

Block I General details	
1	<p>Location of the PCB disposal facility:</p> <p>Name of Facility: HIDRONOR CHILE S.A.</p> <p>City: Santiago Country: CHILE</p> <p><i>(Provide address information in Block IV)</i></p>
2	<p>Licence / authorization:</p> <p>Is this facility licensed or authorized to handle PCBs? X Yes</p> <p>If "Yes":</p> <p>(i) Nature of licence / authorization: Environmental Qualifying Resolution CONAMA N°482 Sanitary Resolution SESMA N° 19696 Sanitary Resolution SESMA N° 20909</p> <p>(ii) Please submit the licensing history <i>permanent</i></p> <p>Issuing authority (name): CONAMA Environmental Health Metropolitan Service (SESMA)</p> <p>X National <input type="checkbox"/> Local or <input type="checkbox"/> Independent</p>
3	<p>Please provide information on storage at the facility including:</p> <p>Capacity for the various PCB waste and equipment types:</p> <p>300 tons</p> <p>Method:</p> <p>Storage, Handling, Metal Recovery, Incineration</p> <p>Holding time:</p> <p>6 months</p>
4	<p>Worker protection <i>(Please summarize protective measures applied during treatment of PCB wastes)</i></p> <p>Complete protection equipment; complete face mask, protective suit, polipropilene gloves,</p> <p>Does the facility have an accident book? X Yes</p> <p>Most frequent cause(s) of incidents involving PCBs:</p> <p>Our facility does not report any incident involving PCB's up to date.</p>

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Opinion box - PCB Management issues *(Please describe briefly)*

What are your major concerns?

The absence of an specific law for the immediate prohibition of any PCB's uses in Chile

Can you identify research and development needs in PCB management that would be beneficial for your region and waste managers worldwide?

The development of a complete analithical capacity for PCB determination

Block II Types of PCB wastes

Part A: Treatment of PCB containing equipment/material

Part A1: Metallic Parts

A1.1

Types of metallic PCB equipment/material treated:

Limitation on waste accepted
(please specify, if appropriate)

Concentration <i>(specify the unit)</i>		Quantity <i>(specify the unit)</i>
unit:		unit: tons
min	max	

Equipment containing 100 % PCB

NONE NONE 300

Equipment containing mineral oil contaminated by PCB

NONE NONE 300

Others:

NONE NONE 300

*Please specify any other limitation on waste accepted: **NONE***

A1.2

Presentation of metallic equipment/material

In what form must the metallic PCB equipment/material be presented:

Drums

Other packaging: any packaging

Other constraints:

A1.3

Treatment of metallic PCB equipment/material

Immediate destruction of metallic equipment/material containing PCB? **No X**

If 'Yes', please specify the applied technology in Part III

Extraction of PCB? **Yes X**

If 'Yes':

- please specify the applied technology in Part III
- Is the decontaminated metallic equipment/material subjected to reuse/recycling? **Yes X**

If 'Yes', please specify in **Block II Part C** (Reuse and recycling)

Part A: Treatment of PCB containing equipment/material

Part A2: Non-metallic Parts

A2.1	Types of non-metallic PCB equipment/material treated:	Limitation on waste accepted <i>(please specify, if appropriate)</i>		
		Concentration <i>(specify the unit)</i>		Quantity <i>(specify the unit)</i>
		unit:		unit: tons
		min	max	
	<input type="checkbox"/> PCB-containing materials (clothes, cables, etc.)	NONE	NONE	300
	<input type="checkbox"/> PCB-contaminated residues, sludges	NONE	NONE	300
	<input type="checkbox"/> PCB-contaminated soils and sediments	NONE	NONE	300
	<input type="checkbox"/> Packaged / drummed waste	NONE	NONE	300
	<input type="checkbox"/> Other:	NONE	NONE	300
Please specify any other limitation on waste accepted: NONE				
A2.2	Presentation of non-metallic equipment/material In what form must the non-metallic PCB equipment/material be presented: <input checked="" type="checkbox"/> Drums <input checked="" type="checkbox"/> Other packaging: any packaging <input type="checkbox"/> Other constraints:			

A2.3

Treatment of non-metallic PCB equipment/material

Immediate destruction of non-metallic equipment/material containing PCB? **Yes X**

If 'Yes', please specify the applied technology in Part III

Extraction of PCB? **X No**

If 'Yes':

- please specify the applied technology in Part III
- Is the decontaminated non-metallic equipment/material subjected to reuse/recycling? Yes No

If 'Yes', please specify in **Block II Part C** (Reuse and Recycling)

Part B: Treatment of PCB oils and PCB waste oils

B1	Types of PCB oils and PCB waste oils treated:	Limitation on waste accepted (please specify, if appropriate)		
		Concentration (specify the unit) unit: min max		Quantity (specify the unit) unit: tons
	<input type="checkbox"/> 100 % PCB oils	NONE	NONE	300
	<input type="checkbox"/> Mineral oils contaminated by PCB	NONE	NONE	300
	<input type="checkbox"/> Waste oils contaminated by PCB	NONE	NONE	300
	<input type="checkbox"/> Other:	NONE	NONE	300
<p><i>Please specify any other limitation on waste accepted: NONE</i></p>				
B2	<p>Presentation of PCB oils and PCB waste oils</p> <p>In what form must the PCB oils and PCB waste oils be presented:</p> <p><input checked="" type="checkbox"/> Drums</p> <p><input checked="" type="checkbox"/> Other packaging: any packaging</p> <p><input type="checkbox"/> Other constraints:</p>			
B3	<p>Treatment of PCB oils and PCB waste oils</p> <p>Please specify the applied technology for the destruction of PCB oils and PCB waste oils in Part III</p>			

Part C: Reuse & Recycling of decontaminated PCB equipment/material

<p>C1</p>	<p>Types decontaminated PCB equipment/material treated:</p> <p><input type="checkbox"/> Transformers</p> <p><input type="checkbox"/> Capacitors</p> <p><input type="checkbox"/> Materials (clothes, cables, etc.)</p> <p><input type="checkbox"/> Residues, sludges</p> <p><input type="checkbox"/> Soils and sediments</p> <p><input type="checkbox"/> Other:</p>	<p>Limitation on waste accepted <i>(please specify, if appropriate)</i></p> <p>Quantity <i>(specify the unit)</i></p> <p>unit: tons</p> <p>300</p>
<p><i>Please specify any other limitation on waste accepted: NONE</i></p>		
<p>C2</p>	<p>Presentation of decontaminated PCB equipment/material</p> <p>In what form must the decontaminated PCB equipment/material be presented:</p> <p><input checked="" type="checkbox"/> Drums</p> <p><input checked="" type="checkbox"/> Other packaging: any packaging</p> <p><input type="checkbox"/> Other constraints:</p>	

C3

Treatment of decontaminated PCB equipment/material

Reuse and Recycling of decontaminated PCB equipment/material? **Yes X**

If 'Yes', please specify the applied technology in Part III

Is the decontaminated PCB equipment/material disposed of? **No X**

If 'Yes', please specify:

Transport to the disposal site? **No X**

If 'Yes':

International transport

National transport

Location of disposal site:

Please provide a short description of disposal site:

Block III Detailed information on applied technologies		
1	The following description refers to Block II, Part:	Type of PCB waste or decontaminated equipment/material:
	<input type="checkbox"/> A1 (Treatment of metallic PCB equipment/material)	<i>High pressure solvent cleaning</i>
	<input type="checkbox"/> A2 (Treatment of non-metallic PCB equipment/material)	<i>Incineration</i>
	<input type="checkbox"/> B (Treatment of PCB oil and PCB waste oil)	<i>Incineration</i>
	<input type="checkbox"/> C (Reuse and recycling of decontaminated PCB equipment/material)	<i>Iron scrap for steel industry</i>
2	<p>Applied technologies (Please specify the technology used for disposal):</p> <p><input checked="" type="checkbox"/> Pyrolysis / gasifiers</p> <p><input checked="" type="checkbox"/> Gas Phase Chemical Reduction (GPCR)</p> <p><input type="checkbox"/> Base Catalysed Decomposition (BCD)</p> <p><input type="checkbox"/> Sodium Reduction</p> <p><input type="checkbox"/> Super-Critical Water Oxidation (SCWO)</p> <p><input type="checkbox"/> Plasma Arc</p> <p><input type="checkbox"/> Molten Salt Oxidation</p> <p><input type="checkbox"/> Solvated Electron Technology</p> <p><input type="checkbox"/> Retrofilling</p> <p><input type="checkbox"/> Other:</p> <p>Type of technology (1-sentence description): <i>Incineration at high temperature with gas treatment unit</i></p> <p>Description of the technology please provide additional information as appropriate (<i>summarize here and, if necessary, attach documentation</i>)</p> <p>Commissioned? <input type="checkbox"/> Yes <input type="checkbox"/> No Year:</p> <p>Can the technology be used in a mobile facility? <input checked="" type="checkbox"/> No</p>	
3	<p>State of development</p> <p>Does the technology exist as an industrial unit? <input checked="" type="checkbox"/> Yes</p> <p>If "No", please indicate when it will become operational:</p> <p>If "Yes", please indicate how many units exist: 3</p> <p>In what countries: Spain ; Netherlands ;England</p>	

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Pretreatment:

Does the technology require any pretreatment procedures? **No**

If "Yes", please specify required pretreatment procedures:

- Thermal Desorption
- Dilution
- Low Temperature Rinsing
- Electro-osmosis
- Draining/Solvent washing
- Dismantling/Shredding
- Other:

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Byproducts

What byproducts does the technology produce? *(please specify below)*

Byproduct	Kind	Amount
Liquids:		L per tonnes of waste treated
Solids:		kg per tonnes of waste treated
Air:		m ³ per tonnes of waste treated

Does the technology allow all byproducts to be monitored for POPs*/PTS** before release? **X Yes**

If POPs*/PTS** are discovered, can the byproducts be returned to the process for further treatment? **X Yes**

Are any of the byproducts classified as other sorts of hazardous wastes? **X Yes**

If "Yes" please specify: ***The fly ashes are treated and disposed as hazardous wastes***

What volumes of such byproducts are generated by handling a unit volume of PCB wastes: not constant

Can third party monitoring data be provided? **X No**

If "Yes", please attach to this questionnaire.

* POPs: Persistent Organic Pollutants

** PTS: Persistent Toxic Substances

How are byproducts disposed of? *(please describe briefly)*

The dry fly ash are solidified and disposed in a secure landfill

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Efficiency

(please specify, if appropriate)

Destruction efficiencies (DEs): **99,9999 %**

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Monitoring & Control of releases

What technologies are used to monitor releases:

Air:

Effluents:

Solids:

Are all releases monitored for POPs/PTS before release? **X Yes**

If POPs*/PTS** are discovered, can the releases be returned to the process for further treatment? **X Yes**

Are any of the releases classified as hazardous wastes? **X Yes**

If "Yes" please specify: Fly ash is classified as hazardous waste

What technologies are used/ required to monitor and treat any such releases prior to release: **solidification**

What volumes of such releases are generated by handling a unit volume of PCB wastes:

Is third party monitoring data available? **X No**

If "Yes", please attach to this questionnaire.

* POPs: Persistent Organic Pollutants

** PTS: Persistent Toxic Substances

How are releases disposed of? (please describe briefly)

The dry fly ash are solidified and disposed in a secure landfill

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Disposal costs

What are the *approximate* costs for applying the technology per unit[‡], **including** costs for all technical pretreatment steps, **excluding** all costs **not** related to the technical application of the technology (transport costs, costs for disposal of decontaminated transformers/capacitors/materials, etc.)?

Please specify type of treated/disposed PCB equipment/material/oil below:

Costs per unit [‡]	Currency
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	a)		
	b)		
	c)		
	d)		
	e)		
	f)		
	g)		
‡ Specify the unit for a) to g):			

9	<p>Treatment capacities and scaling (<i>tonnes per year for main waste & equipment types</i>)</p> <p>Capacity of existing facilities: units[‡] per year</p> <p>Can the technology be adapted to higher or lower capacities? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If "Yes":</p> <p>(i) What is the capacity of the smallest commercially viable facility: units[‡] per year</p> <p>(ii) What is the capacity of the largest commercially viable facility: units[‡] per year</p> <p>Does the adaptation will cause additional costs? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If "Yes" specify the increase in costs for the adaptation (%) of the initial costs:</p> <p>(i) For smaller plants: %</p> <p> For larger plants: %</p> <p>‡ Please specify the unit:</p>
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Block IV**Facility: Address and Service Information****1**Facility Name: **HIDRONOR CHILE S.A.**Address: **Av. Vizcaya 260 - Pudahuel**City/Town: **Santiago**

P.O. Box:

District/State:

Country: **Chile**Telephone: **(56-2) 2118060**Fax **(56-2) 2113843**Email: **info@hidronor.cl**Web site: **www.hidronor.cl**

Person completing form

Name: **Jose Irureta Uriarte**Email: **jirureta@hidronor.cl**Position: **Comercial Director**Parent Company (if different): **MACHIELS**Address: **EKKELGAARDEN 16**City/Town: **3500 HASSELT**

P.O. Box:

District/State:

Country: **BELGICA**Telephone: **32 (0) 11/28.70.70**Fax: **32 (0) 11/28.70.51**Email: **info@groupmachiels.com**

<p>2</p>	<p>Other Services offered by the company</p> <ul style="list-style-type: none"> X Laboratory analysis / testing X PCB waste packaging for shipment X PCB classification / labeling X Clean-up of PCB contaminated sites X PCB wastes transport X Other PCB-related services: SUPPORT LOGISTIC
<p>3</p>	<p>Further information</p> <p>Identify any company information (brochures, notes etc...) provided separately and if you wish provide additional comments on your services in not more than 50 words:</p> <p><i>In Chile our company is the only one who was the necessary environmental and sanitary authorizations to storage and handle PCB's equipment and material.</i></p> <p><i>We have also the only facility existing in Chile for PCB's handling and storage.</i></p>