International POPs Elimination Project
Fostering Active and Efficient Civil Society Participation in Preparation for Implementation of the Stockholm Convention

The RSTO Hazardous Waste Landfill: A POPs Waste Hotspot

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About the International POPs Elimination Project

On May 1, 2004, the International POPs Elimination Network (IPEN http://www.ipen.org) began a global NGO project called the International POPs Elimination Project (IPEP) in partnership with the United Nations Industrial Development Organization (UNIDO) and the United Nations Environment Program (UNEP). The Global Environment Facility (GEF) provided core funding for the project.

IPEP has three principal objectives:

- Encourage and enable NGOs in 40 developing and transitional countries to engage in activities that provide concrete and immediate contributions to country efforts in preparing for the implementation of the Stockholm Convention;

- Enhance the skills and knowledge of NGOs to help build their capacity as effective stakeholders in the Convention implementation process;

- Help establish regional and national NGO coordination and capacity in all regions of the world in support of longer term efforts to achieve chemical safety.

IPEP will support preparation of reports on country situation, hotspots, policy briefs, and regional activities. Three principal types of activities will be supported by IPEP: participation in the National Implementation Plan, training and awareness workshops, and public information and awareness campaigns.

For more information, please see http://www.ipen.org

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1. Basic information

„*Controlled solid waste landfill*"(RSTO) hazardous waste landfill is placed in a cadastral area (registered land) of the village Trnovec nad Váhom and in a cadastral area of the town Šaľa. Their owner is the chemical plant, Duslo, a.s. Šaľa and the landfill is used for disposal of the hazardous waste generated during production and non-production activity of the plant.

Production in Duslo Šala is focused on these spheres:
- industrial nitrogenous fertilizers and preparations for the plant protection – the fertilizers production is based on own ammonia production
- rubber chemicals
- polyvinyl acetate dispersions and dispersive glues
- cleansing and disinfection preparations based on sodium hypochlorite
- products of magnesium chemistry

Duslo Šaľa a.s. also runs a hazardous waste incinerator (see Table 1), as well. It started operation in 1982 and since it does not meet valid emission limits, including emission limits for dioxins, Duslo is planning its reconstruction.

Waste from the hazardous waste incinerator is disposed of at the RSTO hazardous waste landfill Duslo Šaľa.

The RSTO hazardous waste landfill has an area of 28 ha and a projected filling capacity of 956 000 m^3. An area of the landfill is bounded by a state road Šaľa – Nové Zámky, an embankment of railway line Nové Zámky – Bratislava and by a safety dam of the river Váh. The landfill is along the whole perimeter fenced by a concrete enclosure. Its distance from river Váh is slightly more than 100m.

Duslo Šaľa disposes the types of the waste listed in Annex No. 2 at the RSTO hazardous waste landfill.

2. Description of the problem

A basic problem of the threat posed by the waste landfill on the surrounding environment and health of the people is in the absence of a good landfill seal and percolating liquids drainage and collection. The result is a risk contamination by the leachates which contain toxic chemicals, including persistent organic pollutants (POPs).

Quoting from the Decision of the Slovak Environment Inspection on integrated permission from 27.1.2005:

- „the landfill bedrock is not created by a geological barrier of required thickness and permeability,
- the landfill bedrock is not completed by an artificial geological thickness and permeability,
- the landfill bedrock is not completed by a layer of foil from high density polyethylene (HDPE) neither by a safety layer,
- unsuitable drainage system".

The landfill operation is permitted by the Slovak Environment Inspection till 31.12.2008, exactly due to not-fulfilling the requirements for the landfill sealing and percolating liquids drainage and collection.

A sealing of the sides was realised along the whole length of the landfill by an underground isolation wall and this was made so that a continuous row of "injection needles" of 1.0 m spacing and 14 - 17 m depth was created. However, the landfill is still not insulated, at the bottom. This means that water percolation, release of leachates and diffusive movement of contaminated liquids can still occur. The landfill still does not have long-term resistance against physical and chemical influences and still poses a threat to public health.

Despite this situation, it is possible to dispose waste of the H - hazardous category in the amount of 6000 t per year. The types of the hazardous waste, for which the landfill has permission, are listed in the table in Annex No. 3. This includes 19 types of hazardous waste including bottom ash. (The types of the waste which Duslo Šaľa actually disposes at the landfill are in Table No. 2).

The waste is disposed freely at the landfill, except for arsenic waste. In practice this means dumping it at the place directed by the landfill staff. The surface of the dumped waste is planed by the bulldozer, solidified and covered by an inert layer. Referring to the character of the waste and amount of the waste supply, the waste is solidified 1 x per month. The working layer reaches, at a maximum, 2 m. The following layer is built at angle of about 5 %.

Only one type of the waste – arsenic waste, processed by a solidification method, is disposed of to the cartridges. Consolidated, solidified arsenic waste is covered by a minimum of 5 cm of concrete layer and then by about 0.5 m thick layer of the soil from the landfill.

Referring to the possibility of percolation of the waters from the landfill body into the aquiferous quaternary sands there is a possibility of pressure of underground water level increase, along the landfill perimeter are realised deriving and monitoring drills labelled by OVM 1 - 8, which are in the case of the necessity used for underground waters drainage. Their depth is 18 m and they are equipped by PVC rafters with an internal diameter 200 mm. The head of the drill is secured by a steel rafter with a lockable covering.

The landfill body contains degassing probes labelled C 1 – 10, which come to the height of 2 m. Gas creation is minimal, it cannot be used industrially and the generated amount is ventilated into the air.

The so-called accumulation container with an area of about 1.5 ha, works as percolation liquids container, is at the north-western part of the landfill. The drainage system is built around the landfill perimeter, for collection of the precipitation waters and one layer runs from the centre of the landfill to the percolation liquids container.

In the landfill surroundings, analyses of underground waters for Ministry of the Environment, by the company Vodné zdroje Slovakia found landfill percolations contaminating the water. So far, there have not been any measurements of POPs releases, including dioxins from ash from the hazardous waste incinerator Duslo Šaľa, into the surrounding environment from this insufficiently secured waste landfill. Based on the facts mentioned above, there is a high likelihood of POPs releases and contamination of the surrounding environment, since there were already found percolations of other chemicals into the surrounding area.

Also for these reasons, non-governmental organization Priatelia Zeme - SPZ started POPs monitoring in the surroundings of this hazardous waste landfill and it will attempt to point out the risk of the environmental pollution from such an insufficiently secured landfill of POPs-containing waste.

Annexes

Annex No. 1: Basic data about hazardous waste incinerator Duslo Šaľa a.s.

Type of an incinerating facility: Rotation furnace, Fluid furnace

Method of combustion products cleaning: Acid combustion products scrubber

Capacity: projected - 5t/hour; actual - 2t/ hour

Annex No. 2: Types of the hazardous waste, which Duslo Šaľa deposits at insufficiently secured at the RSTO hazardous waste landfill. (tonnes)

Waste Name	List No.	I.Q	II.Q	III.Q	IV.Q	Year 2005
Spent catalysts contaminated with hazardous substances	16 08 07 H	53.72	154.56	222.60	213.70	644.58
Mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances	17 01 06 H	108.30	88.46	202.60	0	399.36
Soil and stones containing hazardous substances	17 05 03 H	0	3.96	0	0	3.96
Dredging spoil containing hazardous substances	17 05 05 H	0	0	38.68	0	38.68
Other insulation materials consisting of or containing hazardous substances	17 06 03 H	28.92	21.70	68.26	46.80	165.68
Other construction and demolition wastes (including mixed wastes) containing hazardous substances	17 09 03 H	2.82	50.78	271.14	13.34	338.08
Bottom ash and slag containing hazardous substances	19 01 11 H	172.42	172.18	189.10	211.50	745.20
Other filter cakes, spent absorbents	07 07 10 H	0	19.38	0	5.60	24.98
Total		366.18	511.02	992.38	490.94	**2360.52**

Annex No. 3: Types of the waste, for disposing of which the hazardous waste landfill has permission.

Waste List No.	Waste Name	Waste category
07 02 14	wastes from additives containing hazardous substances	H
07 07 10	other filter cakes, spent absorbents	H
16 03 03	inorganic wastes containing hazardous substances	H
16 05 07	discarded inorganic chemicals consisting of or containing hazardous substances	H
16 08 07	spent catalysts contaminated with hazardous substances	H
16 11 05	linings and refractories from non-metallurgical processes containing hazardous substances	H
17 01 06	mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances	H
17 02 04	glass, plastic and wood containing or contaminated with hazardous substances	H
17 05 03	soil and stones containing hazardous substances	H
17 05 05	dredging spoil containing hazardous substances	H
17 05 07	track ballast containing hazardous substances	H
17 06 03	other insulation materials consisting of or containing hazardous substances	H
17 09 01	construction and demolition wastes containing mercury	H
17 09 03	other construction and demolition wastes (including mixed wastes) containing hazardous substances	H
19 01 07	solid waste from gas treatment	H
19 01 11	bottom ash and slag containing hazardous substances	H
19 01 15	boiler dust containing hazardous substances	H
19 03 06	wastes marked as hazardous, solidified	H