



Hatfield
CONSULTANTS

Regional Capacity Building Program for Health Risk Management of Persistent Organic Pollutants (POPs) in South East Asia



Final Risk Assessment Report for
Air Hitam Sanitary Landfill Site
Selangor, Malaysia

March 2009



Canadian International
Development Agency

Agence canadienne de
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REGIONAL CAPACITY BUILDING PROGRAM FOR HEALTH RISK MANAGEMENT OF PERSISTENT ORGANIC POLLUTANTS (POPs) IN SOUTH EAST ASIA

FINAL RISK ASSESSMENT REPORT FOR AIR HITAM SANITARY LANDFILL SITE, SELANGOR, MALAYSIA

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LIST OF ACRONYMS

AHSL	Air Hitam Sanitary Landfill (study site)
CALUX	Chemically Activated Luciferase Gene Expression
CCME	Canadian Council of Ministers for the Environment
CIDA	Canadian International Development Agency
CDM	Clean development mechanism
COC	Chain of Custody (form)
COPC	Contaminants of Potential Concern
EIA	Environmental Impact Assessment
GCMS	Gas Chromatography Mass Spectroscopy
GIS	Geographic Information System
HCH	Hexachloro Cyclo Hexane
HHRA	Human Health Risk Assessment
HPT	Hatfield POPs Project Team
HQ	Hazard Quotient
HR GCMS	High Resolution Gas Chromatography – Mass Spectrometry
ILCR	Incremental Lifetime Cancer Risk
IR	Intake Rate
LCPCMP	Landfill Closure and Maintenance Post Closure Management Plan
LE	Years Of Exposure
NFP	National Focal Point for POPs
NC	National Consultant
NIP	National Implementation Plan
NDR	Non-Detect Ratio (a reported concentration that did not meet all quantification criteria)
NRE	Ministry of Natural Resources and Environment
MHLG	Ministry of Housing and Local Government
MPSJ	Municipal Council of Subang Jaya
RA/RM	Risk Assessment/Risk Management
RBCs	Risk Based Concentration

SF	Cancer Slope factor
SOPs	Standard Operation Procedures
PCBs	Polychlorinated Biphenyls
PBDEs	Polybrominated diphenyl ethers
PCDDs	Polychlorinated dibenzodioxins or Dioxins
PCDFs	Polychlorinated dibenzofurans or Furans
PFCs	Polyfluorinated chemicals
PF	Problem Formulation
PIP	Project Implementation Plan
PTS	Persistent Toxic Substances
POPs	Persistent Organic Pollutants
POPs Project	Regional Capacity Development Program for Management of Health Risks of Persistent Organic Pollutants in South East Asia
TCDD	Tetrachlorodibenzo-P-Dioxin
TCDF	Tetrachlorodibenzofuran
TDI	Tolerable Daily Intake
TEF	Toxic Equivalence Factor
TEQ	Toxic Equivalence to 2,3,7,8 TCDD
TRV	Toxicity Reference Value
QA/QC	Quality Assurance / Quality Control
USEPA	United States Environmental Protection Agency
WLSB	Worldwide Landfills Sdn Bhd
XDS	Xenobiotic Detection Systems Inc.

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DISTRIBUTION LIST

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