

**THE FREEPORT OF RIGA
ENVIRONMENT REPORT
2010**

Riga, 2011

THE FREEPORT OF RIGA ENVIRONMENT REPORT 2010

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The Freeport of Riga Authority

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Table of Contents

| | |
|--|----|
| ABBREVIATIONS USED IN THE TEXT | 4 |
| INTRODUCTION | 5 |
| 1. REVIEW OF BINDING REGULATORY ENACTMENTS | 6 |
| 1.1. International Documents | 6 |
| 1.2. Regulatory Enactments of the Republic of Latvia | 7 |
| 1.3. Binding Regulations of Riga Municipality | 9 |
| 2. GENERAL CHARACTERISTICS OF THE FREEPORT OF RIGA | 10 |
| 2.1. Port Water Area..... | 10 |
| 2.2. Land Territories..... | 10 |
| 2.3. Terminals and their Performance Indicators in 2010 | 12 |
| 3. ENVIRONMENTAL GOVERNANCE AT THE FREEPORT OF RIGA | 15 |
| 3.1. Environment Management Documents Elaborated for the Freeport of Riga... 15 | |
| 3.3. Environmental Risks and Risk Mitigation Measures..... | 19 |
| 3.3.1. Industrial Accident Risk Objects | 19 |
| 3.3.2. Governance of Activities involving Hazardous Substances | 20 |
| 3.3.3. Action Plan to Combat Accidental Pollution at the Freeport of Riga | 21 |
| 4. ENVIRONMENT QUALITY ON THE TERRITORY OF THE FREEPORT OF RIGA IN 2010 | 23 |
| 4.1. Monitoring Systems | 23 |
| 4.2. Air Quality..... | 24 |
| 4.3. Quality of Soil, Ground and Underground Waters | 27 |
| 4.4. Rehabilitation of Polluted Territories..... | 29 |
| 4.5. Surface Water Quality..... | 31 |
| 4.6. Waste Water Management | 33 |
| 4.7. Ship-generated Waste Management..... | 33 |
| 4.8. Chemical Substance or Mix Spill Cases in 2010 | 35 |
| 4.9. Noise and Vibration | 35 |
| 4.10. Protected Territories and Biodiversity | 36 |
| 5. SUMMARY | 37 |

ABBREVIATIONS USED IN THE TEXT

| | |
|----------------------------|---|
| Development program | The Freeport of Riga Development Programme 2009-2018 (PDP) |
| CDP | Civil Defence Plan |
| ACC | Activity Coordination Centre |
| SR | Security report |
| DWT | Deadweight tonnage |
| EC | European Commission |
| EU | European Union |
| HELCOM | Helsinki Commission |
| IMO | International Maritime Organization |
| ISO | International Organization for Standardization |
| EIA | Environmental Impact Assessment |
| SPNT | Specially protected nature territory |
| VTS | Vessel Traffic Service |
| CM LR | Cabinet of Ministers of the Republic of Latvia |
| LEGMC | State LLC "Latvian Environment, Geology and Meteorology Centre" |
| PM₁₀ | Particulate matters (size up to 10 µm) |
| PM_{2,5} | Particulate matters (size up to 2,5 µm) |
| IAPP | Industrial Accident Prevention program |
| RCC | Riga City Council |
| FPR | The Freeport of Riga |
| FPRA | The Freeport of Riga Authority |
| Ro-Ro | Roll on /Roll off- vessels designed to carry wheeled cargo such as automobiles, trucks, semi-trailer trucks, trailers or railroad cars that are driven on and off the ship on their own wheels. This is in contrast to lo-lo (lift on-lift off) vessels which use a crane to load and unload cargo. |
| ESB | Environment State Bureau |
| SES RED | Regional Environment Department of State Environment Service |

INTRODUCTION

The purpose of the annual Environment report, prepared by the Freeport of Riga Authority, is to provide the freely accessible information about environment quality in the Freeport and work, that is carried out by the Freeport Authority to make Riga port ecologically safe and clean, to all interested parties.

The Environment Report 2010 contains information about international and Latvian regulatory enactments, binding regulations issued by the municipalities, the documents, that were elaborated for the Freeport, as well as information related to environment management at the Freeport of Riga, environment quality at the Freeport in 2010, environmental risks, and environment improvement and risk mitigation activities that were implemented.

Information related to the Freeport of Riga and the FPRA is available on the webpage of the Freeport Authority www.rop.lv.

The FPRA is the member of the Sustainable Development Committee of the ESPO (*European Sea Ports Organization*), receiving new information on European Union environment legislation, on European ports experience and activities in the environment protection field. The Freeport of Riga Authority actively co-operates with other international organizations – the International Association of Ports and Harbours (IAPH), the Baltic Ports Organization (BPO) and the Cruise Europe Organization.

1. REVIEW OF BINDING REGULATORY ENACTMENTS

1.1. International Documents

This section reviews only main international documents related to environment quality in the ports.

International Convention for the Prevention of Pollution from Ships, 1973, and its Protocol of 1978 (MARPOL 73/78). MARPOL 73/78 is the main international document, covering prevention of pollution of the marine environment by ships from operational or accidental causes. Latvia has ratified MARPOL 73/78 Convention in 1992. Convention requires governments of the states, that have ratified Convention, to ensure activities of ship oily water treatment plant in the port. The plant shall have the relevant capacity to meet the vessel demands and avoid unnecessary delay of the vessel in the port.

Navigation is a sphere of international importance, regulated by global regulations, that are issued by special organizations, including **International Maritime Organization - IMO**; (<http://www.imo.org/>), that has adopted more than 50 international legal instruments (conventions and protocols) and more than 930 resolutions, that have to be incorporated into national legislation. The Organization was founded in 1959 with the aim to enhance international navigation safety, prevent marine pollution, ensure international maritime traffic and provide legal framework. Latvia has been a member of IMO since 1993.

1992 Convention on Baltic Sea Region Marine Environment Protection (Helsinki Convention). Latvia has ratified this convention in 1994. Helsinki Convention is an international document related to protection of the Baltic Sea environment. On November 15, 2007 in the city of Krakow, Poland, Ministers of Environment of the Baltic States and representatives of the European Commission approved a strategic action plan to mitigate the Baltic sea pollution and by 2021 reconstruct its good ecological condition. The aim of **HELCOM Baltic Action plan** is to solve the key problems related to the Baltic sea environment.

International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC). It is Convention of International Maritime Organization. Latvia has adopted this Convention in 2000. Parties to the OPRC convention are required to establish measures to be ready and to deal with pollution incidents, either nationally or in co-operation with other countries.

Protocol of 2003 to the International Convention on the Establishment of an International Fund for Compensation for oil Pollution Damage, 1992. The Protocol requires full compensation for losses caused by oil pollution damage or to the victims of pollution damage as well as facilitating victims' problems in cases when there is risk of available compensation sum being inadequate or unobtainable to cover reasonable claims in full.

International Maritime Dangerous Goods Code (IMDG Code). The Code was developed by the IMO's Maritime Safety Committee in close co-operation with the

United Nations Committee of Experts on the Transport of Dangerous Goods as a uniform international code for the transport of dangerous goods by sea covering such matters as packing, container traffic and stowage, with particular reference to the segregation of incompatible substances. Latvia has adopted the IMDG code in 1993.

1.2. Regulatory Enactments of the Republic of Latvia

All valid environment and nature protection regulatory enactments are binding for any economic and business activities; including activities that are carried out on the Port territory (all regulatory enactments related to environment protection are available on the web-page of the Ministry of Environmental Protection and Regional development www.varam.gov.lv). Specific requirements for the ports are stipulated by regulatory enactments related to handling waste and chemical substances. The present section provides an overview of the main regulatory enactments of the Republic of Latvia related to environment management at the FPR.

“Law on Ports” (in force since 26.07.2004, with amendments issued up to 29.12.2010) stipulates that the Freeport Authority shall control the protection of the port territory against pollution, ensure elimination of the consequences of pollution in the port and participate in the elimination of the consequences of marine pollution, as well as organize reception of ship-generated waste and polluted water and prepare a management plan for ports in respect of ship generated waste, and in the framework of its competence shall control compliance of the port undertakings’ activities with the valid laws, the Cabinet regulatory enactments and the Regulations of the Port Authority, i.e. the FPRA Regulations.

The **“Law on Maritime Administration and Marine Safety”** (in force since 03.12.2002, with amendments issued up to 29.06.2010) stipulates institutional scheme of public maritime administration, ensures implementation of binding international standards and provisions related to marine safety and security and compliance with the aim to prevent marine pollution by ships and make maritime traffic more efficient.

Regulations of the Cabinet of Ministers No.82 **“Standard Requirements for Action Plan Elaboration to Combat Accidental Pollution in Ports, at Berths, Berth Groups and at Oil or Chemical Substance Terminals”** (05.02.2008) (in force since 09.02.2008 with amendments issued up to 09.03.2010) determine requirements that have to be observed by the Freeport Authority elaborating the Action Plan with the aim to eliminate accidental pollution in ports, at berths, berth groups and at oil or chemical substance terminals. Introduction and implementation of the said Action Plan shall be controlled by the State Environment Service.

The law **“On Pollution”** (in force since 01.07.2001, with amendments issued up to 30.12.2010) is the main legislative act that regulates legal and prohibited activities to reduce industrial pollution. The main goal of the said law – to prevent or mitigate pollution impact on human health, property and environment, eliminating negative consequences. The law stipulates requirements related to pollution prevention and control that shall be observed by the operator – a physical or a legal person, that is carrying out polluting activities or is responsible for technical maintenance of such

activities, or has economic impact on the relevant polluting activities. On the territory of FPR the territory leaseholders are regarded as operators.

Waste management field is regulated by the **“Waste Management Law”** (in force since 01.03.2001, with amendments issued up to 29.12.2010) as well as the relevant Cabinet Regulations. Article 4 of the Law stipulates that waste management shall be implemented with no harm for human life and health, and private property. Besides, there shall be no negative impact on environment.

Regulations of the Cabinet of Ministers No.455 **“Procedure of Reception of Ship-generated Waste and Polluted Waters and the Order of Elaboration of Ship-generated Waste Management Plan”** (in force since 02.11.2002, with amendments issued up to 09.06.2009) determine procedure of reception of ship-generated waste and polluted waters as well as the order of elaboration of ship-generated waste management plan.

Cabinet Regulations Nr.1060 of 15.09.2009 **“Regulations on Hazardous and Polluting Cargo Handling and Control in Ports”** (in force since 19.09.2009 with amendments issued up to 01.03.2011) determine requirements that shall be observed in regards of hazardous and polluting cargo handling in ports (loading and unloading operations on board the ship, to railway tanks, trailers, cargo containers or other transport vehicles, cargo relocation in a warehouse, on a terminal territory or on board the ship, including delivery, dispatch and storage of such cargo on the port territory with the aim to tranship it from one vehicle to another), as well as control of the compliance with the mentioned requirements.

The port merchant, that is involved in hazardous and polluting goods handling, is responsible for handling safety and compliance with these requirements, as well as for safety and health protection of the employees that are involved into cargo handling operations. The port merchant nominates the person that is responsible for cargo operations with dangerous and polluting cargo.

In accordance with the provisions of the Cabinet Regulations No.1082 **“The Procedure of Applying for and Issuing Permissions to Carry out Polluting Activities of Categories A, B and C”** (30.11.2010) the enterprises, that use boiler houses of certain capacity, carry out handling operations of certain turnover or sewage treatment in certain amounts, and other similar activities, must receive permissions to carry out polluting activities of categories A, B or C category certificate from the SES Lielrigas RED.

Operation of the port and enterprises, working in the port, is regulated by other LR normative enactments as well.

1.3. Binding Regulations of Riga Municipality

On 06.04.2004 the Riga City Council has approved Regulations Nr.95 “**Regulations of the Freeport of Riga Authority**”, that provide detailed description of the FPRA status, competence, functions and management structure (www.rop.lv).

The Article 5 of the Riga City Council Regulations Nr.42 “**Regulations of the Freeport of Riga**” (07.03.2006) stipulates environment protection requirements related to waste management , liquid cargo - oil and chemical products transportation and transshipment, as well as dry bulk cargo transshipment in the port. It is prohibited to discharge waste and sewage waters from shore objects and vessels in the port water area and on the port roads. Washing of a vessel’s hull in the port as well as operation of incinerators is prohibited.

The Regulations also stipulate that oil and liquid chemical substances may be shipped to/from the port only by double-bottom or double-hull tankers in compliance with the MARPOL requirements. Prior to commencing cargo operations, all oil tankers and chemical tankers with polluting and noxious liquid cargo must be buoyed off by booms, except during a period of ice. Under adverse weather conditions with wind force of 10 m/s and more, loading of dust-raising bulk cargoes shall be suspended.

Binding Regulations of Riga City Council Nr.34 “Regulations of Riga Territory Use and Construction within its Limits” of 20.12.2005 (amended by Binding Regulations of Riga City Council Nr. 5 of 18.08.2009 “Amendments to Binding Regulations of Riga City Council Nr.34 of 20.12.2005 “Regulations of Riga Territory Use and Construction within its Limits”) stipulate requirements for use of land plots, structures, constructions and houses on all territory of the Freeport of Riga.

2. GENERAL CHARACTERISTICS OF THE FREEPORT OF RIGA

The Freeport of Riga is located in the southern part of the Gulf of Riga of the Baltic Sea and on the adjacent territories on the left and on the right banks of the River Daugava. The lower reaches of the River Daugava within approximately 14.1 km and the River Daugava tributaries - Buļļupe, Hapaka ditch, Mīlgrāvis and Sarkandaugava arm of the river are included into the port water area. Relief of the Freeport land territory is flat with decline towards the bank of the River Daugava. The major part of the present land territory was created during the last 100 years. Due to hydro-technical works' impact hydro-morphological structure of the River Daugava was modified, and sandbanks, semi-peninsulas and small islands of alluvial lands have become regular land territories, that can be used for construction and port operation purposes.

The Freeport of Riga borders with Eksportosta and Andrejsala, where port terminals, using the port water area, are located.

2.1. Port Water Area

The territory of the Freeport water area is 4386 ha, including outer roads in the Gulf of Riga – 3115 ha, inland waters – 1271 ha. Hydro-technical structures include the main fairway, access to the berths, shore reinforcement, berths, ship turning basins , Eastern (Mangaļsala) and Western (Daugavgrīva) jetties, flow regulating dams, breakwaters, as well as navigation equipment and tools, that are transferred to possession of the Freeport of Riga Authority. Berths can be in possession of other legal or physical persons.

The main fairway includes Access canal to Riga port (from reception buoy “B” up to Passenger terminal), Mīlgrāvis canal and Sarkandaugava fairway. Vessel turning basins are located near Riga Passenger Terminal, Andrejsala, Eksportosta, Kundziņsala, Sarkandaugava, Rīnūzhi, Mīlgrāvis – Sarkandaugava canal, Krievu Island and Daugavgrīva. Access fairways have different width and depths, and they are created to ensure vessel traffic up to the berth in compliance with the berth width and length. It is possible to handle general cargo, dry bulk cargo, and liquid bulk cargo, except crude oil, at the Freeport of Riga berths. Maximum vessels' draught at berth ZO-19 is 14 m.

The port water area is regularly dredged. In 2010 dredging was performed at Pasazhieru Port, Sarkandaugava canal, Pilumuizha and Kundziņsala regions, as well as from the reception buoy up to Zhurku island on the total area of 1 797 480 m². The excavated soil is disposed at an interim spoil ground site on Kundziņsala.

2.2. Land Territories

According to administrative structure the territories, possessed by the Freeport of Riga Authority, are included into Riga city Ziemeļu and Kurzemes regions. Due to the fact that the Freeport of Riga is located along the banks of the River Daugava, i.e. in the

city of Riga, port operation and relevant activities have become part and parcel of the city life.

Strictly defined Freeport territory use in regards of handled cargo or enterprise activity does not exist – in fact, liquid cargo, dry bulk cargo and general cargo terminals and enterprises are not located in the same area, but are scattered around various port regions. Major part of enterprises has diversified their activities; therefore territories of these enterprises can be classified as mixed type cargo terminals. It should be noted, that changing economic situation resulted in operators' change at the FPR, as well as produced handled cargo type change.

In general the right bank of the River Daugava, though it is more populated than the left one, is more actively used for port enterprises operation compared to the left one. The biggest stevedore companies are located on the right bank of the River Daugava.

Table 1

Seabound cargo handled at the port terminals

| Handled cargo type | The right bank of the River Daugava | The left bank of the River Daugava |
|--------------------|-------------------------------------|------------------------------------|
| General cargo | Kundziņsala | Podrags |
| | Sarkandaugava S | Krēmeri |
| | Jaunmīlgrāvis N | Krievu Island Daugavgrīva |
| | Vecmīlgrāvis SE | - |
| | Vecmīlgrāvis S | |
| Dry bulk cargo | Rīnūži | Daugavgrīva |
| | Eksportosta* | - |
| | Andrejsala* | |
| Oil products | Kundziņsala SW | - |
| | Sarkandaugava | |
| | Jaunmīlgrāvis | |
| | Rīnūži | |
| Liquefied gas | - | Krievu Island |
| Mixed type cargo | Rīnūži | Krēmeri |
| | Mangaļsala | Krievu Island |
| | | Daugavgrīva |

* - administratively the marked territories are located outside the Port borders, but the enterprises operating there use port infrastructure (berths etc.)

Certain, comparatively small territories, are used for recreation purposes, - yacht marinas' development has been commenced.

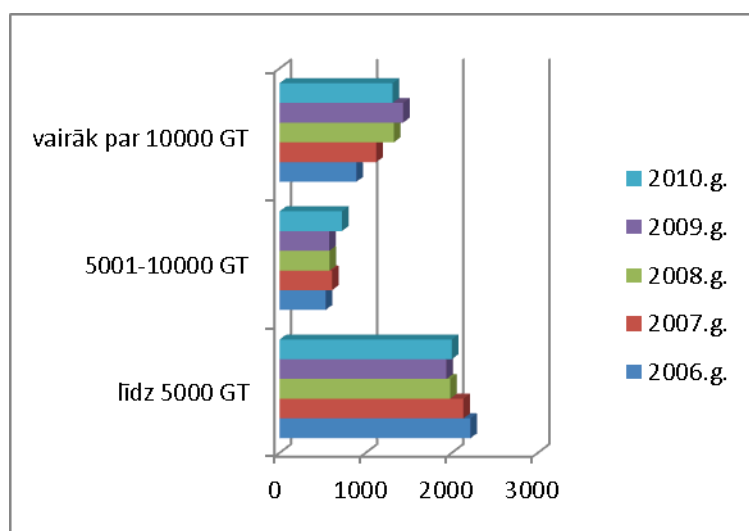
In compliance with Development Programme and in the framework of its implementation the area of the territories developed by the Port shall grow. In 2010 the largest land preparation work was performed at Krievu island and Kundziņsala (land reclamation).

Currently there is a lot of territories at the port, that are not used, or it is impossible to use them for port functions fulfilment- specially protected nature territories, certain

allotment territories, as well as single houses' residential areas in Kundziņsala and Voleri. A part of the territory of the monument of national importance (Nr. 8538) "Daugavgrīva Fortification complex" is located in Mangaļsala and Daugavgrīva. There is a territory of the historical monument of local importance (Nr. 8539) "Kometforts" in Daugavgrīva. Natural reserve „Krēmeri” and part of “Piejūra” Natural Park territory (Milestības Island) are located on the FPR territory. The Freeport of Riga territory borders with nature reserve “Vecdaugava” and nature park “Piejūra”.

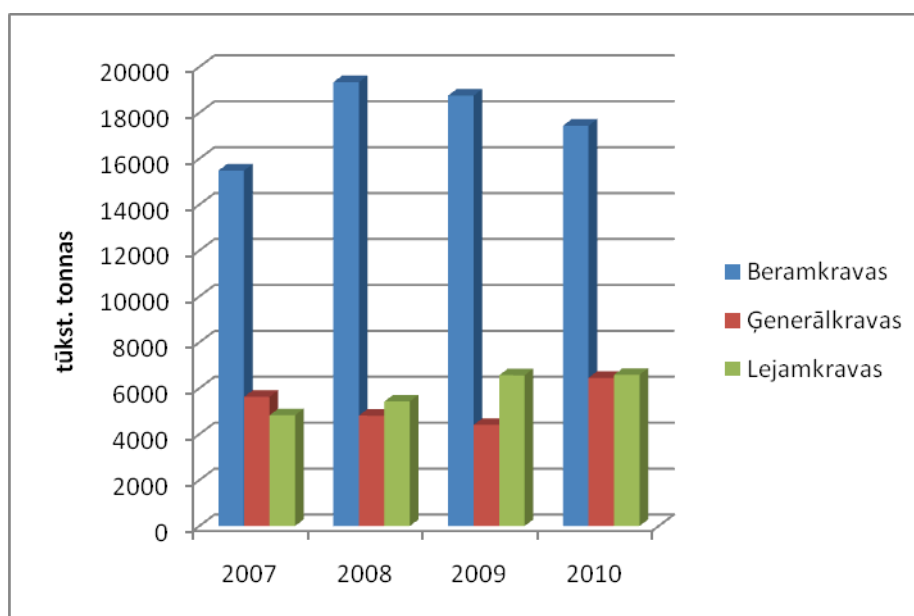
2.3. Terminals and their Performance Indicators in 2010

One of the main port performance indicators is navigation intensity. In 2010 4040 vessels called Riga port, that is by 2, 2 % more than in 2009. With the aim to enhance navigational safety and environment quality it is necessary to ensure that vessels with bigger tonnage call the FPR. Vessel share in respect of GT per year is provided on ill.1.



Ill. 1 Vessel share (%) in respect of GT at the Freeport of Riga

Sea-bound cargo volume at the Freeport of Riga constantly grows reaching 30,48 million tons in 2010. In 2010 total volume of handled cargo has grown by 2, 5 % compared to 2009.



Ill. 2. Comparison of sea-bound cargo turnover, 2007 – 2010

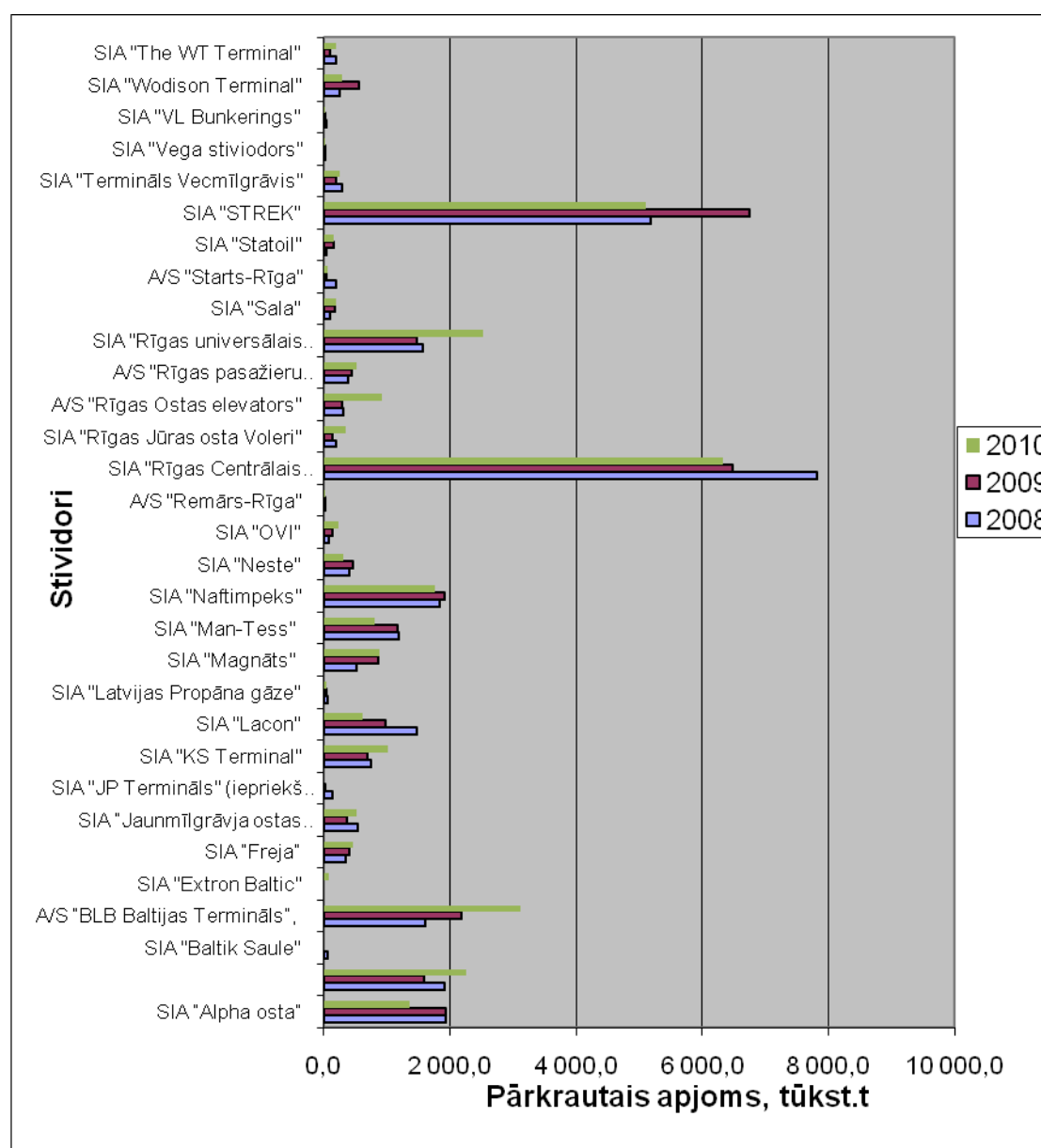
29 stevedore companies, handling dry bulk cargo, general cargo and liquid bulk cargo operated at the Freeport of Riga in 2010.

Liquid bulk cargo. Terminals, that are handling and storing oil products and liquefied gas, are located at present on the territory of the Freeport of Riga. In 2010 the volume of liquid bulk cargo reached 6584, 9 thousand tons - 22 % of all cargo types. The biggest volume of cargo is handled by JSC “BLB Baltijas Termināls” and “Naftimpeks” Ltd.

General cargo. In 2010 6453 thousand tons of general cargo were handled. Major part of enterprises is involved in general cargo (containerized cargo, timber and lumber, various metals) handling, and they are located throughout FPR territory. The biggest volume of general cargo was handled by “Baltic Container Terminal” Ltd.

Dry bulk cargo. In 2010 17 437, 7 thousand tons of dry bulk cargo were handled. The following dry bulk cargo - coal, woodchip, mineral fertilizers, peat, wheat, sugar etc. - are handled at the Freeport of Riga. The biggest volume of dry bulk cargo is handled by “Rigas Universālais termināls” Ltd, “Alpha osta” Ltd, “KS Terminal” Ltd. A certain part of the total dry bulk cargo volume is handled at the FPR berths in Eksportosta and Andrejsala (“Strek” Ltd, “Rigas Centrālais Termināls” Ltd).

Comparative volumes of cargo handled by the stevedore companies in 2008- 2010 is provided on ill.3.



III. 3 Comparative volumes of cargo handled by the stevedore companies, 2008- 2010.

3. ENVIRONMENTAL GOVERNANCE AT THE FREEPORT OF RIGA

Due to the fact that the FPRA leases land to enterprises for their economic activities, both the FPRA and relevant enterprises are responsible for environment condition at the Freeport of Riga. According to Land lease agreement provisions every leaseholder of each territory is responsible for compliance with the provisions of regulatory enactments, related to environment quality as well as for obtaining necessary environment permissions for their operation. Fulfilment of the said requirements is controlled by the State Environment Service (SES) Marine and Inland Waters Administration (MIWA) and SES Lielrigas Regional Environment Department (RED). The Freeport of Riga Authority in the framework of its competence provides for regular field inspections of all the Freeport territory, controlling compliance with the Land lease agreement provisions as well as fulfilment of requirements related to environment protection.

3.1. Environment Management Documents Elaborated for the Freeport of Riga

Quality management system in compliance with the requirements of ISO 9001:2008 international standard and Environment management system in compliance with the requirements of ISO 14001:2004 international standard were introduced and are maintained by the Freeport of Riga Authority. “*Bureau Veritas Quality International*”, one of the leading companies in the field of compliance assessment, provides regular environment management system audit.

The FPRA has elaborated and adopted its environment policy in the framework of Environment management system with the aim to attain the following objective: to make the Freeport of Riga one of the most environment -friendly ports in the North-Eastern region of the Baltic Sea. One of the activities to attain the objective is to provide information to the public and partners with respect to environmental management policy, goals, tasks and environment protection activities that have been performed. In compliance with those activities the Freeport of Riga Environmental Report for 2010 was elaborated.

The **Freeport of Riga Development Programme 2009-2018 (PDP)** came into force after its approval by the Ports Council in 2009. (The Freeport of Riga Development Programme is available at the Freeport of Riga Authority web-page - <https://www.rop.lv/lv/klientiem-un-investoriem/attistibas-programma.html>).

The **Environmental Report** is part of the Freeport of Riga Development Programme 2009-2018. The prime purpose of the Environmental Report of PDP is to ensure that all environmental and social considerations are taken into account during the implementation of the Development Programme. (Environmental Report is available at the Freeport of Riga Authority web-page <http://www.rop.lv/lv/par-ostu/vides/vides-parskati.html>).

The **Environmental Management Plan (EMP)** that includes environmental impact mitigation and monitoring activities was elaborated in the framework of the Environmental Report. The purpose of the Environmental Management Plan is to define strategic-level environmental impact mitigation and environmental monitoring activities in connection with the key impacts from planned port operations, that were identified in the process of elaboration of the Environmental Report of Development Programme, as well as in the process of consultations with the stakeholders.

In 2009-2010 the FPR has already implemented certain part of the activities that are included into Environmental Management Plan, elaborated in the framework of the Environmental Report. Review of implemented measures in compliance with EMP references and topics is presented in Table 2.

Table 2

Measures implemented by the FPR in 2009-2010 in compliance with the Environmental Management Plan.

| Reference | Topic | Completed in 2009 | Completed in 2010 |
|-----------|--|---|---|
| EP1a | Air, climate change | The FPRA together with German partners elaborated and submitted project application related to research on cold ironing system efficiency for cruise vessels. Project application was not approved. | |
| EP1d | General Environment Protection | Every year the FPRA submits a prepared statement and available information on potential environmental impact assessment as well as provides information to the businesses on best industry technologies and practices available. | |
| EP2f | Biodiversity and Nature Conservation | In compliance with the ornithologists recommendations biotope reconstruction measures were implemented on Mīlestības Island. In accordance with the elaborated recommendations in 2009 bulrush and reed was cut in the eastern and northern part of the nature reserve territory “ Krēmeri ” of 2,7 ha. The cut plants were collected and transported outside the territory of the reserve. Ornithologists inspected Zhurku Island and submitted recommendations related for its further management to attract the Laridae. | The inspection of birds’ favourite territories in the FPR was carried out and 2010 data on nesting sites in NR „Krēmeri”, Mīlestības Island, Zhurku Island were collected. Black headed gull colony (20-30 pairs) was detected in NR “Krēmeri” and two previously unknown nesting sites of river tern, European protected species, were found (on roofs in Mangaļsala E and Kundziņsala E). Cutting of bulrush and reed is continued on the nature reserve territory “ Krēmeri ” of 2,7 ha. The cut plants are collected and transported outside the territory of the reserve. |
| EP3b | Soil, Water and Groundwater Protection | The FPRA worked together with the SES to prepare historically polluted territories’ treatment project (Latvian – Swiss cooperation program). | The FPRA continues its cooperation with the SES and Riga City Council on application that has to be submitted to the Swiss Embassy for historically |

| | | | |
|------|---------------------|---|--|
| | | | polluted Sarkandaugava territories' treatment (territories of „VL Bunkering”Ltd, „Eko osta” Ltd, „Woodison terminal”Ltd, „OVI” Ltd. |
| EP3c | Landscape/ Water | The FPRA carries out regular territories' inspection with the aim to eliminate potential pollution risk. The FPRA organized waste collection activities on protected SPNT territories of “Krēmeri” and Mīlestības Island. | |
| EP3c | Land Use | In 2009 “Action Plan to Eliminate Accidental Pollution at the Freeport of Riga “was approved. | In 2010 the FPRA Security Service Coordination Centre, that is operating around the clock, was organized, “Action Plan to Eliminate Accidental Pollution at the Freeport of Riga “was updated. |

3.2. Environmental Aspects of Port Development Projects

Due to the fact that the Freeport of Riga is located in the vicinity of the city centre, port operation and related activities are part and parcel of the city's everyday life. That is why in the process of planning its development the FPR takes into account sensitive territories - specially protected natural territories as well as residential areas that were created close to the Port. Environmental Impact assessment is elaborated for the objects with potential considerable environmental impact as well as for planning and development documents with the aim to identify possible impacts at the early planning or designing stage and plan relevant procedures or technologies for its elimination or reduction.

Starting its activities on the Freeport territory every operator shall comply with the Law “On Environmental Impact Assessment” of 14.10.1998 and relevant CM Regulations, and shall inform the relevant regional environment department about equipment/vehicles and the FPRA planned port development project submitting a written application. The initial Environmental Impact Assessment is performed by the Regional environment department and the results of the initial Assessment together with the application are sent to the State Environment Bureau for decision making purposes. Provided the State Environment Bureau adopts a decision to apply Environmental Impact Assessment procedure, the initiator of the planned activity shall perform complete assessment procedure. Environmental Impact Assessment ensures right choice of the best available technologies for the planned activity with the aim to eliminate harm for environmental quality and population health. The FPRA provides technical support and advice to operators in respect of receiving permissions, licenses and preparing Environmental Impact Assessment.

The table 3 provides a review of the EIA procedure status in regards of the newest Port development projects.

Table 3

The FPR projects - EIA procedure status

| Nr | Project title, implementing body | Program for EIA performance issued * | Procedure (information) | ESB opinion received |
|----|---|--------------------------------------|---|----------------------|
| 1. | Enlargement of oil product terminal in Riga, "Naftimpeks" Ltd | 22.12.2009. | Final report elaborated | 16.08.2010. |
| 2. | The Freeport of Riga access canal reconstruction, the FPRA | 16.04.2009. | Final report elaborated | 21.04.2011. |
| 3. | Development of oil and chemical product handling terminal, "Baltic Oil terminal" Ltd | 02.07.2009. | Final report elaborated being assessed by the ESB | |
| 4. | Development of dry bulk cargo terminal on the territory of the Freeport of Riga, "Senpasaule" Ltd | 11.08.2010. | EIA report is being assessed by the ESB | |
| 5. | Development of mineral fertilizers handling and storage terminal, "Riga fertilizer terminal" Ltd | 29.09.2010 | EIA report is being assessed by the ESB | |
| 6. | Construction of oil product handling terminal, JSC "Rīgas kuģu būvētava" | 19.03.2010. | EIA report is being elaborated | |
| 7. | Construction of a liquefied natural gas terminal and a combined cycle electric power station, "Energo SG" Ltd | 26.03.2009. | EIA report is being elaborated | |
| 8. | Enlargement of oil product terminal, "Statoil Latvija" Ltd | 23.08.2007. | EIA report is being elaborated | |
| 9. | Construction of oil product handling terminal, "Reta Wood Industries" Ltd | 30.09.2008. | EIA report is being elaborated | |

*- issuing authority is the State Environment Bureau

After the Environment impact assessment and before the commencement of its implementation the planned activity shall be approved by the Riga City Council and the Freeport of Riga Authority. The newest Port development projects that have been approved are presented below:

- On 16.06.2009 the Riga City Council has adopted a resolution Nr.5577 "On approval of Environmental Impact Assessment in regards of the planned activity - Transfer of Port Activities from the City Centre to Krievu Island (Riga, Zila street 25, Cadaster Nr. 0100970143) and Riga, Zila street n/n (Cadaster Nr. 01000970145) and the relevant infrastructure development".
- On 17.03.2009 the Riga City Council has adopted a resolution Nr. 4837 "On approval of reconstruction project of existing oil product terminal in Riga at 39, Tvaika street (Cadaster Nr. 01000680299)";
- On 01.03.2011 the Riga City Council has adopted a resolution Nr. 2760 on approval of the planned activity "Highway construction at the section from motor ways' A5 an A10 junction up to Daugavgrīvas street (Riga Northern Transport corridor phases 3 and 4)";
- On 29.03.2011 the Riga City Council has adopted a resolution Nr. 2862 „On approval of the planned activity - Approval of Riga railway station and connecting track reconstruction for the purpose to service the Freeport of Riga".

The FPRA implements Port infrastructure and territory development projects, focusing on environmental impact aspects in the framework of their planning and implementation:

1. In 2010 technical project elaboration in regards of the project **Reconstruction of Access Channel for Ships Entrance into the Port of Riga** (the EIA status of the said project is provided in Table 3) is continued. The planned channel depth at the section from reception buoy up to northern part of Kundziņsala – 17 m and from the northern part of Kundziņsala up to middle part – 15 m. The length of the reconstructed port access channel section is approximately 16 km.
2. In 2010 the Ministry of Finance has submitted for the European Commission's approval the EU Cohesion Fund infrastructure project related to the **Transfer of Riga Port Activities from the City Centre to Krievu Island and relevant infrastructure development** (the project author – the FPRA). The complete Environmental Impact assessment procedure was performed for the said project, and the FPRA and the RCC approved the project's implementation.

3.3. Environmental Risks and Risk Mitigation Measures

3.3.1. Industrial Accident Risk Objects

There are 5 risk objects, located on the FPR enterprises' territory, and for those objects in accordance with cl.14 of the Cabinet Regulations Nr.532 "Regulations on Procedure of Industrial Accident Risk Assessment and Risk Reduction Activities" (19.07.2005) an Industrial Accident Prevention program (IAPP) was elaborated.

Table 4

Enterprises on the FPR territory that have IAPP

| Nr | Enterprise | Address | Hazardous substances |
|----|--|---------------------|---|
| 1 | "AGA" Ltd, Bolderaja gas filling station | Flotes 9, Riga | Oxygen, acetylene, propane and other hazardous substances |
| 2 | "MAN-TESS" Ltd | Tvaika 7a, Riga | Oil products |
| 3 | "VL Bunkering" Ltd | Tvaika 68, Riga | Oil products |
| 4 | "WOODISON TERMINAL" Ltd | Tvaika 39, Riga | Oil products |
| 5 | "VEXOIL Bunkering" Ltd | Atlantijas 27, Riga | Oil products |

There are 7 risk objects, located on the FPR enterprises' territory, and for those objects in accordance with cl.15 of the Cabinet Regulations Nr.532 "Regulations on Procedure of Industrial Accident Risk Assessment and Risk Reduction Activities" (19.07.2005.) a Safety report and a Civil Defence Plan were elaborated.

Table 5

Enterprises on the FPR territory, for which a Safety Report and a Civil Defence plan were elaborated

| Nr. | Enterprise | Address | Hazardous substances |
|-----|---------------------------------|---------------------|---|
| 1 | “Alpha Osta”Ltd | Atlantijas 35, Riga | Mineral fertilizers with ammonium nitrate |
| 2 | JSC “B.L.B. Baltijas Termināls” | Ezera 22, Riga | Oil products |
| 3 | “Latvija Statoil” Ltd | Laivinieku 7, Riga | Oil products |
| 4 | “LATVIJAS PROPĀNA GĀZE” Ltd | Zila 20, Riga | Propane – butane |
| 5 | “MAN-TESS” Ltd | Tvaika 7k-1, Riga | Oil products |
| 6 | “NAFTIMPEKS” Ltd | Laivinieku 11, Riga | Oil products |
| 7 | “Neste Latvija” Ltd | Laivinieku 5, Riga | Oil products |

In the process of IAPP and Safety Report (and Civil Defence Plan) development, modelling of possible industrial accidents scenarios was performed, and according to the received data the safety zones for each object were specified in the territory planning.

3.3.2. Governance of Activities involving Hazardous Substances

Cabinet Regulations Nr. 1060 “**Regulations on Hazardous and Polluting Cargo Handling and Control in Ports**”(15.09.2009) determine requirements that shall be observed in regards of hazardous and polluting cargo handling in ports (loading and unloading operations on board the ship, to railway tanks, trailers, cargo containers or other transport vehicles, cargo relocation in warehouse, on the terminal territory or on board the ship, including delivery, dispatch and storage of such cargo on the port territory with the aim to tranship it from one vehicle to another), as well as the mentioned requirements fulfilment control.

The hazardous cargoes, handled at the Freeport of Riga, are all liquid bulk cargo and chemical cargo, as well as mineral fertilizers that are dry bulk cargo. In 2010 6 584, 9 thousand tons of liquid bulk cargo and ~1 370 thousand tons of fertilizers were handled. The main hazardous characteristics of handled and stored hazardous substances are the following: inflammable, easily combustible, combustible, hazardous for environment, harmful for health at certain vapour concentration.

Port enterprises, that produce chemical substances, for example, “Vega Stivisors”Ltd (car care products), “Latvija Statoil”Ltd (fuel with bio-additives), “VL bunkerings”Ltd (in the process of bio-diesel production methanol and natrium hydroxide are used), also carry out activities involving hazardous substances.

Hazardous equipment is registered in the Register by the certified inspection institutions JSC “*Inspecta*”, or “TÜV Nord Baltic”Ltd or “LRTDEA”Ltd inspectorate. Latvian Maritime Administration carries out general supervision in respect of dangerous and polluting cargo turnover and control at ports, as well as organizes inspections of vessels in compliance with requirements, specified in VIII

part of Cabinet Regulations Nr. 1060 of 15.09.2009. The FPRA controls dangerous and polluting cargo turnover on the port merchant's territory.

The port merchant, that is involved in hazardous and polluting goods handling, is responsible for turnover safety and compliance with these requirements, as well as for safety and health protection of the employees, that are involved into cargo handling operations. The port merchant appoints a person, that is responsible for operations with hazardous and polluting cargo.

Cargo handling berth and a terminal shall not start any activity unless the SES MIWA has approved the Action Plan to combat accidental pollution.

Elimination of possible hazardous substance spill

Potential oil, oil product and chemical substance spill sources at liquid cargo terminals in regards of land area are tanks, railway and truck tanks unloading facilities (trestles, pump stations), pipelines for product transportation. Hazardous substances spill of other type can produce surface water pollution.

Any cargo transshipment berth or terminal shall not commence its operation unless the SES MIWA has approved a plan for oil and chemical spill elimination.

In accordance with the Freeport of Riga Regulations, the cargo operations at oil product and noxious liquid cargo transshipment berths shall be performed in accordance with the regulations for operating such terminals. Prior to commencing cargo operations, all oil tankers and chemical tankers with polluting and noxious liquid cargo must be buoyed off by booms. Oil product and noxious liquid cargo transshipment berth shall have a supply of absorbing substances enabling absorption of at least half of theoretically possible polluted spill and shall be equipped with a skimmer with a total capacity of at least 20 cub.m/h. A berth or terminal operator shall be fully responsible for the implementation of said requirements.

3.3.3. Action Plan to Combat Accidental Pollution at the Freeport of Riga

On the basis of the Regulations of the Cabinet of Ministers No.82 "Standard Requirements for Action Plan Elaboration to Combat Accidental Pollution in Ports, at Berths, Berth Groups and at Oil or Chemical Substance Terminals" (05.02.2008) on January 15, 2009 the Action Plan to Combat Accidental Pollution in the Freeport of Riga was approved.

The Action plan stipulates procedure of accident notification, pollution assessment, situation control, operational management, as well as due order of accident elimination activities provided accidental pollution occurs. The plan stipulates priorities on the basis of situation analysis as well as determines procedure of activities to eliminate pollution.

In 2010 the FPRA Security Service Coordination Centre, that is operating around the clock, was organized with the aim to ensure due notification and communication maintenance in compliance with the procedure set by the Action Plan to Combat

Accidental Pollution.

The purpose of the Action Plan to Combat Accidental Pollution at the Freeport of Riga is to avoid potential pollution by dangerous oil and chemical products in the water area of the Freeport of Riga or at least reduce its volume. Regular theoretical and practical training shall be organized to achieve the Plan's targets.

In 2010 two training sessions took place:

- At the terminals of "Latvija Statoil" Ltd and "Neste Latvija" Ltd, simulating fire at Neste terminal;
- In the port water area at Rinuzhi, simulating oil product spill from a tanker at the moment of bunkering.

The following institutions are responsible for plan implementation:

1. **Activities Coordination Centre (ACC)** – the Chief of ACC shall be in the lead of accident elimination and is directly responsible for appropriate implementation of any activity, started in compliance with the mentioned plan, except for fire extinction, when management is transferred to the Chief (the highest Authority) of the National Fire-extinction and Rescue Service, that has arrived at the accident place. The Chief of the ACC is responsible for regular reviewing and updating of the plan.
2. **Around-the clock Operational Coordination Centre**– shall ensure and coordinate notification related to the accident, information circulation between involved institutions and enterprises.
3. **"Eko osta" Ltd** – shall perform activities aimed at pollution recovery, deliver polluted water, recovered oil products and waste absorbents to treatment facilities.
4. **SES Marine and Inland Waters Administration** – shall approve activities aimed at accident consequences elimination, that were not previously included into the plan (including exclusive use of chemical substance facilitating dissolving of oil products), as well as shall participate in choosing the most efficient pollution recovery technology and methods. Shall carry out investigation to define the guilty party in case of pollution of unknown origin. Provided the pollution source is detected, the SES MIWA shall assess the harmful environmental impact and losses of the enterprises participating in accident elimination activities.

4. ENVIRONMENT QUALITY ON THE TERRITORY OF THE FREEPORT OF RIGA IN 2010

4.1. Monitoring Systems

Air, ground water, sediment (random check), sewage water treatment quality, as well as current SPNT condition is being monitored on the FPR territory with the aim to assess current environment quality and its relevant changes during specific time period.

In the beginning of 2010 on the FPR territory, at 23, Flotes street, near Daugavgriva lighthouse an **automatic meteorological station** was mounted, transferring meteorological data once per three hours. The following parameters are being measured- visibility, water temperature, wind speed and direction, relative humidity, air temperature, barometric pressure, precipitation amount.

Air quality monitoring stations are located on the right bank of the River Daugava. 3 DOAS type (differential optical absorption spectroscopy) measurement stations OPSIS have been mounted in the Freeport and in the adjacent territories. Latvian Environment, Geology and Meteorology Centre receives and analyses all measurement data in non-stop regime. Monthly reports and measurement stations' location are available on the web-page of the FPRA: www.rop.lv.

Ground and ground water quality study and monitoring on the Freeport of Riga territory are initiated by the Freeport of Riga Authority, coordinating work program with State Environment Service. With the aim to mitigate the River Daugava water area pollution risk the Freeport of Riga Authority is implementing supervision activities: regular visual territory inspection as well as ground water quality monitoring. Those activities are associated with considerable investment into research of environment quality with the aim to provide more precise information on polluted and potentially polluted places as well as create solid basis for launching activities aimed at environment rehabilitation. Ground and ground water quality research on the FPR territory on the left bank of the River Daugava has been carried out since 2001. In 2010 on the left bank of the River Daugava data was supplied by 144 surveillance wells, and on the right bank of the River Daugava – by 175 surveillance wells.

Quality of water basins (surface water) is controlled by Latvian Centre of Environment, Geology and Meteorology in the framework of National Environment Monitoring program. Water ecological quality can be divided into 5 categories – high, good, average, bad and very bad. Water quality is assessed in regards of the following indicators – minimal oxygen content, biological oxygen demand (5 days, BOD₅), nitrogen compound content and common phosphorus.

The permissions to carry out polluting activities of categories B, issued to the enterprises, that have installed local waste water treatment facilities and discharge waste water into surface water after relevant treatment, contain individual recommendations in regards of permitted for discharge pollutants, permissible concentration of every polluting substance, and/or volume of permissible emission per year. The permissions also define quality monitoring parameters of discharged

sewage water and analysis frequency. The fulfilment of those requirements is controlled by the SES Lielrīgas RED. That means that enterprises are responsible for the quality of the sewage water discharged into surface water and shall carry out self-control activities.

Waste water treatment quality monitoring

Provided industrial waste water is disposed into Riga city central sewage system an agreement concluded with "Rīgas Ūdens" Ltd on waste water reception shall specify polluting substances and their concentrations, that waste water can contain, and frequency of waste water quality testing. Usually "Rīgas Ūdens" Ltd organizes monitoring by random check.

Provided industrial waste water after treatment is discharged into municipal storm water sewage system, the enterprise shall conclude an agreement with Transport Department of the Riga City Council that is responsible for managing storm water sewage network. However, Transport Department of the Riga City Council has not elaborated regulations related to conclusion of such agreements and requirements of waste water reception, that is why no party is responsible for discharged waste water monitoring on the territory of Riga, and no requirements in regards of its quality have been specified. It should be noted, that the collected storm waste water is not treated, but is discharged into environment (surface waters, usually into the River Daugava).

Provided industrial waste water after treatment is discharged into environment (surface water), the SES Lielrīgas RED has defined permissible polluting substances, their concentrations, amounts per year, necessity of monitoring, parameters, necessity to pay tax on natural resources for waste water discharge and tax payment frequency in permissions to carry out polluting activities of categories B, that are issued to the relevant enterprises.

Bottom sediment quality is monitored at locations where dredging is planned, in the framework of the EIA process, as well as by random check on certain study territories. In 2010 bottom sediment study was performed at Ziemas port and at Roņu pond.

Monitoring of the FPR SPNT current status

In order to assess condition of nesting birds' population on the territories where specific measures aimed at birds' life improvement were implemented, the FPRA for several years has organized the SPNT monitoring. In compliance with the agreement, concluded with the FPRA, Latvian University Biology Institute monitors the territory, and in 2010 Zhurku Island, Nature Reserve "Krēmeri" and Mīlestības Island were inspected.

4.2. Air Quality

The main sources of emissions into air on the territory of the FPR are processes related to dry bulk and liquid cargo handling, emissions, produced by ship engines, local boiler houses of the enterprises and emissions produced by transport vehicles.

Sulphur dioxide - the main source of sulphur dioxide pollution are boiler houses, handling oil products and motor vehicles, that use diesel oil as fuel.

Nitrogen dioxide – the main source of pollution provided by nitrogen dioxide is transport vehicles traffic (provide approximately 90% of nitrogen dioxide concentrations) as well as burning of organic fuel in heating boilers.

Particulate matter PM₁₀ (up to 10 µm) - **PM₁₀** particles are emitted mostly during the process of handling dry bulk cargo, their sources might be motor transport and incinerators (excluding cases when fuel is gas).

Particulate matter PM_{2,5} (up to 2, 5 µm) - **PM_{2,5}** particles are emitted mostly during the process of handling dry bulk cargo, their sources might be motor transport and incinerators (including cases when fuel is gas).

Carbon dioxide is also emitted during burning processes, including processes inside internal combustion engines of motor vehicles.

Benzol (benzene) – the main source of benzol pollution is motor vehicles that use petrol as fuel, as well as process of handling oil products. According to long-term air quality monitoring in Sarkandaugava, carried out by Riga City Council, the biggest source of benzol emissions is urban motor traffic.

Toluol, similar to benzol, is one of the oil products' components and is emitted into environment by motor car emissions, as well as in the result of fuel volatilization during the process of oil products handling and storage. Level of toluol concentrations depends on oil products handling volume per month.

Ozone is created in the process of photochemical reaction in the air, involving nitrogen dioxide, hydrocarbon and carbon monoxide, that are created due to operation of internal combustion engines of motor vehicles and oil products handling, and depends on sun radiation intensity.

Vanadium compounds and hydrogen sulphide are generated by heavy black oil burning processes. Small quantities of hydrogen sulphide are emitted in the process of diesel oil and heavy black oil handling and storage.

Volatile organic substances are components of various paints, dyes, varnishes and solvents that are their major emission sources.

Other substances are not emitted by the enterprises operating in the FPR territory, or are emitted in small amounts.

Malodours and dust polluted by PM₁₀ are the main reasons of residents' complaints – it was stated in the process of various resident polls, implemented in the framework of "Vides Konsultāciju Birojs" Ltd projects as well as processing data in regards of complaints, submitted to Riga City Council Environment Department, from 2004 till 2010.

Comparing measurement results of 2010 with polluting substances' emissions limit values and target values, and according to monitoring data, processed by Latvian Environment, Geology and Meteorology Centre, it can be concluded that:

- as for **ozone** - four limit value exceedances per year (human health protection 8 hour average value) were detected in 2010. All those exceedance cases were detected at Man-Tess station (two in July and two in August). In compliance with regulatory enactments' provisions, exceedance of limit value is permissible 25 days during three years period. Due to the fact that in 2008 there were no limit value exceedances detected, and there were 4 exceedances in 2009, it can be concluded that air quality is in compliance with regulatory norms;
- exceedance of **particulate matter PM₁₀** limit value is permissible 35 times per year (see Cabinet Regulations No. 1290 (03.11.2009). According to monitoring results, the daily PM₁₀ limit value was exceeded 17 times in 2010, therefore it can be stated that air quality is in compliance with regulatory provisions;
- stipulated weekly **toluol** target value has never been reached in 2010;
- in 2010 defined **benzol** yearly norm, in compliance with limit, was 5 µg/m³. The highest benzol yearly concentration among all monitoring stations was detected at Man-Tess station - 17, 4 µg/m³, and comparatively high level was detected at BLB station- 8, 4 µg/m³, however, the measurements at both stations reflect operational situation - on the territories of the companies "Man-Tess" Ltd and the JSC "BLB Baltijas Termināls". That is why the results shall not be interpreted as air quality norm exceedance due to the fact that the norms, included into the CM Regulations Nr. 1290 "Regulations on Air Quality", shall not apply to working environment. According to Tvaika street station data benzol average yearly concentration is 4, 7 µg/m³. That is why it is possible to conclude that in general benzol average yearly concentration is not exceeded and air quality standard is met;
- 1 hour **nitrogen dioxide** norm in 2010 was exceeded twice in January (one exceedance was registered at Man-Tess and one at Tvaika street). Due to the fact that in compliance with the LR legislation the normative exceedance is permitted 18 times, it can be concluded that in general no nitrogen dioxide exceedances were observed ;
- In 2010 Latvian Agency of Environment, Geology and Meteorology has not detected any **sulphur dioxide** norm exceedance case.

It should be noted that measurement stations do not detect pollution that is caused by one particular enterprise, they detect total amount of polluting substances, provided by neighbouring stationary and mobile pollution sources (background) that might be located outside the port's territory. Therefore it is possible to control general air quality, though pollution source might not be detected quite precisely.

Comparing 2010 measurement data to the previous year results, it can be concluded that:

- Air quality indicators related to ozone, toluol, nitrogen dioxide and sulphur dioxide concentrations have not changed - these still do not exceed air quality limit and target values;

- In 2010 defined benzol yearly limit value (benzol yearly average concentration - $5 \mu\text{g}/\text{m}^3$) was not exceeded at Tvaika street station, as for two other stations, mounted in the vicinity of the FPR, the measurements were taken in working environment, so the regulatory norms shall not be applied;
- In 2010 Air quality norm in regards of PM_{10} was exceeded 17 times while only 35 exceedances per year are permissible, at the same time in 2008 year quality norm was exceeded 15 times, and in 2009 – 20 times, therefore air quality indicators in regards of particulate matter (PM_{10}) vary, however, air quality in regards of particulate matter (PM_{10}) is still in compliance with the norm.

Benzol air quality limit value is reduced every year (2008 limit value – $7 \mu\text{g}/\text{m}^3$, 2009 limit value – $6 \mu\text{g}/\text{m}^3$, and on January 1, 2010 limit value has reached constant amount – $5 \mu\text{g}/\text{m}^3$).

All port enterprises activities are classified as polluting activities of category B or C, and it is not mandatory for them to employ the best available technologies, nevertheless, they are aware of the fact that the best available technologies can ensure environment impact reduction. New generation liquid bulk cargo terminals, that have volunteered to introduce new technologies, have considerably reduced emission volume potentially generated by their economic activities.

4.3. Quality of Soil, Ground and Underground Waters

Ground and ground water study on the left bank of the River Daugava on the FPR territory has been on-going since 2001. In accordance with the concluded agreement the work was performed by “Vides Konsultāciju Birojs” Ltd. The purpose of the work was to define quality of ground and ground waters in the polluted locations, as well as to define level of pollution and to assess necessity of additional research and treatment. On the basis of the research results and information, provided by the research, in 2005 environment quality research was also started on the right bank of the River Daugava.

Ground and ground water quality research activities include field study analysis, visual inspection, installation of stationary monitoring wells (that can be further used for regular monitoring of ground water quality), ground and ground water sampling, laboratory analysis of samples, as well as elaboration of recommendations to improve situation.

In the process of long-term monitoring of the Freeport of Riga territory it was concluded, that quality of the said territory’s ground and underground waters, due to its historical deployment for industrial purposes, is affected to a certain degree. The current and potential pollution sources are fuel storage and refilling places, motor vehicles washing and repair places, metal scrap cutting and stationing sites, unauthorized waste disposal sites as well as bad technical condition of sewage network. The most remarkable historical pollution was detected on the territories of the following enterprises - “Freja” Ltd, “OVI Rīga” Ltd, “Eko osta” Ltd, “OVI” Ltd, “VL Bunkering” Ltd, JSC “BLB Baltijas Termināls” and “Woodison Terminal” Ltd.

The major part of researched territories ground is not remarkably polluted, local natural pollution with some substance (organic substance, surface active compounds, macro components or nitrogen compounds) was detected

LEGMC has created and administers a data base, containing information on polluted and potentially polluted locations. Polluted territories are the territories that have enough data to make conclusions on pollution type, intensity and, in certain cases, on pollution area. Potentially polluted territories are the territories, where there are certain suspicions that there might be pollution, still there is certain lack of concrete data, and after detailed research rather often it turns out that the location is not polluted at all. List of polluted and potentially polluted territories of the Freeport of Riga is presented in Appendix 1.

The research results confirmed assumption that all the territories, defined as polluted in the LEGMC data base, are really polluted, excluding territory of “Jūras vejs” Ltd and “La Con” Ltd, where according to the research quality of ground and ground water is not affected or is affected to a small degree.

In 2010 the research of four sites, located on the FPR territory was performed in accordance with the Action program “Environment Quality Assessment for the Right Bank of the River Daugava on the Territory of the Freeport of Riga”. These were the territories managed by “Baltic Container Terminal”Ltd, “Kravu termināls”Ltd, “LLS Baltic Container Services”Ltd, “Man – Tess” Ltd. The objective was to assess environment quality on the left bank of the River Daugava as well as to assess necessity of treatment (reference phase). Ground and ground water quality research activities include: installation of stationary monitoring wells, ground and ground water sampling and laboratory tests of samples.

2010 research demonstrated the following results:

- “*Baltic Container Terminal*”Ltd territory – oil product pollution was not detected, however, tests revealed contamination by zinc;
- “*Kravu termināls*” Ltd territory – local and not very intensive oil product pollution was detected on the Western part of the territory, and relatively high surface active compounds content was detected on all the territory;
- “*LLS Baltic Container Services*”Ltd territory – increased level of oil products, macro components, nitrogen and its compounds was not detected on the researched territory, heavy metal concentrations in soil samples is within normal range;
- “*Man – Tess*”Ltd territory – pollution was detected in separate locations, increased level of heavy metals was not detected, however, industrial pollution, mostly by surface active compounds, was detected in ground water on almost the whole territory.

Research has not been carried out on certain territories (JSC“Starts-Rīga”, “Magnāts”Ltd, “Vega stividoris”Ltd and “Baltic Container Terminal”Ltd).

As for potentially polluted territories, the research has confirmed that territories of “Vexoil Bunkering” Ltd, “Latvijas Rietumu Termināls” Ltd and of the Freeport of Riga Customs control point, of the JSC “BMGS” and “Port Magnat” Ltd are polluted, but regular (including 2010) ground water quality monitoring of “Neste Latvija” Ltd

and “Latvija Statoil” Ltd territories (the said territories have been included into the Register due to oil product handling) has not confirmed territory pollution assumptions.

Still the research of the territory of “Gaujas Granulas” Ltd, producing woodchip pellet, proves that ground and ground water quality is affected to a small degree and can be characterized as good. Nevertheless, it is recommended to perform regular monitoring of all wells, located on the territory, with the aim to plan further environment quality improvement activities on the basis of monitoring results when needed.

2010 monitoring of the territory shows equivalent data as of 2009.

Being aware of environment quality issues, before the detailed research the FPRA is planning activities with the aim to eliminate or decrease pollution, that is mainly historical. It should be noted that pollution of those territories is related neither to the activities of the Freeport of Riga Authority, nor to those of the current land leaseholders. Still, taking into account the urgent need to reduce or eliminate pollution of the Freeport of Riga water area and territory, both the Freeport of Riga Authority and relevant enterprises are involved into territory treatment activities.

In 2010 feasibility study for the project related to rehabilitation of historically polluted FPR territories - the port water area of Ziemas port and Ronu pond - was elaborated with the aim to attract the EU financing for the project implementation.

In the framework of the feasibility study related to rehabilitation of both territories, the research of bottom sediment historical pollution of the FPR Ronu pond water area and Ziemas port as well as assessment of ground and ground water quality of the adjacent territories were carried out. The research results were compared with the previous study data and pollution limit values in compliance with the CM Regulations Nr. 475 “Procedures regarding the Cleaning and Deepening of Surface Water Bodies and Port Basins” (13.06.2006). On the basis of the research results the necessity of polluted soil dredging was assessed and dredged soil volumes were calculated. According to calculations the required amount of dredging in Ronu pond is 78640 m³, and at Ziemas port - 265 200 m³. After polluted sediment volume determination, various rehabilitation alternatives were assessed, treatment technologies were provided and the indicative cost assessment in regards of the proposed alternative options was performed.

4.4. Rehabilitation of Polluted Territories

In 2010 the FPRA continued rehabilitation activities, that were started in 1998 on the territories with historical pollution (these territories formerly belonged to the Soviet Army and industrial enterprises: “OVI Rīga” Ltd, “Eko osta” Ltd, “OVI” Ltd, “VL Bunkering” Ltd and “Woodison Terminal” Ltd) as well as continued work, that was started in 2009 on the territory of the JSC “BLB Baltijas Termināls”, that used to be the territory of a superphosphate plant and waste disposal.

To motivate enterprises to carry out rehabilitation work with the aim to eliminate pollution, provided by former owners, the Freeport of Riga Board in 1999 approved a resolution on support mechanism introduction for environment rehabilitation activities. It was decided to compensate funds, invested by the land leaseholders into land rehabilitation, in the amount of up to 50% of the rent payment for the relevant land plot.

The territories of “OVI Rīga” Ltd, “Woodison Terminal” Ltd, “Eko osta” Ltd, “VL Bunkering” Ltd and “OVI” Ltd are the most polluted territories of Jaunmilgravis region. The pollution has started to accumulate on these territories some 100 years ago. Present land leaseholders have inherited it from former property managers, that were mostly Soviet Army military bases or enterprises

The territory, that is rented by the **“Eko osta”Ltd** (39, Tvaika street) was historically used for oil products storage and transshipment. At the time of former USSR, there was a fuel warehouse of a navy base on this territory. In the result of its activities the ground and ground water of the territory is polluted. On the “Eko osta”Ltd territory oil product floating layer thickness over ground water varies from 0, 37 m to 0,957 m. The territory treatment has been on-going since 2004.

The territory, that is rented by **“Woodison Terminal” Ltd** (39, Tvaika street), for more than 100 years has been used for oil products storage and handling for both military and civil purposes. Due to long-term operations soil, ground and ground water are thoroughly polluted.

Pollution of ground waters with oil products resulted in floating layer thickness that exceeds 1 m in particular bore holes. In the result of 2006 activities the floating layer of 1, 8, m was detected in the area of “Eko osta” Ltd and “Woodison Terminal”Ltd berths. According to 2010 monitoring data thickness of oil product floating layer decreased to 0, 68 m on the said territory.

Accumulation of pollution, provided by oil products, on the territory, that is rented by **“OVI Rīga”Ltd** (35, Tvaika street) has been going on since 1872, when there was a petroleum plant. In the beginning of the plant activities, the waste, generated by the enterprise, was stored on the territory of the plant. Ground treatment and research was started in 1998. In the process of those activities the spread of the floating level on the area of 24 400 m² was detected and approximate oil product volume of 1480 m³ was defined. It was detected that oil products flow directly into Sarkandaugava river branch.

In 2010 242, 4 m³ of oily waste water, including 20, 2 m³ of oily emulsion, were pumped out on the territory, that is rented by JSC **“OVI Riga**. In the result of pumping, considerable changes of floating layer thickness in monitoring bore holes were detected. However, regeneration of floating layer thickness is stated after every switching off of the pumping system that proves necessity of sustainable operation of pumping system in future.

On the territory, that is rented by **“OVI” Ltd** (35, Tvaika Street) there is immense ground and ground water pollution due to long-term storage and handling of oil products. Oil products together with ground water flow migrate to the territory that is

rented by JSC "OVI" from "Woodison Terminal" Ltd territory. The calculated total area of the oil product floating layer is 20 000 m², the floating layer contains ~280 m³ of oil products, 180 m³ of them being floating or mobile fractions that move to Sarkandaugava.

On the territory of the **"VL Bunkerings" Ltd** (68, Tvaika street) oil product floating layer is detected almost on all the enterprise territory, its thickness being from 0, 41 m to 0, 63 m. The thickest floating layer is detected at railway fuel unloading trestles. In 2010 115 m³ of oily waste and 1, 9 m³ of oily emulsion were pumped and transferred to the treatment plant.

In 2009 treatment of historically polluted territory, rented by the JSC **"BLB Baltijas Termināls"**, where the highest slag level thickness and high heavy metal concentration was detected in groundwater, was resumed. Soda ash solution impact on sulphuric acid slags was used for polluted groundwater treatment. In the result of chemical reaction copper, lead and zinc are transformed into soluble carbonate compounds. In 2010 five new trenches for calcinated natron (soda ash) were installed with the total length of 100 m, and 5 tons of natron powder were used for treatment (in 2004 - 2009 49 tons of natron powder were used in total).

In 2010 preparation for implementation of the **Project "Additional Research of Sarkandaugava Historically Polluted Territory and Updating of Treatment Project Documentation"** was continued. Rehabilitation project implementation was financed by the Swiss Confederation in the framework of Swiss –Latvian Cooperation program "Swiss Contribution" and the Riga City Council. It is planned to implement rehabilitation activities on the territories of "VL Bunkering" Ltd, "Eko osta" Ltd, "Woodison terminal" Ltd, "OVI" Ltd and additional research on the territory of "OVI Rīga" Ltd in the framework of the Project.

Treatment of the territory, that is rented by **"Freja" Ltd**, (14 Flotes street), was started in 1999. Research results revealed increased concentration of heavy metals in the ground that might be related to the fact that the said territory was earlier used for ship repair and later on for ship wreck cutting. Polluted territory treatment has been carried out. Monitoring has been on-going since 2008.

4.5. Surface Water Quality

Surface waters (the River Daugava and its tributaries). Their quality (including both ecological and chemical indicators) on the territory of the FPR can be influenced by the vessel's stay at the port as well as by the discharge of sewage water (rainwater, domestic waste water, industrial waste water) from the shore enterprises and from Riga city storm sewer system.

In 2010 the River Daugava water quality was assessed four times. In the process of the Environment Report elaboration the data on the River Daugava water quality were available, however the complete water quality assessment, that is prepared by the LEGMC, is completed only in the middle of the year. Therefore only provisional assessment has been done, that shows that in 2010 water quality at monitoring sites is in compliance with average ecological quality (quality index according to the worst

defined indicator). In previous years the River Daugava water quality in the FPR water area has been assessed as good. It should be noted, however, that the River Daugava water quality monitoring indicates general water quality of the river, not just the FPR influence, due to the fact that, as it has already been mentioned, the Riga city storm water sewage is discharged into the river and major pollution arrives together with flow from the upper course of the river. However, even taking into account general load, the River Daugava water quality in the FPR territory shall be assessed as average.

To ensure safe navigation conditions, dredging of Daugava fairway must be carried out regularly. Both dredging and dredged soil disposal have impact on environment. Dredging has negative effect on water biological resources, including reduction of dissolved oxygen concentration and aquatic organism's extinction due to operation of dredger's bucket and due to muddy flows, resulting from sucking water into dredger's suction pipe.

With the aim to reduce environmental impact, the FPRA applies various organizational and engineering-technical activities, that are being implemented in two main directions:

- Limitation of dredging work on the basis of hydro-biological and hydro-meteorological conditions;
- Improvement of total technological process of dredging activities.

However, the above mentioned impact on biological resources is unavoidable, therefore before dredging is started, fisheries' assessment is carried out at that particular location, as well as regulations, related to time of dredging with the aim to minimize possible damage, are received. Latvian Fish Resources Agency computes losses caused to environment, and the FPRA shall compensate it in terms of money. The FPRA performs annual release of fish juveniles into the River Daugava in compliance with calculations, performed in the framework of relevant Fish Resources Agency Expert Conclusion.

Bottom Sediment Quality. Before the start of dredging activities, ground samples are taken and tested by laboratory to define sediment quality and choose the most efficient option for their disposal or utilization. Therefore, environment supervising institutions shall be notified about dredging site, volume, time, technologies to be employed and the relevant permissions shall be received. All regulations and recommendations, issued by environment protection institutions, shall be observed to minimize environmental impact. None of the sediment quality tests has resulted in quality limit value exceedance, that is why the present sediment disposal is approved by the State Environment Service.

In 2010 the total volume of the dredged and stored soil has reached 716 835 m³. From 2001-2010 the total volume of soil, dredged to ensure main fairway depths, has reached 7 409 074 m³. Since 2005-2006 the dredged soil has been disposed at the interim spoil dumping site at Kundziņsala and Krievu Island. Since 2005 2 433 790 m³ of dredged soil have been disposed at Kundziņsala, including those 716 835 m³ disposed in 2010. Since 2006 2 053 722 m³ of degraded soil have been disposed at Krievu Island, in 2010 no degraded soil was disposed at this site.

4.6. Waste Water Management

Coastal enterprises and institutions produce waste water of 3 types - domestic (utility) waste water, industrial waste water and rainwater /urban run-off.

Utility (domestic) waste water from the larger part of the FPR territory is disposed into Riga city central sewage system. Every enterprise has concluded an agreement on waste water reception, quality and other conditions with “Rīgas Ūdens”Ltd that administers sewage system. Provided utility waste water is not discharged together with industrial waste water, quality testing shall not be organized. “Rīgas Ūdens”Ltd controls compliance with the criteria by random check.

At places with no sewage network in the vicinity local biological treatment facilities or dump pits are built. In this case it is also quite important to check whether those facilities and wells are leak-proof, the waste shall be regularly removed to avoid territory pollution.

Industrial waste water - before discharge into municipal sewage system, storm overflow sewer or environment the industrial waste water must be purified.

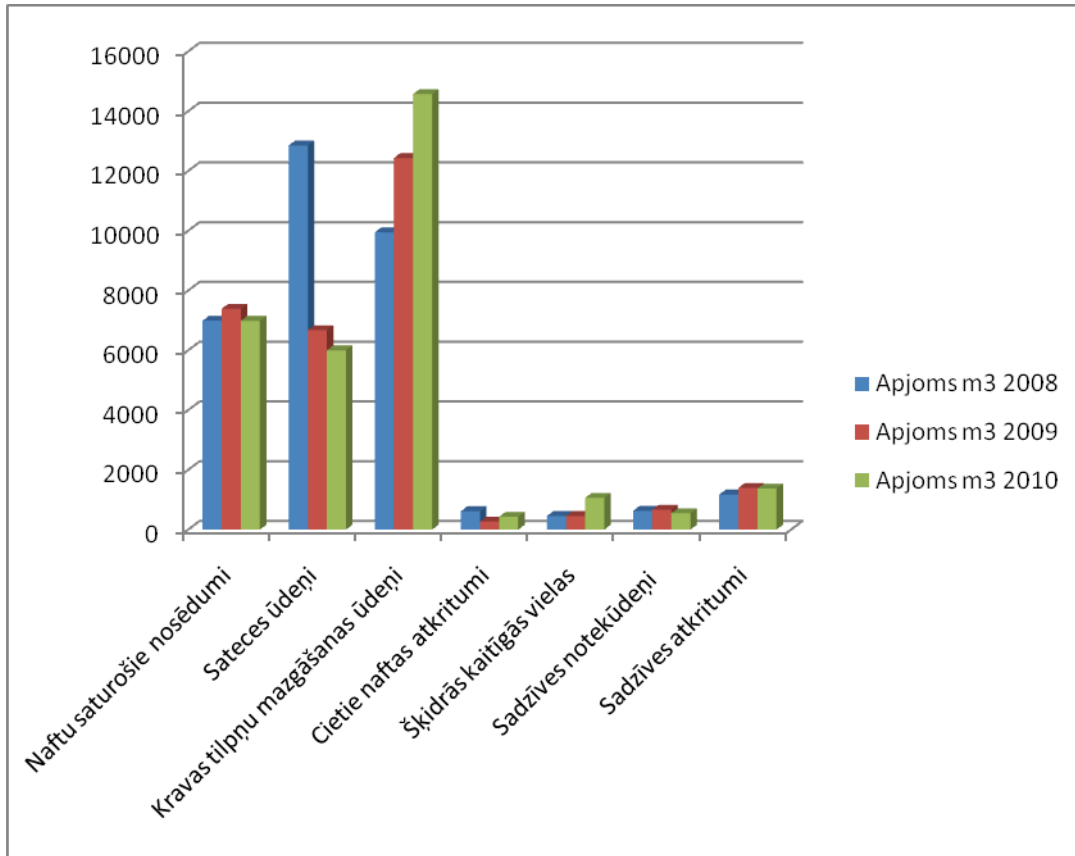
Storm water/urban run-off is formed on the Freeport territory due to precipitation, rainwater from roofs, inner roads, cargo sites etc. Collected storm water /urban run-off is discharged into municipal storm overflow sewage system or into environment on the basis of permissions of B category. There are several storm water sewage discharge points into the River Daugava on the FPR territory - in Bolderāja, Rīnūzhi, Vecmīlgrāvis, Jaunmīlgrāvis, Sarkandaugava etc. There are network exhausts in Audupe and Hapaka ditch, and sewage later flows into the River Daugava. 15 local storm water treatment facilities are located on the Freeport of Riga territory, mainly in Eksportosta area, Rīnūzhi and Kundziņsala.

4.7. Ship-generated Waste Management

On December 9, 2010 the Freeport of Riga Board approved a “Ship-generated Waste Management Plan in the Freeport of Riga” for the next three years period. Since this document has been approved the Ship-generated Waste Management Plan, adopted on December 18, 2007, has become invalid.

No-special-fee system is being applied at the Freeport of Riga, that means that the sanitary fee is levied from all vessels entering the port. Sanitary fee refers to reception of waste and waste water of all types, excluding polluted ballast and tank washing water. Passenger ships, cruise ships and fishing vessels have to make payments in accordance with actual volume of delivered waste.

“Eko osta”Ltd collects and manages ship-generated waste (waste waters, general household waste, solid oil products waste, and waste water containing oil products) at the Freeport of Riga



III 4. Volume (m³) of waste collected by “Eko osta”Ltd, 2008-2010

Cargo-associated waste shall be received and handled by cargo sender or receiver or, according to individual agreement, by the licensed waste management company for separate fee, i.e. the said service is not included into sanitary fee.

Ballast water, tank washings, and waters containing oil products from ship engine room are delivered to the Freeport of Riga oily water treatment facilities in Jaunmilgravis for treatment and further utilization. According to modern collection technology the polluted waters of various types might blend in the collector vessel tanks, therefore it is not possible to apply technological treatment process on the basis of oil product concentration. However, during the collection process certain measures are taken to prevent mixing or reception of waters with such type of pollution, that cannot be treated at treatment facilities. Treatment facilities can simultaneously receive up to 4000 m³ waste waters polluted by oil products.

Waste water (sewage). Due to the fact that MARPOL 73/78 stipulates that the majority of ships have the right to discharge waste water at a distance of more than 12 nautical miles from the nearest land, the waste water is delivered by the ships that stay at the port for longer period of time. It is prohibited to discharge ship-generated waste water into the port water area of the Freeport of Riga. Outboard valves of vessel drainage systems in the Freeport of Riga water area must be locked up and sealed. In 2010 “Eko osta” Ltd has recovered and transported to Bolderaja biological waste water treatment facilities 547m³ of domestic waste water.

Household waste (garbage) can be ship generated or cargo-associated. Cargo sender or receiver shall ensure reception and handling of cargo leftovers in accordance with the requirements of regulatory enactments. Larger amounts of ship-generated waste are collected in the packaged form at the berth of ship's mooring. The collected waste is delivered to Getlini waste disposal site. "Eko osta" Ltd delivers collected waste to "L&T" Ltd. In 2010 "Eko osta" Ltd has collected and delivered to "L&T" Ltd 1 376 m³ of household waste

"Eko osta" Ltd recycles the recovered **solid oil products waste** at their recycling facilities. In 2010 "Eko osta" Ltd has collected and recycled 431 m³ of oily waste. In 2010 "Eko osta" Ltd has collected, treated and transported 5 998 m³ of **oily bilge** and 6 985 m³ of **oily sludge**.

Polluted ballast water is generated by ships that use cargo tanks as ballast tanks. The amount of ballast water, that should be discharged at the port previous to recurrent loading, might reach 30% of the ship tonnage. In 2010 "Eko osta" Ltd collected and treated 14 571 m³ of tank washings and polluted ballast.

Management of waste, generated on the port enterprises territory, is executed by the relevant enterprises by concluding an agreement with licensed companies or receiving relevant permission for waste management activities.

4.8. Chemical Substance or Mix Spill Cases in 2010

In 2010 9 cases of chemical substances or their mix spill were registered at the Freeport of Riga, when small amount of oil products was spilled into the water area. Various absorbents (booms, straw etc.) were used for collection, that is why volume of collected products cannot be specified in regards of weight, but according to collected material amount. The total volume of 68 m³ of polluted water and 24 l kg of oil products were collected in the process of spillage elimination.

In all mentioned cases "Eko osta" Ltd immediately carried out oil product collection to prevent pollution and ensure environmental risk mitigation.

4.9. Noise and Vibration

Emission of **noise** on the territory of the FPR is mostly produced by technological equipment, access railway tracks as well as by motor roads. Operation of the noise sources, that are located in the centre of the territory and further from the residential areas, is considered to be less important.

Up to now the population considered that the most disturbing noise is produced by the railway at places where it goes close to the residential houses (even at 30 m distance: at Tvaika street, Ezera street, in Daugavgriva). It should be taken into account that the railway track in these places exists for a long time, besides efficient anti-noise measures to reduce railway noise are quite costly. Nevertheless, the FPRA has tried to find solutions for those problematic locations. Thus "MAN-TESS" Ltd has transferred access railway track 50 away from the residential house at No.54, Tvaika Street and has improved safety of the railway crossing at Tvaika street. The last project, that was

implemented, is construction of anti-noise wall in Daugavgrīva along railway sideline in 2005.

4.10. Protected Territories and Biodiversity

There are two specially protected natural territories and one micro reserve on the territory of the Freeport of Riga - **Krēmeri Nature Reserve** and **Mīlestības Island** that is the part of **Piejūra Nature Park**, as well as a **micro reserve** in Spilves meadows. The Freeport of Riga's territory borders on **“Vecdaugava” Nature Reserve** and **“Piejūra” Nature Park**, as well as nature reserve zone **“Daugavgrīva”**. It should be noted, that in compliance with the nature protection plans of the specially protected nature territories administrations of the said territories are responsible for SPNT management, and provided there is no relevant administration, public institutions are responsible for the relevant SPNT management – for example, the Riga City Council is responsible for **“Krēmeri” Nature Reserve** management, while Nature Conservation Agency - for **“Piejūra” Nature Park** management.

“Krēmeri” Nature Reserve was founded with the aim to preserve important bird nesting sites in the city of Riga. In 2009 an artificial birds' nesting site was created in the middle of the lake in the NR **“Krēmeri”**, and the bulrush was cut on the territory of 2,7 ha. In 2010 the bulrush cutting was continued in the same amount. In 2010 while inspecting the nature reserve the biologists found a black headed gull colony (20-30 pairs), as well as lapwings (1 pair), herons (2 birds) mallard ducks (3 males), mute swans (2 birds), garganey (1 male) and reed hen harrier (1 male).

Black headed gulls' nesting at the NR **“Krēmeri”** is regarded as a very good result, due to the fact that black headed gulls have not been nesting here for a long time. The mentioned artificial site -the floating platform for birds nesting - was mounted as an alternative nesting place, in case the birds leave their nesting places on house roofs in Daugavgrīva, therefore in 2010 the birds were not detected on the artificial nesting site. Implemented biotechnical activities shall be evaluated as efficient measures to attract birds for nesting in the NR.

“Piejūra” Nature Park was created in 1962. **Mīlestības Salina (Mīlestības Island)** is included into reserve zone of the **“Piejūra” Nature Park**. The aim of its creation is to ensure conservation and sustainable development of nature biotopes and species.

In 2009 in compliance with the ornithologists' recommendations the FPRA carried out biotope reconstruction on Mīlestības Island, that resulted in expanded water areas, creation of two artificial islands for waterfowl' nesting and an artificial site (a platform) for birds' nesting. During 2010 inspection of Mīlestības Island no birds were detected nesting on the floating platform. The inspection of artificial islands was remote, however, it is unlikely that the waterfowl are nesting there.

In 2010 the ornithologists inspected the FPR territory and found two nesting places of the European protected bird species – a Common tern. One of sites is in the southern part of Mangalsala on one of the **“Gamma-A”** roofs – some 60-65 of bird nests were detected. A second nesting colony is located in the south of Kundziņsala on a warehouse roof, and there are 49 nests.

5. SUMMARY

Quality management system in compliance with the requirements of ISO 9001:2008 international standard and Environment management system in compliance with the requirements of ISO 14001:2004 international standard were introduced and are maintained by the Freeport of Riga Authority. “*Bureau Veritas Quality International*”, one of the leading companies in the field of compliance assessment, provides regular environment management system audit.

The FPRA has elaborated and adopted its environment policy in the framework of Environment management system with the aim to attain the following objective: to make the Freeport of Riga one of the most environment-friendly ports in the North-Eastern region of the Baltic Sea. One of the activities to attain the objective is to provide information to the public and partners with respect to environmental management policy, its goals, tasks and environment protection activities that have been performed. In compliance with those activities the Freeport of Riga Environmental Report for 2010 was elaborated.

With the aim to enhance navigational safety and environment quality it is necessary to ensure that vessels with bigger tonnage call the FPR. **Cargo turnover** (sea-bound cargo transshipment) at the Freeport of Riga constantly grows reaching 30, 48 million tons in 2010.

The **Freeport of Riga Development Programme 2009-2018 (PDP)** came into force after its approval by the Ports Council in 2009. (The Freeport of Riga Development Programme is available at the Freeport of Riga Authority web-page - <https://www.rop.lv/lv/klientiem-un-investoriem/attistibas-programma.html>).

The Environmental Report is part of the Freeport of Riga Development Programme 2009-2018. The prime purpose of the Environmental Report of PDP is to ensure that all environmental and social considerations are taken into account during the implementation of the Development Programme. (The Environmental Report is available at the Freeport of Riga Authority web-page <http://www.rop.lv/lv/par-ostu/vide/vides-parskati.html>).

The Environmental Management Plan (EMP), that includes environmental impact mitigation and monitoring activities, was elaborated in the framework of the Environmental Report. In 2010 the FPR has already implemented certain part of the activities that are included into Environmental Management Plan.

Due to the fact that the Freeport of Riga Authority is an institution that is responsible for ship-generated waste and polluted water management at the Freeport of Riga, as well as for elaboration of ship-generated waste management plan, a new “**Ship-generated Waste Management Plan of the Freeport of Riga**” was elaborated and approved on December 9, 2010.

Starting its activities on the Freeport territory every operator shall comply with the Law “On Environmental Impact Assessment” of 14.10.1998 and relevant CM Regulations, and shall inform the relevant Regional environment department about equipment/vehicles and the FPRA planned port development project submitting a

written application. The initial Environmental Impact Assessment is performed by the regional environment department and the results of the initial Assessment together with the application are sent to the State Environment Bureau for decision making purposes. Provided the State Environment Bureau adopts a decision to apply **Environmental Impact Assessment procedure**, the initiator of the planned activity shall perform complete assessment procedure. Environmental Impact Assessment ensures right choice of the best available technologies for the planned activity with the aim to eliminate harm for environmental quality and population health. The FPRA provides technical support and advice to operators in respect of receiving permissions, licenses and preparing Environmental Impact Assessment. The FPRA shall approve the planned activities on the territory of the FPR.

There are 12 risk objects on the FPR territory and in accordance with the Cabinet Regulations Nr.532 “Regulations on Procedure of Industrial Accident Risk Assessment and Risk Reduction Activities” (19.07.2005) specific documents shall be elaborated for those objects with the aim to assess and mitigate **industrial accident risk**. The relevant enterprises have prepared the necessary documents.

Cargo transshipment involving **hazardous chemical substances** takes place at the FPR territory, as well as chemical substance production using physical methods; chemical substances are also used for production purposes generating hazardous waste. The enterprises are responsible for the substances, used for operation purposes, their proper marking, handling, employees’ training etc, in accordance with the permission to carry out polluting activities of the category B or category C certificate and in compliance with the regulatory enactments.

The Port Authority supervises compliance with the Cabinet Regulations Nr.1060 of 15.09.2009 “Regulations on Hazardous and Polluting Cargo Handling and Control in Ports” provisions on the relevant port territory. Cargo transshipment berth, terminal or high risk area shall not commence its operation unless the SES MIWA has approved a plan for oil and chemical spill elimination. A berth or terminal operator shall be fully responsible for the implementation of the mentioned requirements.

On the basis of Regulations of the Cabinet of Ministers No.82 “Standard Requirements for Action Plan Elaboration to Combat Accidental Pollution in Ports, at Berths, Berth Groups and at Oil or Chemical Substance Terminals” (05.02.2008) the **Action Plan to Combat Accidental Pollution in the Freeport of Riga** was approved on January 15, 2009. It is internal regulatory enactment that is available to all the parties involved as well as to the enterprises, operating on the territory of the Freeport. In 2010 the Action Plan to Combat Accidental Pollution in the Freeport of Riga was updated.

Monitoring of **air, ground water quality, waste water treatment quality, bottom sediment quality (random check) as well as monitoring of condition of the European Union protected bird species colonies, that are detected in Latvia**, is on-going on the FPR territory.

Monitoring system, that ensures **air quality control**, is created on the FPR territory - 3 DOAS type (differential optical absorption spectroscopy) measurement stations OPSIS were mounted at the Freeport and the adjacent territories.

Ground and ground water quality study and monitoring are initiated by the Freeport of Riga Authority, coordinating work program with State Environment Service. Since 2005 the number of surveillance wells has grown and in 2010 there were 144 surveillance wells on the left bank of the River Daugava, and 175 surveillance wells on the right bank of the River Daugava.

Quality of water basins (surface water) is controlled by Latvian Centre of Environment, Geology and Meteorology in the framework of National Environment Monitoring program. Water quality is assessed in regards of the following indicators – minimal oxygen content, biological oxygen demand (5 days, BOD₅), nitrogen compound content and common phosphorus.

Waste water treatment quality monitoring

Provided industrial waste water is disposed into Riga city central sewage system, an agreement, concluded with “Rīgas Ūdens” Ltd on waste water reception, shall specify polluting substances and their concentrations, that waste water can contain, as well as frequency of waste water quality testing. “Rīgas Ūdens” Ltd organizes monitoring by random check.

Bottom sediment quality is evaluated at locations where dredging is planned, in the framework of EIA process, as well as by random check on certain study territories.

Monitoring of the FPR SPNT current status

In compliance with the agreement, concluded with the FPRA, Latvian University Biology Institute monitors the territory, and in 2010 Zhurku Island, Nature Reserve “Krēmeri” and Mīlestības Island were inspected.

Comparing measurement results of 2010 with polluting substances’ emissions limit values and target values, and according to **air quality monitoring** data, processed by Latvian Environment, Geology and Meteorology Centre it can be concluded that:

- as for **ozone** - air quality is in compliance with regulatory norms;
- **As for particulate matter PM₁₀** - air quality is in compliance with regulatory norms;
- **As for toluol** – in 2010 weekly stipulated target value was not achieved, complies with regulatory norms;
- **As for benzol** – the defined benzol yearly concentration norm was not exceeded and the air quality requirements are met;
- no **nitrogen dioxide** exceedances were observed in 2010 ;
- In 2010 Latvian Environment, Geology and Meteorology Centre has not detected any **sulphur dioxide** norm exceedance case.

The annual **ground water quality monitoring** was performed on all the Freeport territory in 2010 and the previously started activities were continued, maintaining the current monitoring network. In 2010 the research of ground and ground water quality on the territories managed by “Baltic Container Terminal” Ltd, “Kravu termināls” Ltd, “LLS Baltic Container Services” Ltd and “Man – Tess” Ltd was carried out.

In 2010 the FPRA continued **rehabilitation** of the historically polluted territories: “OVI Rīga” Ltd, “Eko osta” Ltd, “VL Bunkering” Ltd and “Woodison Terminal” Ltd.

In 2010 a feasibility study for the project related to **rehabilitation of historically polluted FPR territories- the port water area of Ziemas port and Ronu pond** was elaborated with the aim to attract the EU financing for the project implementation.

In 2010 in accordance with provisional data the River Daugava **water quality** on the FPR territory was assessed as average.

Information related to chemical substances or their mix spill registered in 2010 was processed. 9 cases of oil products spill in the port water area were registered.

In 2010 the survey of the FPR territories, that are important for bird population, was continued. A black headed gull colony (20-30 pairs) was detected in the NR “Krēmeri”, that shall be regarded as a very good result, due to the fact that black headed gulls have not been nesting here for a long time.

In 2010 the bulrush cutting was continued in the same amount on the territory of 2, 7 ha. Implemented biotechnical activities shall be evaluated as efficient measures to attract birds for nesting in the NR. During 2010 inspection of Mīlestības Island no birds were detected nesting on the floating platform that was mounted in 2009.

In 2010 the ornithologists inspected the FPR territory and found two nesting places of the European protected bird species – Common tern. One of sites is in the southern part of Mangalsala on one of the "Gamma-A" roofs - some 60-65 of bird nests were detected. A second nesting colony is located in the south of Kundziņsala on a warehouse roof, and there are 49 nests.

The FPRA acts in accordance with valid environmental regulatory enactments, elaborates environmental policy and implements it with the aim to make the Freeport of Riga one of the most environment -friendly ports in the North-Eastern region of the Baltic Sea. For that purpose the FPRA not only implements activities to comply with regulatory enactments but also organizes additional environment monitoring, implements biological diversity conservation measures and provides support to operators to comply with environmental requirements and choose the best available technologies.

Polluted territories according to the LEGMC data base:

| Nr. | Name | Address | Description |
|-----|--|------------------------|--|
| 1. | “Freja” Ltd | Flotes 14 | Former territory of the USSR Army was used for industrial purposes for many years, ground and ground water polluted by heavy metals and oil products. |
| 2. | “KRS” Ltd | Voleru 1 | Ground and ground water are polluted by various chemical substances, resulting from ship repair, metal processing and dying in the open air. Paint, varnish, ink and adhesive waste is detected on the territory. |
| 3. | “Bolderājas kuģu remonta rūpnīca” Ltd | Flotes 2 | Ground and ground water pollution is detected, resulting from ship repair activities during more than 50 years. |
| 4. | “La Con” Ltd | Flotes 6/8 | Former USSR Army fuel base - for several decades Soviet fleet station, automobile park, fuel base were located there, that is why oil product and heavy metal contamination is detected on the said territory. |
| 5. | JSC “Bolderāja” former treatment facilities | Zilā 25 | For 38 years waste water treatment facilities and boiler house have been in operation on this territory. Sludge polluted by synthetic surface active substances, iron, organic substances, sulphate compounds, nitrogen compounds is preserved on the territory, contamination by oil products in the result of former boiler house operation is detected. |
| 6. | “Rīgas jūras osta Voleri” Ltd | Zilā street 5a | Since 1979 ship repair has been carried out on this territory, therefore ground and groundwater pollution with oil products was detected. |
| 7. | “Vižņi” Ltd | Zilā street 5 | For 25 years ship repair, metal scarp storage and welding have taken place, that is why groundwater is polluted with copper and zinc. |
| 8. | “Speja” Ltd | Zilā street 3 | Former “Latvijas upju kuģniecība”, ground water pollution with synthetic surface active substances is detected. |
| 9. | “Jūras vējš” Ltd | Bolderāja highway w/nr | For 25 years equipment has been stored and repaired there, groundwater pollution with copper, zinc and oil products is detected. |
| 10. | “Universālremonts” Ltd | Voleru street 1a | For 36 years the territory has been used for dredger repair and fuel refilling purposes, that is why ground and groundwater is polluted by oil products and synthetic surface active substances. |
| 11. | JSC “Krēmeri”, former Latvian river navigation company | Zilā street 3 | For 25 years activities related to ship and dredging equipment repair have been carried out, due to that ground pollution by oil products was detected, and increased chemical oxygen consumption (pollution factor) was detected in ground water. |
| 12. | “Man-Tess” Ltd | Tvaika street 7a | Wood processing plant and boiler house were located on this territory. Historical |

| Nr. | Name | Address | Description |
|---|---|-----------------------|---|
| | | | pollution with oil products is detected. |
| 13. | JSC "Starts-Rīga" | Tvaika street 68a | Historical pollution with oil products, lead and its compounds was detected on this territory. Pollution migration from adjacent territories is possible. From 1963 -1975 there was fuel refilling station. |
| 14. | "Magnāts" Ltd | Sprīdīša street 1 | After 50 years of active business activities historical oil product and heavy metal contamination of ground and ground water was detected. |
| 15. | JSC "BLB Baltijas Termināls", territory of the former "Latbithim" company | Ezera street 22 | Existing oil base is situated on the territory of the former superphosphate plant and waste disposal. There is historical heavy metal pollution of ground and ground water of the territory, but after accident of 2003 (volume of spill - 1200 m ³) oil product pollution of ground and ground water was detected - the polluted water is regularly pumped out by the enterprise at its own account. |
| 16. | "Vega Stividorš" Ltd, territory of the former "Latbithim" company | Ezera street 22 | Territory of the former superphosphate plant, then of chemical plant "Svaigums". Pollution of ground (heavy metals and oil products) and groundwater (heavy metals) was detected due to the fact that the enterprise is situated on the former superphosphate plant slag and waste, that is 4 m deep. |
| 17. | Woodison Terminal" Ltd | Tvaika street 39 | Former army oil base. There was continuous oil product spill in the course of 100 years period, resulting in 0.2-0.7 m thick floating oil product layer above ground water. Calculated freely floating oil product volume is 280 m ³ . |
| 18. | "Eļļu un smērvielu ražotne Rīga" Ltd | Tvaika street 35, 37a | |
| 19. | VL Bunkering" Ltd, former Mīlgrāvis oil base territory | Tvaika street 68 | |
| 20. | "Vudisona Terminals" Ltd, former military oil base | Viestura Avenue 2 | Since 1940 there has been a military oil base. Regular oil product spills resulted in territory pollution with oil products, there is also 0.51-0.76 m thick floating oil product layer above ground water. |
| 21. | "Baltic Container Terminal" | Kundziņsalas street 1 | Oil product pollution of ground water was detected. Formerly there was an illegal dump at the terminal location. It is possible that this pollution is historical. |
| 22. | SIA "Eko Osta" Ltd, territory of the former USSR oil base | Tvaika street 39 | Former owners left behind historical groundwater pollution with oil products. |
| Potentially polluted territories according to the LEGMC data base: | | | |
| 1. | "Latvijas Rietumu Termināls" Ltd | Tvaika street 7a | The territory is included into the register due to the fact that oil product terminal with over 5000 fuel tons per year (the biggest total volume that was pumped per year during last three years period) is located on the territory. |
| 2. | "Latvijas propāna gāze" Ltd Riga export gas | Zilā street 20 | The territory is included into the register due to the fact that gas station is located on |

| Nr. | Name | Address | Description |
|-----|--|---|--|
| | filling station | | this territory and liquefied gas is stored there |
| 3. | “Korporācija Magnāts” Ltd, at present - “Port Magnat” Ltd | Daugavgrīvas street 83/89 | The territory is included into the register due to the fact that wood processing facilities, that are processing more than 3000 m ³ of sawn timber per year and the produced amount exceeds 1000 m ³ per year. |
| 4. | “Neste Latvija” Ltd Riga terminal | Laivinieku street 5 | The territory is included into the register due to oil product storage on the said territory. |
| 5. | The former USSR army territory – in the Freeport of Riga | Mangaļsalas street at the River Daugava | |
| 6. | JSC “Rīgas kuģu būvetava” | Gāles street 2 | The territory is included into the register due to a ship yard and a powerful boiler house location on this territory. |
| 7. | JSC “BMGS” | Tvaika street 27 | The territory is included into the register due to the fact that concrete and concrete products are produced on this territory with total output exceeding 20 000 cub m per year. |
| 8. | “Latvija Statoil” Ltd terminal | Laivinieku street 7 | The territory is included into the register due to oil product storage on the territory. |
| 9. | The Freeport of Riga , Customs control check-point | Uriekstes street 16 | The territory is included into the register due to the fact that facilities for incineration of garbage and other waste, that is not considered to be dangerous, were located on this territory. |
| 10. | VEXOil Bunkering” Ltd | Atlantijas street 27 | The territory is included into the register due to the fact that since 2002 an oil base with fuel volume exceeding 5000 tons per years, and incineration facilities with consumed heat capacity of 0,5- 50 MW have been located on this territory. |
| 11. | “Gaujas Granulas” Ltd, enterprise producing woodchip pellets | Traleru street 2a | The territory is included into the register due to woodchip pellet production facilities. |