

Block I General details	
1	<p>Location of the PCB disposal facility:</p> <p>Name of Facility: <i>MOBILE TREATMENT FACILITY</i></p> <p>City: <i>ANY</i> Country: <i>ANY</i></p> <p>(Provide address information in Block IV)</p>
2	<p>Licence / authorization:</p> <p>Is this facility licensed or authorized to handle PCBs? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If "Yes":</p> <p>(i) Nature of license / authorization: <i>US EPA PERMIT, JAPANESE APPROVAL, CANADIAN APPROVAL</i></p> <p>(ii) Please submit the licensing history (please attach to this questionnaire)</p> <p>Issuing authority (name):</p> <p><input checked="" type="checkbox"/> 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><i>SITES FROM 100 TONS TO 1,000,000 TONS SOIL + SEDIMENT</i></p> <p>Method: <i>SOLVENT EXTRACTION</i></p> <p>Holding time: <i>VARIES ACCORDING TO SOIL TYPE, INITIAL CONTAMINATION LEVELS, FINAL TREATMENT GOALS</i></p>
4	<p>Worker protection (Please summarize protective measures applied during treatment of PCB wastes)</p> <p><i>MODIFIED LEVEL D FOR OPERATORS, AS THE PCB WASTE IS CONTAMINATED. FOR SYSTEM REPAIRS, LEVEL C.</i></p> <p>Does the facility have an accident book? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Most frequent cause(s) of incidents involving PCBs: <i>NONE TO DATE. WITH PCBs. DID HAVE A TWISTED KNEE FROM SLIPPING, AND A BROKEN TOOTH FROM A SLIPPED HANDWRENCH.</i></p>

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Opinion box - PCB Management issues (Please describe briefly)

What are your major concerns?

BECAUSE OUR OPERATORS ARE NOT IN CONTACT WITH THE WASTES, THERE ARE FEW ISSUES. OUR PROCESS IS DONE AT STANDARD PRESSURE AND TEMPERATURE. OUR BIGGEST CONCERN IS THAT NO ONE STEPS IN FRONT OF A SOIL HAUL TRUCK

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

IT HAS BEEN RESEARCHED TO DEATH ALREADY. IT MAKES MORE SENSE TO SPEND THE MONEY IN REMEDIATION RATHER THAN RESEARCH.

Block II Types of PCB wastes

Part A: Treatment of PCB containing equipment/material

Part A1: Metallic Parts

NOT APPLICABLE.

A1.1	Types of 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:
		min	max
	<input type="checkbox"/> Equipment containing 100 % PCB		
	<input type="checkbox"/> Equipment containing mineral oil contaminated by PCB		
	<input type="checkbox"/> Others:		
<i>Please specify any other limitation on waste accepted:</i>			
A1.2	Presentation of metallic equipment/material In what form must the metallic PCB equipment/material be presented: <input type="checkbox"/> Drums <input type="checkbox"/> Other packaging: <input type="checkbox"/> Other constraints:		

A1.3

Treatment of metallic PCB equipment/material

Immediate destruction of metallic equipment/material containing PCB? Yes No

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

Extraction of PCB? Yes No

If 'Yes':

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

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 (please specify, if appropriate)		
		Concentration (specify the unit) unit:		Quantity (specify the unit) unit:
		min	max	
<input type="checkbox"/>	PCB-containing materials (clothes, cables, etc.)			
<input type="checkbox"/>	PCB-contaminated residues, sludges			
<input checked="" type="checkbox"/>	PCB-contaminated soils and sediments	5000	50,000	mg/kg
<input checked="" type="checkbox"/>	Packaged / drummed waste	1	50,000	mg/kg
<input checked="" type="checkbox"/>	Other: <i>SOME PCB DEBRIS</i>	1	50,000	mg/kg
Please specify any other limitation on waste accepted:				
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: <i>SOIL/SEDIMENT PILES</i> <input type="checkbox"/> Other constraints:			

A2.3

Treatment of non-metallic PCB equipment/material

Immediate destruction of non-metallic equipment/material containing PCB? Yes No

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

Extraction of PCB? Yes 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

NOT APPLICABLE

B1	Types of PCB oils and PCB waste oils 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:
		min	max	
	<input type="checkbox"/> 100 % PCB oils			
<input type="checkbox"/> Mineral oils contaminated by PCB				
<input type="checkbox"/> Waste oils contaminated by PCB				
<input type="checkbox"/> Other:				
Please specify any other limitation on waste accepted:				
B2	<p>Presentation of PCB oil and PCB waste oil</p> <p>In what form must the PCB oil and PCB waste oil be presented:</p> <p><input type="checkbox"/> Drums</p> <p><input type="checkbox"/> Other 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

C1	Types decontaminated PCB equipment/material treated:	Limitation on waste accepted <i>(please specify, if appropriate)</i>
		Quantity <i>(specify the unit)</i>
		unit:
	<input type="checkbox"/> Transformers	
	<input type="checkbox"/> Capacitors	
	<input type="checkbox"/> Materials (clothes, cables, etc.)	
	<input type="checkbox"/> Residues, sludges	
	<input checked="" type="checkbox"/> Soils and sediments	UP TO 50,000 mg/kg TREATED TO 21 mg/kg
<input type="checkbox"/> Other:		
<i>Please specify any other limitation on waste accepted:</i>		
C2	Presentation of decontaminated PCB equipment/material In what form must the decontaminated PCB equipment/material be presented: <input checked="" type="checkbox"/> Drums <input checked="" type="checkbox"/> Other packaging: SOIL / SEDIMENT PILES <input type="checkbox"/> Other constraints:	

C3

Treatment of decontaminated PCB equipment/material

Reuse and Recycling of decontaminated PCB equipment/material? Yes No

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

Is the decontaminated PCB equipment/material disposed of? Yes No

If 'Yes', please specify:

Transport to the disposal site? Yes No

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)	
	<input checked="" type="checkbox"/> A2 (Treatment of non-metallic PCB equipment/material)	SOIL + SEDIMENT
	<input type="checkbox"/> B (Treatment of PCB oil and PCB waste oil)	
	<input type="checkbox"/> C (Reuse and recycling of decontaminated PCB equipment/material)	
2	<p>Applied technologies (Please specify the technology used for disposal):</p> <p><input type="checkbox"/> Pyrolysis / gasifiers</p> <p><input 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 checked="" type="checkbox"/> Other: SOLVENT EXTRACTION FOLLOWED BY ANY OF THE ABOVE</p> <p>Type of technology (1-sentence description): NON-TOXIC SOLVENTS ARE USED TO SEPARATE PCBs OUT OF SOIL AND SEDIMENT.</p> <p>Description of the technology please provide additional information as appropriate (summarize here and, if necessary, attach documentation) SEE ATTACHED.</p> <p>Commissioned? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Year: 1994</p> <p>Can the technology be used in a mobile facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	
3	<p>State of development</p> <p>Does the technology exist as an industrial unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If "No", please indicate when it will become operational:</p> <p>If "Yes", please indicate how many units exist: 3 SETS.</p> <p>In what countries: JAPAN AND USA. MOVING A SET TO CANADA AND AUSTRALIA IN 2004.</p>	

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Pretreatment:

Does the technology require any pretreatment procedures? Yes 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:	PCBs IN OIL	VARIES 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? Yes No

If POPs*/PTS** are discovered, can the byproducts be returned to the process for further treatment? Yes No

Are any of the byproducts classified as other sorts of hazardous wastes? Yes No

If "Yes" please specify:

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

Can third party monitoring data be provided? Yes No

If "Yes", please attach to this questionnaire.

ATTACHED.

* POPs: Persistent Organic Pollutants
 ** PTS: Persistent Toxic Substances

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

6	<p>Efficiency (please specify, if appropriate)</p> <p>Destruction efficiencies (DEs): <i>99.9999 % EQUIVALENCY, AS PER</i></p>
7	<p>Monitoring & Control of releases <i>US EPA PERMIT.</i></p> <p>What technologies are used to monitor releases:</p> <p>Air: <i>STANDARD DUST MONITORS</i></p> <p>Effluents: <i>NONE</i></p> <p>Solids: <i>SOIL → PCBs VIA SW40 METHOD 8082</i></p> <p>Are all releases monitored for POPs*/PTS** before release? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If POPs*/PTS** are discovered, can the releases be returned to the process for further treatment? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are any of the releases classified as hazardous wastes? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If "Yes" please specify:</p> <p>What technologies are used/ required to monitor and treat any such releases prior to release: <i>ON SITE GC.</i></p> <p>What volumes of such releases are generated by handling a unit volume of PCB wastes: <i>NONE</i></p> <p>Is third party monitoring data available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If "Yes", please attach to this questionnaire. <i>ATTACHED</i></p>
	<p>How are releases disposed of? (please describe briefly)</p>

* POPs: Persistent Organic Pollutants
 ** PTS: Persistent Toxic Substances

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Disposal costs

What are the *approximate* costs for applying the technology per unit[‡], **including** costs for all technical pretreatment steps and **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
a) <i>SOLC</i>	<i>\$100 - 400/TON</i>	<i>US</i>
b)		
c)		
d)		
e)		
f)		
g)		

[‡] Specify the unit for a) to g):

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Treatment capacities and scaling (tonnes per year for main waste & equipment types)

Capacity of existing facilities: *10,000 TONS* units[‡] per year

Can the technology be adapted to higher or lower capacities? Yes No

If "Yes":

- (i) What is the capacity of the smallest commercially ~~TE~~ viable facility: *1,000* units[‡] per year
- (ii) What is the capacity of the largest commercially viable facility: *100,000* units[‡] per year
TONS

Does the adaptation will cause additional costs? Yes No

If "Yes" specify the increase in costs for the adaptation (%) of the initial costs:

- (i) For smaller plants: *VARIES* %
For larger plants: *VARIES* %

[‡] Please specify the unit: *TONS*

Block IV

Facility: Address and Service Information

1

Facility Name: MAIN OFFICE, TERRA-KLEEN
Address: 3970 B SORRENTO VALLEY BLVD
City/Town: SAN DIEGO, CA 92121
P.O. Box:
District/State: CA, 92121
Country: USA
Telephone: 858-558-8762
Fax: 858-558-8759
Email: ALAN@TERRA-KLEEN.COM
Web site: WWW.TERRA-KLEEN.COM

Person completing form ~~AK~~

Name: ALAN CASH
Position: PRESIDENT

Parent Company (if different):

Address:
City/Town:
P.O. Box:
District/State:
Country:
Telephone:
Fax:
Email:

2	<p>Other Services offered by the company</p> <ul style="list-style-type: none"><input checked="" type="checkbox"/> Laboratory analysis / testing<input checked="" type="checkbox"/> PCB waste packaging for shipment<input checked="" type="checkbox"/> PCB classification / labeling<input checked="" type="checkbox"/> Clean-up of PCB contaminated sites<input checked="" type="checkbox"/> PCB wastes transport<input checked="" type="checkbox"/> Other PCB-related services: <i>TREATABILITY TESTING</i>
3	<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>TERRA-KLEEN IS THE WORLD LEADER IN SOLVENT EXTRACTION TECHNOLOGY TO SEPARATE PCBs, PESTICIDES AND DIOXINS FROM SOIL, SEDIMENT, ASH AND DEBRIS. TERRA-KLEEN HAS COMPLETED MANY FULL SCALE SITES FOR THE US NAVY, AIRFORCE, ARMY CORPS OF ENGINEERS AND US EPA.</i></p>