

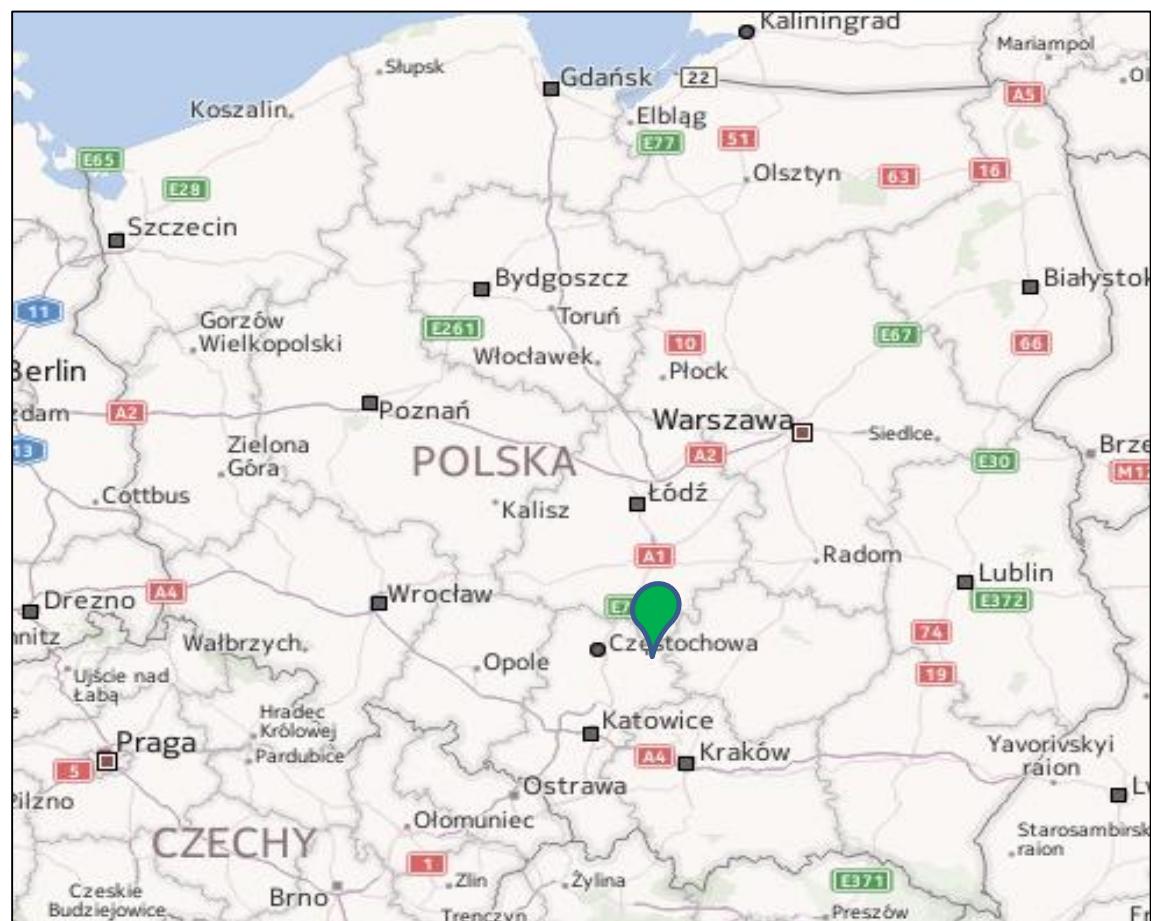
Country	Poland
Name of facility	Sarpi Dąbrowa Górnica (Veolia)
Ownership	SARP Industries SA (Veolia Environment Services)
Contact information	CEO Mr. HERVÉ MARTEL Email: odpady@sarpi.pl Web-site: http://www.sarpi.pl Address: Ul. Koksownicza 16 42-523 Dąbrowa Górnica Tel: +48 32 795 53 98, +48 32 639 50 00, +48 32 639 50 01 Fax: +48 32 639 50 20
Technology	
Method of treatment	High temperature incineration in rotary furnace and after-burner chamber, max temperature in rotary kiln 1200 centigrade
Capacity	30 000 tonnes/year, 4 000 kg/h, yearly time of exploitation 8000 h Technical capacity is higher – ca. 50 000 tonnes/year, the plan is to obtain integrated permit for this amount of waste
Energy production	Recuperation boiler of capacity 15 tonnes of steam /h, heat exchangers heating technology air using steam 3 tonnes/h, generator of capacity 1.6 MW (using 10 tonnes of steam/h)
Information about the license/permit	
The licensing authority	Silesian Voivod/ Marshal of the Voivodeship now
The controlling authority	Voivodeship Inspectorate of Environmental Protection (Silesia)
Permit number	The decision of the Silesian Voivod dated 17.04.2003 no. 120/03 mark ŚR-III-6618/DG/1/13/03-integrated permit for installation for disposal of industrial waste, including hazardous, using thermal treatment method (incineration).
Permit validity	The decision is valid until 17.04.2013. (standard time of permits in Poland is 10 years)
Acceptable waste types	800 categories of waste, of which 365 categories of hazardous waste (form of solid, paste and liquid waste)
Waste restrictions	Practically all kinds of waste can be taken, apart from explosives and radioactive waste. Medical and veterinary waste amount cannot exceed 20% of total waste taken for treatment.
Restrictions for importing waste from other countries	The Main Inspectorate of Environmental Protection acceptance is required for importing the waste (trans border transport of waste), so after the agreement between SARPI and the Client is reached, the Client applies for permit.
Requirements on delivery and reception of waste	The samples for testing are taken first time before agreement with the Client and second time after the material is delivered, to confirm the waste content.
Control of emissions	In accordance with the EU Directive No. 2000/76/EC on incineration of waste and the permits listed above.

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Sarpi Dąbrowa Górnica (Veolia)

Control of water discharges	Waste water discharges from the flue gas cleaning of incinerators are controlled in accordance with the EU Directive No. 2000/76/EC on incineration of waste.
Residues	Annual quantity of slag and bottom ash is max. 7500 tonnes/year. Max. amount of volatile ashes is 3000 tonnes/year. Maximum amount of solid waste from gas treatment is 3000 tonnes/year.
Control, monitoring and reporting	The company has constant monitoring (24h/day). There are 2 air-emissions analyzers – in case of breakdown of the first one, second is automatically switched on (otherwise treatment installation could not be working) Reporting is done according to the Regulations by the Ministry of Environment to Marshal Office and Voivodeship Inspectorate of Environmental Protection.
Treatment cost/gate fee for hazardous waste	It is impossible to give a standard price of treatment. It varies depending on waste content (e.g. heavy metals) and amount of waste.

Source: www.sarpi.pl, Finpro (Sarpi Dąbrowa Górnica Veolia)



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Poland SHIP SERVICE S.A.

SHIP-SERVICE S.A.

The company collects waste oil and other oil containing waste from ships and treats them further for reuse when applicable. The company has the required equipment to collect the waste and treat them.

Country	Poland
Name of facility	SHIP-SERVICE S.A.
Ownership	PKN Orlen is the majority shareholder
Contact information	CEO TOMASZ KONIECZNY Email: office@ship-service.pl Web-site: www.ship-service.pl Address: Tama Pomorzańska 1, 70-030 Szczecin Tel: + 48 91 431 89 91/92 Fax: +48 91 431 89 99 Company's HQ is registered in Warsaw, Ul. Łucka 7/8
Technology	
Method of treatment	Reception of oily waste and other hazardous waste from ships, treatment in own installation in Szczecin. The installation includes: 1. Storage on the Barge – collecting the waste from ships and cistern lorries (storing space 480 m ³) 2. Underground pipeline pumping waste from the barge to the pre-treatment installation in Bosmanka building 3. Technological process Kary: - Mechanical oil separator with coalescing filter, -Unit for treatment of oil emulsion, -Monitor of outgoing cleaned industrial waste with oil monitor, -Unit for static dewatering of after-flotation slime. -Bio sorption unit
Capacity	Average yearly 15 000 m ³ /year, daily average 55 m ³ /day, max hourly 3 m ³ /h
Energy production	No energy production
Information about the license/permit	
The licensing authority	West Pomerania Voivode/ Marshal of the Voivodeship - now
The controlling authority	Voivodeship Inspectorate of Environmental Protection in West Pomerania, Marshal Office controls as well each 5 years.
Permit number	Integrated permit SR-Ś-8/6619/30/7 for operating installation for treatment and recovery of liquid petroleum waste for location Szczecin Debogórska str. 19/22 dated 30.05.2007; With minor changes from 2007 and 2011 (reg. e.g. address of HQ).
Permit validity	30.05.2017.
Acceptable waste types	Company specializes in oil waste (petroleum); it collects oily water from ships from cleaning process of tanks, it also collects oily water from the natural disasters (oil spills and spread out), waste oil etc.
Waste restrictions	They specialize in oily water only
Restrictions for importing waste from other countries	Import and export of waste is possible only after getting the permit from the Main Inspectorate of Environmental Protection - GIOS. (Unless there is a critical situation – oil spill out etc., when immediate action is required).
Requirements on delivery and reception of waste	Waste is delivered to the collecting/storing barge BA-JK. They have possibility to collect oils from ships in Szczecin and Swinoujście.

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Poland SHIP SERVICE S.A.

Control of emissions	Not applicable
Control of water discharges	Waste water discharges are controlled in accordance with the permits listed above.
Residues	Recovered oil is handed over to the companies for further use (it is either going to refinery in Jedlicze for refining or is used after processing as alternative fuel). Slime waste from cleaning of the tanks is collected by authorized companies for treatment or as alternative fuel (mainly it is used for fuel).
Control, monitoring and reporting	The company needs to regularly measure the amount of sewage and test samples. Tests are taken min. once per 2 months' time. The values of elements mentioned above are measured. The amount of sewage is measured at least once per day. Industrial sewage is measured continuously regarding the content of oil-derivatives (monitor DECMA OCD-2) as well as pH (JUMO). Other parameters are controlled by the external laboratories. The reporting on the waste treated is carried out and reported to the Marshal Office. Monitoring of the technological process is done automatically. Reporting is done to the Marshal and WIOS, fees for use of the environment are paid to the Marshal.
Treatment cost/gate fee for hazardous waste	70-130 PLN (app. 17-30 EUR) per m ³



Source: Finpro (SHIP-SERVICE S.A.)

The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Poland - SITA Starol Sp. z o.o.

SITA Starol Sp. z o.o.

Sita Starol Sp. z.o.o. makes alternative fuel for cement kiln incineration from various waste including hazardous organic waste and waste oil. There are two installations operated by the company: in Chorzow and in Tarnów Opolski; the second one is smaller and handles only liquid waste.

Country	Poland
Name of facility	SITA Starol Sp. z o.o.
Ownership	Group Suez Environment
Contact information	CEO PIOTR BORDOSZEWSKI Email: starol@starol.com Web-site: www.starol.eu Address: al. Korfantego 191, 40-153 Katowice Tel: +48 (32) 203 76 74 Fax: +48 (32) 203 76 80
Technology	
Method of treatment	In the facilities in Chorzów at Kluczborska 29 str. alternative fuel production takes place: the company produces solid alternative fuels based on shredded solid waste and solid alternative fuels based on absorbents mixed with solid, pasty and liquid waste.
Capacity	Total 235 000 tonnes/year; for process R15 – max. 120 000 tonnes/year, for process D13 – 105 000 tonnes/year, liquid waste 10 000 tonnes/year
Energy production	No energy production
Information about the license/permit	
The licensing authority	Marshal of the Silesian Voivodeship
The controlling authority	Voivodeship Inspectorate of Environmental Protection (Silesia)
Permit number	Decision no. 866 OS/2009 dated 11.03.2010. Integrated permit for the installation for recovery and treatment of waste in Chorzów.
Permit validity	Valid until 11.03.2020.
Acceptable waste types	Wide catalogue of hazardous and non-hazardous waste (over 800 various types of waste)
Waste restrictions	Asbestos, medical, electronic waste, batteries, radioactive waste, explosives and inflammable waste (this is tested by the Laboratory)
Restrictions for importing waste from other countries	Permit from the Main Inspectorate of Environmental Protection (GIOS) is needed
Requirements on delivery and reception of waste	The sample of waste has to be examined, e.g. calorific value, moisture content, heavy metal content is tested. Only after that the waste can be qualified for the process; after waste is transported to the plant it is examined once more. (Also the fuel that is leaving the plant is tested).
Control of emissions	Limits have been set for dust and a number of hydrocarbons
Control of water discharges	Not applicable
Residues	Metal scrap is going to recycling via steel mills; stones, hard elements etc. are separated and further used.
Control, monitoring and reporting	Record of waste taken and processed (qualitative and quantitative) is done according to the classification of waste and reported. Air emissions are measured - 2 times per year. Noise monitoring is done every 2 years. Underground waters are monitored – tests once per year.

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Poland - SITA Starol Sp. z o.o.

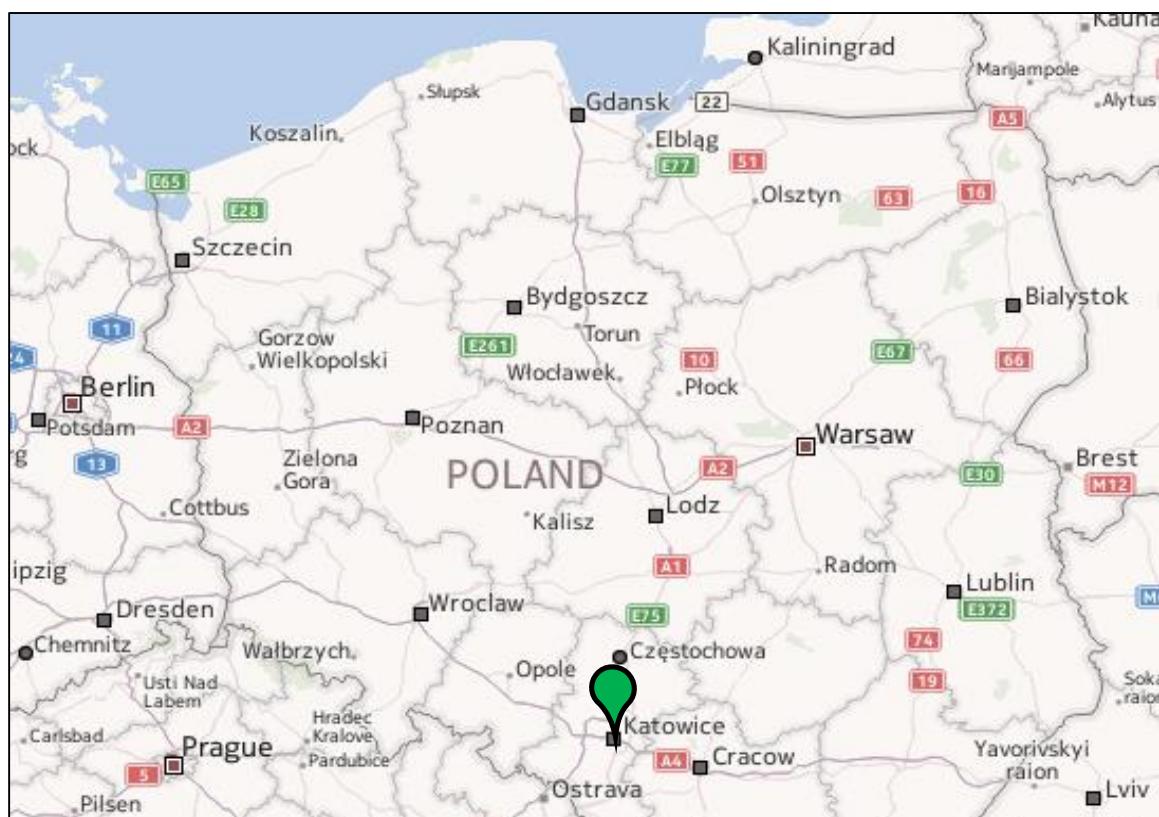
	Tests results and measurements are archived; reporting is done to the Marshal of the Voivodeship and to the Voivodeship Inspectorate of Environmental Protection according to the Polish law.
Treatment cost/gate fee for hazardous waste	The fee varies depending on what waste is in question between 150 PLN-1000 PLN per t (36-245 EUR). There is no average value.

Source: Finpro (SITA Starol Sp. z o.o.)



SITA Starol Sp. z.o.o

Source: Finpro (SITA Starol Sp. z o.o.)



Source: Finpro (SITA Starol Sp. z o.o.)

The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE OVERVIEW

Russia - Ekocom , Environmental Services Company

3.9 Russia

“Ekocom”, Environmental Services Company

Collection of waste oil and other organic hazardous waste, waste oil recycling***

Country	Russian Federation
Name of facility	“Ekocom”, Environmental Services Company ЗАО «Комбинат экологического обслуживания»
Ownership	Mr. Vladimir Alencin **
Contact information	Email: info@ekocom.ru Web-site: www.ekocom.ru Address: 107140, Moscow, Upper Street Krasnoselskaya, 34, Apt. 35, Room TARP CAO 105082 Moscow, Perevedenovsky Per 4 Tel: +8 495 722 35 36 CEO Mr. Vladimir Alencin
Technology	
Method of treatment	Collection of waste oil and other organic hazardous waste, industrial waste, plastics, sludge, waste edible fats
Capacity	About 20000 tonnes/year*
Energy production	No energy production
Information about the license/permit	
The licensing authority	Federal Service for Environmental Supervision for the Central Federal District
The controlling authority	Federal Service for Environmental Supervision for the Central Federal District
Permit number	007 № 00391
Permit validity	Until further notice
Acceptable waste types	Industrial waste, used oil and other types listed above*
Restrictions for certain waste types	Almost none, excluding radioactive
Restrictions for importing waste from other countries	None*
Requirements on delivery and reception of waste	The company collects waste itself or can collect them in returnable containers
Control of emissions	Information not available
Control of water discharges	Information not

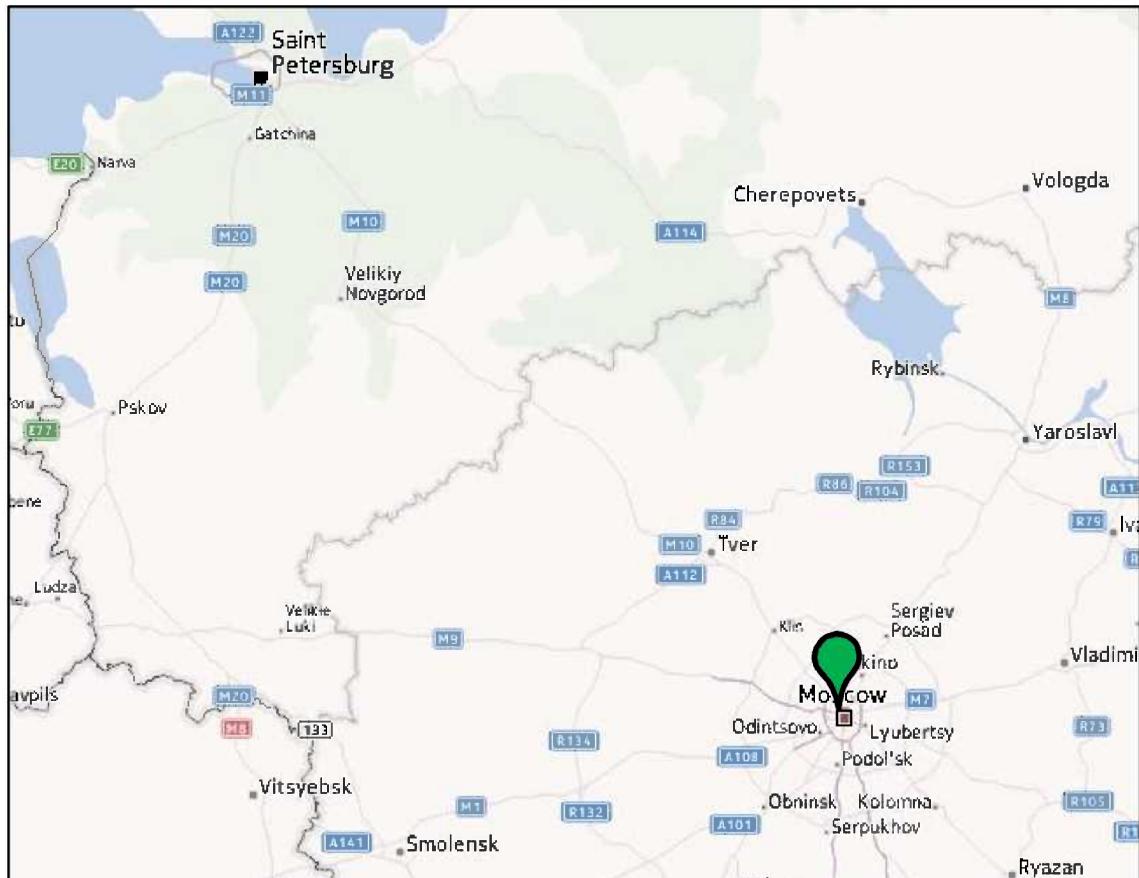
HAZARDOUS WASTE OVERVIEW

Russia - Ekocom , Environmental Services Company

Residues	None
Control, monitoring and reporting	According to standards*
Treatment cost/gate fee for hazardous waste	Average prices are available on the company site, depending on substances and terms

* Interview with the Company manager Ms. Irina Davydova

** Data from Russian official sources like Interfax-Spark (Unified State Registry of Legal Entities)



Source: Finpro (Ecocom, Russian official sources like Interfax-Spark (Unified State Registry of Legal Entities))

The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE OVERVIEW

Sweden Sakab Ab

3.10 Sweden

Sakab Ab

SAKAB has two different incineration lines for the incineration of organic waste: one with a rotary kiln and high-temperature incineration and another with a roster/grate furnace where also certain types of organic hazardous waste can be incinerated.

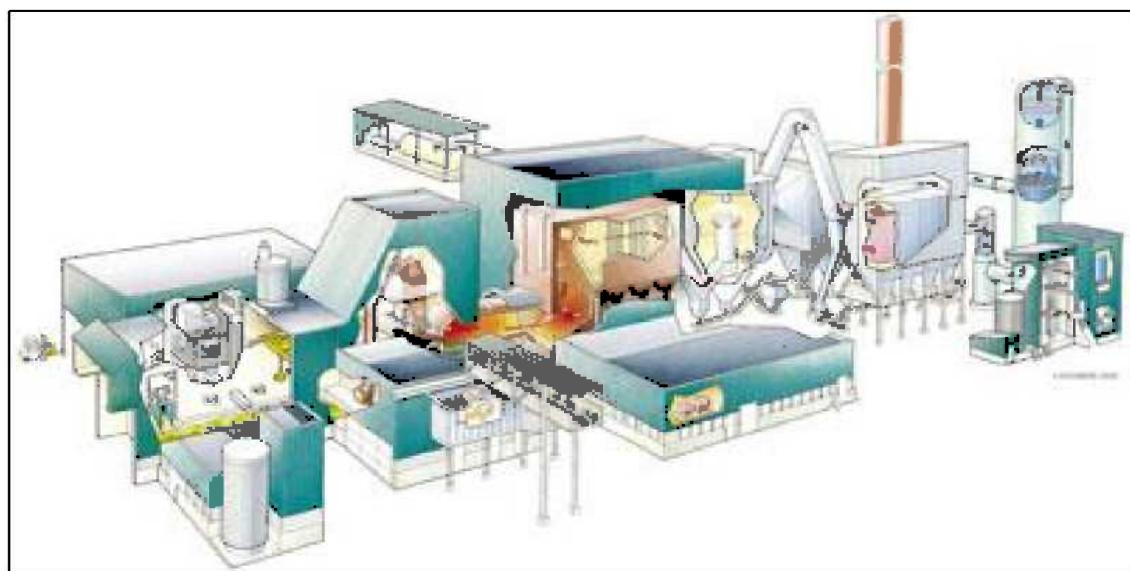
Country	Sweden
Name of facility	Sakab Ab
Ownership	Ekokem Oy Ab, Finland, 100%
Contact information	Email: info@sakab.se Web-site: www.sakab.se Address: SE-692 85 Kumla, Sweden Tel: +46 19 30 51 00 Fax: + 46 19 57 70 27
Technology	
Method of treatment	High temperature incineration
Capacity	Incineration with high temperature incineration in a rotary kiln and in a grate furnace: Annual capacity 200,000 tonnes. Actual treatment in the year 2011: 162 535 tonnes.
Energy production	In the permit 296,400 MWh/year, actual energy production capacity ca. 40 MW
Information about the license/permit	
The licensing authority	Stockholms Tingsrätt
The controlling authority	Länsstyrelsen Örebro län
Permit number	2003-06-03, nr M 371-02, with several amendments
Permit validity	Until further notice
Acceptable waste types	EWC with some exceptions
Waste restrictions	For certain chemical components a maximum concentration has been set. Forbidden materials: explosives, highly flammable category 7a, radioactive materials
Restrictions for importing waste from other countries	In accordance with the EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Requirements on delivery and reception of waste	All waste has to be declared in advance. The facility will not receive any waste loads without a preliminary declaration procedure and registration.
Control of emissions	In accordance with the EU Directive 2000/76/EC on the incineration of waste
Control of water discharges	Water discharges from air emission control systems In accordance with the EU Directive 2000/76/EC on the incineration of waste
Residues	Slag from incineration is reused in landfill construction and road construction etc. Fly ash is stored in hazardous waste landfills in accordance with the EU landfill directive nr. 1999/31/EC.
Control, monitoring and reporting	Sakab carries out continuous monitoring of air emissions and monitoring of water discharge. The controlling authority will have its own tests occasionally. Sakab reports to the controlling authority on monthly basis. In case of irregularities and problems in operation that may lead to exceeding of license conditions, Sakab will report to the controlling authority without delay.

HAZARDOUS WASTE TREATMENT FACILITY OVERVIEW

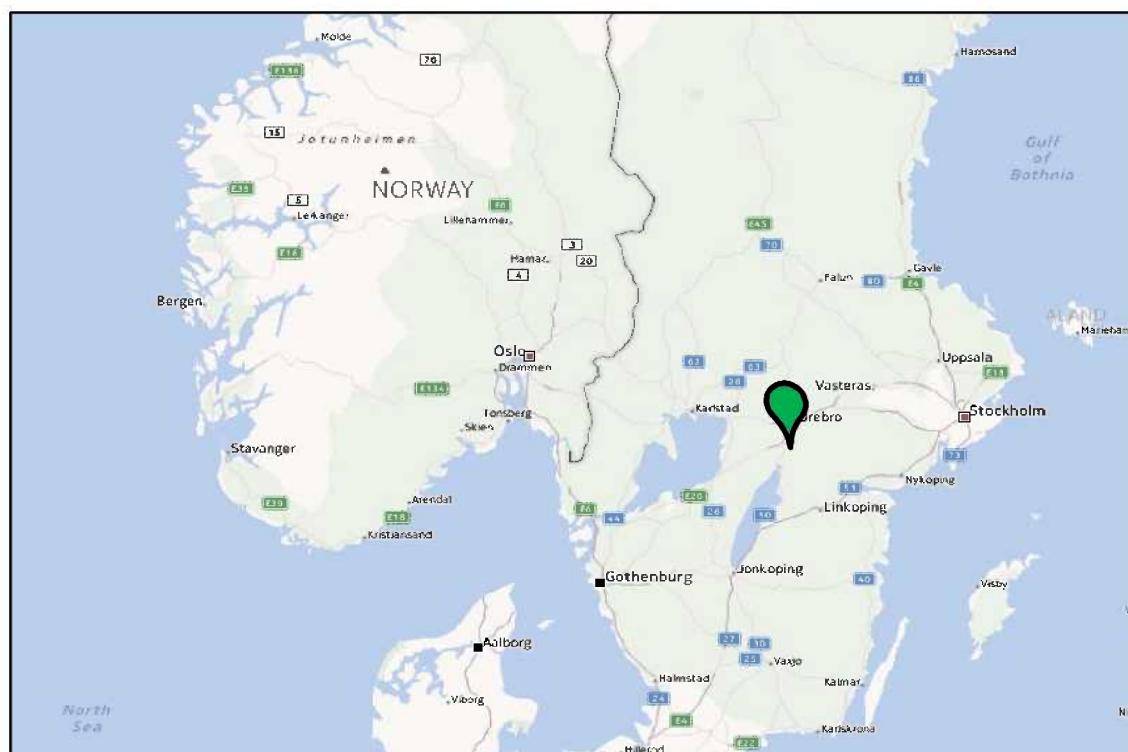
Sweden Sakab Ab

Treatment cost/gate fee for hazardous waste	Sakab does not publish a general price list. All pricing is based on a request for the treatment of a certain waste type and amount.
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Source: www.sakab.se



A process chart/picture about the destruction of organic hazardous waste Source: www.sakab.se



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE OVERVIEW

Sweden Ragn-Sells AB

Ragn-Sells AB

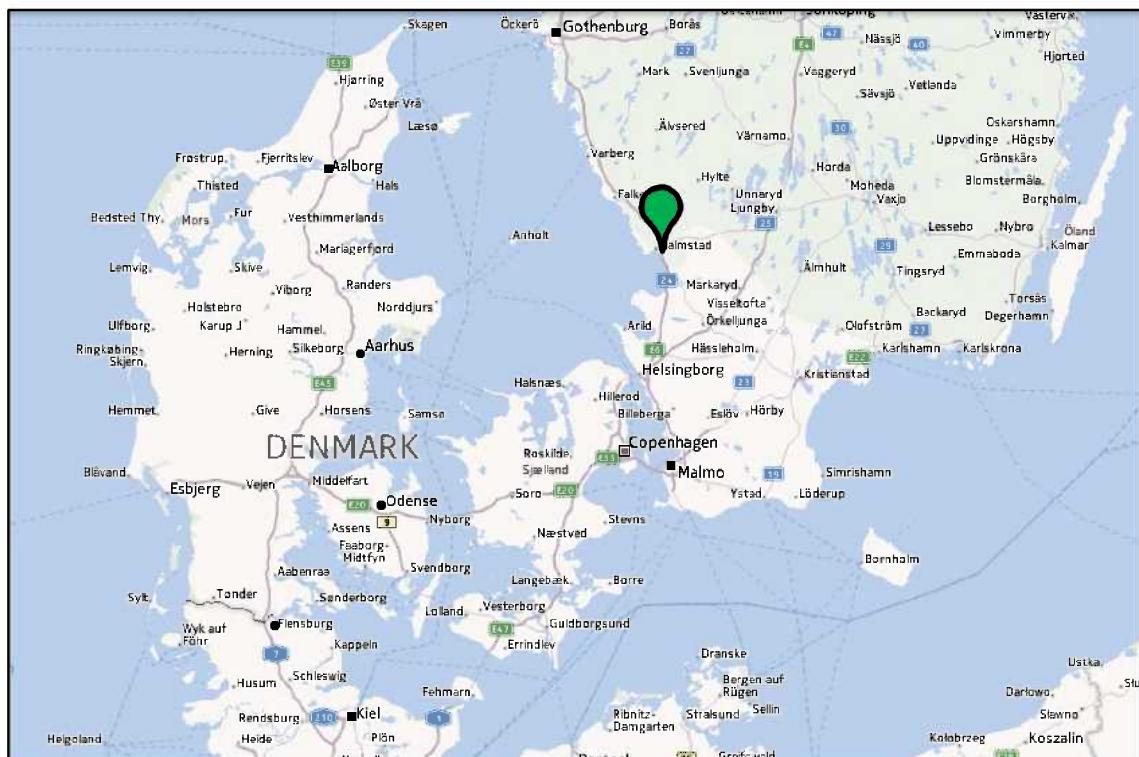
The company collects waste oil, used solvents and other hazardous organic waste. Part of the waste containing lubricant base oil will go to a re-refining process. Other types of organic hazardous waste will be reused as alternative fuel in cement kilns. The company has several facilities. The Halmstad plant has special waste oil treatment processes.

Country	Sweden
Name of facility	Ragn-Sells AB Halmstad
Ownership	Ragn-Sells AB Halmstad
Contact information	Email: info@ragnsells.se Web-site: www.ragnsells.se Address: Metallvägen 2, 305 94 Halmstad Tel: +46 771-88 88 88, +46 35-280 82 00 Fax: +46 8 612 65 92
Technology	
Method of treatment	Waste oil purification and recycling
Capacity	25000 tonnes/year
Energy production	Not applicable, the process does not produce energy
Information about the license/permit	
The licensing authority	Vänersborgs Tingsrätt, Miljödomstolen
The controlling authority	Länsstyrelsen Västra Götaland
Permit number	M 7-01, 2002-01-15
Permit validity	Until further notice
Acceptable waste types	Hazardous waste
Waste restrictions	Forbidden materials: explosives, radioactive materials
Restrictions for importing waste from other countries	In accordance with the EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Requirements on delivery and reception of waste	All waste has to be declared in advance. The facility will not receive any waste loads without a preliminary declaration procedure and registration.
Control of emissions	Not applicable
Control of water discharges	For non-polar aliphatic hydrocarbons a maximum limit of 20 mg/l has been set in the environmental permit nr. M 7-01 dated 2002-01-15
Residues	Oil sludge to incineration in licensed facilities, metal residues from oil filters and paint cans for recycling.
Control, monitoring and reporting	Monitoring of water discharge continuous, either continuous analysers or continuous sampling. The controlling authority will have its own tests occasionally. In case of irregularities and problems in operation that may lead to exceeding of license conditions, the company will report to the controlling authority without delay.
Treatment cost/gate fee for hazardous waste	All pricing is based on a request for the treatment of a certain waste type and amount.

Source: www.ragnsells.se

HAZARDOUS WASTE TREATMENT FACILITY OVERVIEW

Sweden Ragn-Sells AB



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE OVERVIEW

Sweden Svensk Oljeåtervinning AB

Svensk Oljeåtervinning AB

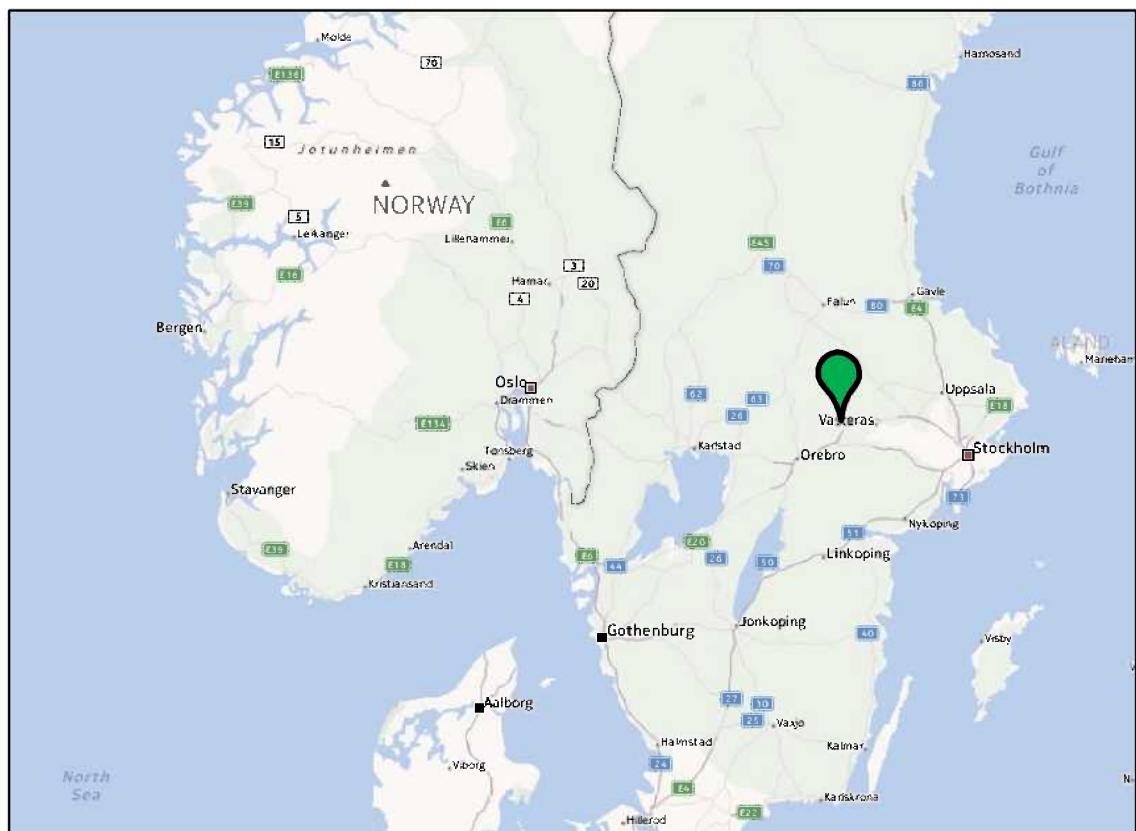
The company collects waste oil and purifies it for further reuse.

Country	Sweden
Name of facility	Svensk Oljeåtervinning AB
Ownership	Private persons
Contact information	Email: urban.tillman@svenskoljeater.se Web-site: www.svenskoljeater.se Address: Cisterngatan 7, 721 32 Västerås Tel: +46 8 560 20204 Fax: +46 21 12 40 85
Technology	
Method of treatment	Waste oil treatment and recycling
Capacity	Permit for 35,000 tonnes/year of waste oil. Actual treatment of waste oil 20,000 tonnes in the year 2011
Energy production	No energy production
Information about the license/permit	
The licensing authority	Stockholms Tingrätt
The controlling authority	Länsstyrelsen Västmanlands län
Permit number	5.10.2005 nr. M 11781-05
Permit validity	Until further notice
Acceptable waste types	Waste oil
Waste restrictions	Only waste oil. PCB concentration below 5 ppm
Restrictions for importing waste from other countries	In accordance with the EC Regulation No 1013/2006 on Shipments of Waste and the Basel Convention
Requirements on delivery and reception of waste	Reception by an advance notice only
Control of emissions	The permit nr. M 11781-05, dated 5.10.2005 stipulates that in case of odours the company is obliged to take immediate measures to eliminate the problem
Control of water discharges	The permit nr. M 11781-05, dated 5.10.2005 gives maximum permitted limits for water discharges for a number of heavy metals, chemical oxygen demand and hydrocarbons
Residues	In the Environmental Report year 2011 following waste amounts were reported: <ul style="list-style-type: none"> • Filter sludge 5,8 tonnes, delivered to SAKAB for incineration • Process water 4890 tonnes, delivered for further treatment to SAKAB, Dewatech, SRV, Ragn-Sells
Control, monitoring and reporting	Annual environmental report to the controlling authority including a declaration of how the company will reduce energy consumption in its processes and how the impact of the transportation of waste to the nature will be reduced. In addition, in case there are carcinogenic, persistent or other long term harmful impacts causing chemicals, the company must declare how they are going to either reduce their use or otherwise minimize their harmful effects.
Treatment cost/gate fee for hazardous waste	0 – 4000 Skr (0-464 €)/m ³ of waste oil – oil/water mixture - oil sludge (Price list 1.1.2011)

Source: www.svenskoljeater.se

HAZARDOUS WASTE TREATMENT FACILITYOVERVIEW

Sweden Svensk Oljeåtervinning AB



The location of the facility (Base map copyright © 2012 Nokia)

HAZARDOUS WASTE OVERVIEW

Range of treatment prices

4. Range of treatment prices

Price lists of the companies are usually quite detailed and the price structure consists of several parameters, type of packages, concentration of impurities such as water concentration, halogens, solid material etc. Often the companies only quote the price case by case depending on the individual waste amount. Typically water-free waste oil from engines will be collected free or even the treatment company may pay for it. The gate fee may go up to 1000 euros/ton. In that case the waste is for instance obsolete pesticide waste or PCB containing equipment or pure PCB oil.

Below are some examples of treatment prices directly from the companies or from their web pages. In some cases the prices are given by customers who use the services of the listed companies. The prices indicated here are from the year 2012 and some from the year 2011. Price changes within the last two years have been minor.

Denmark

Examples of gate fees in Denmark:

Liquid/pumpable waste oil EWC code groups 12 and 13: 730 DKr/ton (ca. 100 €/ton). Range 730-3900
Non-pumpable oil sludge 3900 DKr/ton (ca. 525€/ton)

Wastewater containing water-based paint residues or residues of inks. EWC-code group 08
1,250 DKr/ton (ca. 168€/ton)

Denmark has an Environmental Fund which collects a tax of 0.30 DKr/l (ca. 0.04€/l) of produced or imported lubricating oil as environmental fee. The fee covers the cost of transportation, processing, and administration of the collection of waste oil which is primarily re-refined to new base oil. In case of small amounts, there may be a 300 DKr/collection (ca. 40€) extra charge.

Good quality used lubricating oil may have a value and the price will be determined in the market, i.e. the processing company may have to pay for the waste oil.

Estonia

Examples of gate fees in Estonia:

Waste oil in bulk 30 €/ton

Tank bottom sludge 250 - 300 €/ton

Oil, oil products, oil- water mixtures, oil content less than 80%, 100 €/ton

Low flash point fuel residues 160 €/ton

Liquid waste solvent and paint 0.25 € / kg

Paints and solvents sludge or solid in 200 litre or larger container (halogen free) 450 €/ton

Halogenated solvents 960 €/ton

Oil Filters 0.28 EUR / kg

Finland

Some price examples in Finland:

Used lubricating oil: free of charge

Water-oil mixture (bilge water, oil emulsions, low oil concentration): 200 €/ton

Tank bottoms, solid oil waste: 500 €/ton

Solid paint waste mixed with solvents, water: 1000 €/ton

HAZARDOUS WASTE TREATMENT FACILITIES OVERVIEW

Range of treatment prices

Finland collects waste charges from produced and imported lubricating oils. The prices of lubrication oils include oil waste charges of 5.75 euro cents per kilo. The income from these charges is used to cover the costs of managing oil wastes and cleaning up soil and groundwater contaminated with oil.

Germany

A given price range is from 0 €/ton up to 900 €/ton, where the 0 price is for good quality waste oil and the highest price is for PCBs and certain obsolete pesticides.

Latvia

No information available

Lithuania

An example is given for bilge waters and other water-oil mixtures from ships: treatment cost is 12 €/m³.

Norway

Information given by customers indicate a price range for water-oil mixture with high water concentration and oil emulsions to be 2200 – 2400 NKR/ton (ca. 295-320 €/ton).

For paint waste containing paint cans the price range is 5000 – 6000 NKR/ton (ca. 670 – 800 €/ton).

Poland

Treatment fee for bilge water and other water-oil mixtures from ships is 70-130 PLN/m³ (app. 17-30 €/m³). For solid organic waste, like paint residues the treatment price is up to 1000 PLN/ton (ca. 245 €/ton).

Russia

No information available

Sweden

Price range for waste oil – oil/water mixture - oil sludge is 0 – 4000 SKr (0-464 €)/m³

Price ranges for some organic hazardous waste types

Below is a table showing price ranges for some organic hazardous waste types in the area.

Waste type	Price, Euro	
	Incineration	Other treatment
Used lubricating oil		Free of charge, or the treatment company pays the market price
Water-oil mixture (bilge water, oil emulsions, low oil concentration)		12 – 320
Tank bottoms, solid oil waste	250 - 525	
Paint waste solid, mixed with solvents or water	245 - 1000	
Paints, solvents, mixed with water, liquid, non-halogenated	168 - 250	
Paints, solvents, liquid, halogenated	500 - 960	
PCBs, obsolete pesticides	500 - 1000	

HAZARDOUS WASTE TREATMENT FACILITIESOVERVIEW

Range of treatment prices

Only companies that have a fully licensed dedicated high temperature incinerator with a temperature range up to 1200 °C and a retention time of minimum 2 seconds in the high temperature range will accept halogenated solvents, PCBs and obsolete pesticides.

HAZARDOUS WASTE OVERVIEW

Quality Assurance

5. Quality Assurance

This report aims to present up to date information about the facilities collecting and treating hazardous waste in the selected 10 countries. As the nature of the information concerning the processes and permits of each facility is not stable, i.e. each company tends to improve and expand their activities, or by merges and other arrangements the ownership and localities of facilities may change, it is obvious that at the course of time some of the data presented in this report may become obsolete. In addition, permits usually have a limited time of validity and often the permit conditions will change partially when the permit is renewed.

The information for this publication has been collected from several sources. Direct information from companies has to be regarded reliable at the time of the communication. Information from company web pages should be reliable as well keeping in mind that in some cases the information may be old and new processes or permit conditions have not been added in the web pages.

Concerning the official information collected from the web pages of each country's ministries or other controlling or permitting authorities should be regarded as reliable and up to date at the time when the data was collected.

In spite of the above comments, this report should give a good overview of potential hazardous waste treatment companies in the selected area with contact information to each facility to help producers of hazardous waste to find an acceptable and approved disposal facility for their wastes.