

RECEIVED

'12 APR -5 P 3:08

DEPT OF PLANNING  
AND PERMITTING  
CITY & COUNTY OF HONOLULU

CADES SCHUTTE LLP  
CALVERT G. CHIPCHASE 7757-0  
CHRISTOPHER T. GOODIN 8562-0  
1000 Bishop Street, Suite 1200  
Honolulu, Hawai'i 96813-4212  
Telephone: (808) 521-9200  
Facsimile: (808) 521-9210  
E-mail: cchipchase@ca-des.com  
cgoodin@ca-des.com

Attorneys for Intervenors  
KO OLINA COMMUNITY ASSOCIATION  
and MAILE SHIMABUKURO

BEFORE THE PLANNING COMMISSION  
OF THE CITY AND COUNTY OF HONOLULU  
STATE OF HAWAII

In the Matter of the Application of  
  
DEPARTMENT OF ENVIRONMENTAL  
SERVICES, CITY AND COUNTY OF  
HONOLULU

To delete Condition No. 14 of Special  
Use Permit No. 2008/SUP-2 (also  
referred to as Land Use Commission  
Docket No. SP09-403) which states as  
follows:

“14. Municipal solid waste shall be  
allowed at the WGSL up to July 31,  
2012, provided that only ash and residue  
from H-POWER shall be allowed at the  
WGSL after July 31, 2012.”

FILE NO. 2008/SUP-2

**INTERVENORS KO OLINA  
COMMUNITY ASSOCIATION AND  
MAILE SHIMABUKURO'S  
SEVENTH AMENDED EXHIBIT  
LIST**

**EXHIBITS K191, K194, K208, K215,  
K217, K218, K222, K223, K226, &  
K227**

**CERTIFICATE OF SERVICE**

**INTERVENORS KO OLINA COMMUNITY ASSOCIATION AND MAILE  
SHIMABUKURO'S SIXTH AMENDED EXHIBIT LIST**

---

Intervenors Ko Olina Community Association and Maile Shimabukuro (together “Intervenors”) submit their seventh amended exhibit list. Intervenors reserve the right to amend or supplement this list as additional exhibits are identified:

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K1		1/11/12		March 13, 2003 Findings of Fact, Conclusions, and Decision by the Planning Commission	
K2		1/11/12		June 5, 2003 Decision and Order Approving Amendment to Special Use Permit by the Land Use Commission	
K3		1/11/12		January 16, 2008 Findings of Fact, Conclusions of law, and Decision and Order by the Planning Commission	
K4		1/11/12		March 13, 2008 Findings of Fact, Conclusions of Law, and Decision by the Planning Commission	
K5		1/11/12		October 2008 Final Environmental Impact Statement re Waimanalo Gulch Sanitary Landfill Lateral Expansion by R.M. Towill Corporation (excerpts)	
K6		1/11/12		April 3, 2009 Letter from Abbey Seth Mayer to David K. Tanoue	
K7		1/11/12		June 22, 2009 Transcript of the Contested Case Hearing Before the Planning Commission (excerpts)	
K8		1/11/12		June 24, 2009 Transcript of the Contested Case Hearing Before the Planning Commission (excerpts)	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K9		1/11/12		July 1, 2009 Transcript of the Contested Case Hearing Before the Planning Commission (excerpts)	
K10		1/11/12		July 2, 2009 Transcript of the Contested Case Hearing Before the Planning Commission (excerpts)	
K11		1/11/12		July 8, 2009 Transcript of the Contested Case Hearing Before the Planning Commission (excerpts)	
K12		1/11/12		August 4, 2009 Findings of Fact, Conclusions of Law, and Decision and Order by the Planning Commission	
K13		1/11/12		September 22, 2009 Letter from Abbey Seth Mayer to Ransom Plitz	
K14		1/11/12		September 24, 2009 Transcript of Proceedings Before the Land Use Commission (excerpts)	
K15		1/11/12		October 22, 2009 Order Adopting the City and County of Planning Commission's Findings of Fact, Conclusions of Law and Decision and Order with Modifications by the Land Use Commission	
K16		1/11/12		January 22, 2010 Status Report on Reducing and/or Continuing the Use of Waimanalo Gulch Sanitary Landfill (WGSL)	
K17		1/11/12		April 12, 2010 Appellee Land Use Commission's Answering Brief in <i>Department of Environmental Services v. Land Use Commission</i> , Civ. No. 09-102719-11 (Haw. 1st Cir. Ct.) (excerpts)	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K18		1/11/12		April 21, 2010 Status Report on Reducing and/or Continuing the Use of Waimanalo Gulch Sanitary Landfill (WGSL)	
K19		1/11/12		Dwight E. Miller, PE Resume and Project Litigation and Expert Witness Experience	
K20		1/11/12		September 21, 2010 Order Affirming Land Use Commission's Order Adopting the City and County of Planning Commission's Findings of Fact, Conclusions of Law, and Decision and Order dated October 22, 2009 with Modifications in <i>Department of Environmental Services v. Land Use Commission</i> , Civ. No. 09-1-2719-11 (Haw. 1st Cir. Ct.)	
K21		1/11/12		October 19, 2010 Status Report on Reducing and/or Continuing the Use of Waimanalo Gulch Sanitary Landfill (WGSL)	
K22		1/11/12		January 2011 Fiscal & Economic Benefits Analysis Prepared for Ko Olina Resort Operators Association Prepared by CBRE Strategic Consulting	
K23		1/11/12		January 13, 2011 News Release re Landfill Flooding Affects Waters Between Ko Olina and Kahe Power Plant by the Department of Health	
K24		1/11/12		Proposed Revised Ewa Development Plan	
K25		1/11/12		January 18, 2011 Status Report on Reducing and/or Continuing the Use of Waimanalo Gulch Sanitary Landfill (WGSL)	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K26		1/11/12		January 20, 2011 Meeting No. 1 Materials for the Mayor's Advisory Committee on Landfill Site Selection	
K27		1/11/12		January 20, 2011 Meeting No. 1 Group Memory by the Mayor's Advisory Committee on Landfill Site Selection	
K28		1/11/12		January 26, 2011 Letter from Ronald E. Boyle of AECOM Technical Services, Inc. to Waste Management of Hawaii	
K29		1/11/12		March 10, 2011 Meeting No. 3 Group Memory by Mayor's Advisory Committee on Landfill Site Selection	
K30		1/11/12		March 31, 2011 Meeting No. 4 Agenda and Materials for the Mayor's Advisory Committee on Landfill Site Selection	
K31		1/11/12		March 31, 2011 Meeting No. 4 Group Memory by the Mayor's Advisory Committee on Landfill Site Selection	
K32		1/11/12		April 18, 2011 Status Report on Reducing and/or Continuing the Use of Waimanalo Gulch Sanitary Landfill (WGSL)	
K33		1/11/12		May 12, 2011 Meeting No. 5 Group Memory by the Mayor's Advisory Committee on Landfill Site Selection	
K34		1/11/12		June 1, 2011 Letter from Timothy E. Steinberger to Vladimir P. Devine	
K35		1/11/12		July 18, 2011 Status Report on Reducing and/or Continuing the Use of Waimanalo Gulch Sanitary Landfill (WGSL)	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K36		1/11/12		July 25, 2011 Letter from S.B. Teramoto of the Association of Apartment Owners of the Coconut Plantation in the Ko Olina Resort and Marina the Coconut Plantation to David K. Tanoue	
K37		1/11/12		August 9, 2011 Letter from Mario Beekes to David K. Tanoue	
K38		1/11/12		August 8, 2011 Letter from Ken Williams of Ko Olina Community Association to David K. Tanoue	
K39		1/11/12		August 10, 2011 Letter from Duke Hospodar of Resort Operations-LLC to David Tanoue	
K40		1/11/12		August 10, 2011 Letter from Mona Abadir of Honu Group Communications, LLC to David K. Tanoue	
K41		1/11/12		August 10, 2011 Letter from Ralph F. Harris of Ko Olina Fairways – Association of Apartment Owners to David K. Tanoue	
K42		1/11/12		August 11, 2011 Letter from Alan Nakamura of Ko Olina Golf Course to David K. Tanoue	
K43		1/11/12		August 12, 2011 Letter from Jo Jordan of the Hawai'i House of Representatives to the Department of Planning and Permitting	
K44		1/11/12		August 12, 2011 Letter from Joseph Yamaoka of Resort Management Company LLC to David K. Tanoue	
K45		1/11/12		August 13, 2011 Letter from Masaki Nagamine of Watabe Wedding Corporation to David K. Tanoue	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K46		1/11/12		August 13, 2011 Letter from Colleen Hanabusa to David K. Tanoue	
K47		1/11/12		August 17, 2011 Letter from Leland Ribac for George S. Yamamoto of the Makakilo/Kapolei/Honokai Hale Neighborhood Board No. 34 to David K. Tanoue	
K48		1/11/12		December 7, 2007 Settlement Agreement between the Department of Health, Waste Management of Hawaii, Inc., and the City	
K49		1/11/12		December 15, 2010 Letter from Justin Lottig to Lene Ichinotsubo with Attachment	
K50		1/11/12		December 19, 2010 Incident Alert Form	
K51		1/11/12		December 21, 2010 Email from Justin Lottig to Thomas Miyashiro	
K52		1/11/12		December 23, 2010 Investigation Report by the Department of Health, Clean Water Branch	
K53		1/11/12		December 30, 2010 Email from Justin Lottig to Lene Ichinotsubo with Attachments	
K54		1/11/12		January 12, 2011 Email from Joanna Seto to Timothy Steinberger	
K55		1/11/12		January 12, 2011 Email from Timothy Steinberger to Joanna Seto with Attachment	
K56		1/11/12		January 12 and 13, 2011 Station Summary Palehua Hawaii	
K57		1/11/12		2003 and 2004 Articles regarding R.M. Towill	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K58		1/11/12		December 1, 2003 Report of Mayor's Advisory Committee (Blue Ribbon Committee) on Landfill Site Selection without Attachments	
K59		1/11/12		January 31, 2006 Letter from Laurence K. Lau to Paul Burns and Eric Takamura with Enclosures	
K60		1/11/12		April 5, 2006 Letter from Deborah Jordan to Paul Burns and Eric S. Takamura with Enclosure	
K61		1/11/12		December 18, 2006 Article, Firms land contracts despite donation fines, Honolulu Advertiser, by Rick Daysog	
K62		1/11/12		March 12, 2008 Engineering Report for Landfill Expansion: Waimanalo Gulch Landfill, Ewa Beach, Oahu, Hawaii prepared by Geosyntec Consultants without Appendices	
K63		1/11/12		March 2009 Second 6-Month Report Status of Operations Waimanalo Gulch Sanitary Landfill and Actions Taken to Further Reduce Waste Volumes Disposed of at the Landfill	
K64		1/11/12		September 2009 Third 6-Month Report Status of Operations Waimanalo Gulch Sanitary Landfill and Actions Taken to Further Reduce Waste Volumes Disposed of at the Landfill.	
K65		1/11/12		May 12, 2010 Letter from Wilfred K. Nagamine to Joe Whelan	



Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K66		1/11/12		May 13, 2010 Letter from Laurence K. Lau to Joe Whelan and Timothy Steinberger with Enclosures	
K67		1/11/12		September 15, 2010 Article, The super \$6K club part II: Engineers vs. Educators: Abercrombie racks up big bucks as election day draws near, by Alan D. McNarie	
K68		1/11/12		March 31, 2011 City & County of Honolulu Mayor's Advisory Committee on Landfill Site Selection Agenda with Attachments	
K69		1/11/12		April 20, 1987 Findings of Fact, Conclusions of Law and Decision and Order by the Land Use Commission	
K70		1/11/12		October 31, 1989 Findings of Fact, Conclusions of Law and Decision and Order by the Land Use Commission	
K71		1/11/12		July 6, 2007 Planning Division Master Application Form (excerpts)	
K72		1/11/12		July 31, 2009 Meeting of the Planning Commission Transcripts (excerpts)	
K73		1/11/12		January 27, 2011 Article, No Paperwork to Back Up Safety of Medical Waste, by Adrienne LaFrance	
K74		1/11/12		November 21, 2011 Article, City Pays Landfill Operator \$2.6M for Spill Cleanup, by Michael Levine, with Attachment	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K75		1/11/12		January 25, 2011 Administrative Order on Consent for Removal Action by the Environmental Protection Agency and Waste Management of Hawaii, Inc.	
K76		1/11/12		May 25, 2005 Letter from Eric S. Takamura to Anthony Ching	
K77		1/11/12		February 2, 2011 Transcript of Proceedings Before the Land Use Commission	
K78		1/11/12		January 28, 2011 Article, Stormwater Released Into Ocean to Avoid Larger Landfill Catastrophe, by Michael Levine	
K79		1/11/12		November 30, 2011 Article, EPA Orders Additional Safeguards at Waimanalo Gulch Landfill, by Adrienne LaFrance	
K80		1/11/12		January 17, 2011 More Medical Waste Wash On West Shores 5 Days After Landfill Spill, by KITV.com	
K81		1/11/12		April 21, 2006 Transcript of Proceedings Before the Land Use Commission (excerpts)	
K82		1/11/12		September 5, 2008 Letter from Thomas E. Arizumi to Joseph Whelan and Eric Takamura	
K83		1/11/12		March 6, 2008 Transcript of Proceedings Before the Land Use Commission (excerpts)	
K84		1/11/12		March 7, 2008 Transcript of Proceedings Before the Land Use Commission (excerpts)	
K85		1/11/12		March 27, 2003 Hearing Transcript Before the Land Use Commission (excerpts)	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K86		1/11/12		May 12, 2011 Final Criteria List for the Mayor's Advisory Committee on Landfill Site Selection	
K87		1/11/12		June 22, 2004 Letter from Frank J. Doyle to Anthony J.H. Ching	
K88		1/11/12		July 30, 2004 Letter from Frank J. Doyle to Anthony J.H. Ching	
K89		1/11/12		November 30, 2004 Letter from Frank J. Doyle to Anthony J.H. Ching	
K90		1/11/12		March 1, 2006 Letter from Anthony J.H. Ching to Eric S. Takamura	
K91		1/11/12		July 2010 First Annual Report, Status of Actions Taken to Satisfy the State Land Use Commission's Order Dated October 22, 2009 and Status of Operations Waimanalo Gulch Sanitary Landfill	
K92		1/11/12		June 1, 2011 Second Annual Report, Status of Actions Taken to Satisfy the State Land Use Commission's Order Dated October 22, 2009 and Status of Operations Waimanalo Gulch Sanitary Landfill	
K93		1/11/12		September 2008 6-Month Report Status of Operations, Waimanalo Gulch Sanitary Landfill and Actions Taken to Further Reduce Waste Volumes Disposed of at the Landfill (excerpts)	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K94		1/11/12		October 22, 2009 Order Adopting the City & County of Honolulu Planning Commission's Findings of Fact, Conclusions of Law, and Decision and Order with Modifications by the Land Use Commission	
K95		1/11/12		September 23, 2009 Letter from Maeda C. Timson to the Land Use Commission	
K96		1/11/12		August 16, 2011 Draft Regular Meeting Minutes by the Nanakuli-Maili Neighborhood Board No. 36	
K97		1/11/12		May 2, 2011 Letter from Steven Chang to Joseph Whelan and Timothy Steinberger	
K98		1/11/12		December 1, 2011 Article, City Ordered to Improve Monitoring at Landfill, by Gary T. Kubota	
K99		1/11/12		January 2011 Articles from KHON, Hawaii News Now, Star Advertiser re Landfill spill	
K100		1/11/12		July 6, 2009 Declaration of Gary Y. Takeuchi with attached Environmental Impact Statement	
K101		1/11/12		October 25, 2006 Warning letter from Thomas E. Arizumi to Paul Burns & the Honorable Eric Takamura	
K102		1/11/12		Photographs of Ko Olina Lagoons	
K103		1/11/12		Photographs of Ko Olina Clean-Up Efforts (some photographs stamped with dates photographs were taken)	
K104		1/11/12		Photographs of Ko Olina Clean-Up Efforts – Before and After	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K105		1/11/12		Photographs of Debris (photographs stamped with dates photographs were taken)	
K106		1/11/12		Photographs of Empty Beaches (photographs stamped with dates photographs were taken)	
K107		1/11/12		Photographs of Landfill Drainage	
K108		1/11/12		Photographs of Medical Waste (some photographs stamped with dates photographs were taken)	
K109		1/11/12		Photographs of Muddy Waters (photographs stamped with dates photographs were taken)	
K110		1/11/12		Videos of Ko Olina Clean-Up Efforts: K110a: January 20, 2011 Video K110b: January 20, 2011 Video K110c: January 14, 2011 Video K110d: January 14, 2011 Video K110e: January 18, 2011 Video K110f: January 18, 2011 Video K110g: January 20, 2011 Video K110h: January 14, 2011 Video	
K111		1/11/12		Photographs of Trash from the Landfill at Ko Olina (photographs stamped with dates photographs were taken)	
K112		1/11/12		Photographs of Views of the Landfill from Ko Olina (some photographs stamped with dates photographs were taken)	
K113		1/11/12		Photograph of a Warning Sign (photograph stamped with date photograph was taken)	
K114		1/11/12		Photograph of a Wedding (photograph stamped with date photograph was taken)	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K115		1/11/12		August 12, 2011 Letter from Alex Duarte to David K. Tanoue	
K116		1/11/12		August 12, 2011 Letter from Lance Jeffery to David Tanoue	
K117		1/11/12		July 20, 2011 Letter from William and Sara Barnes to David Tanoue	
K118		1/11/12		August 1, 2011 Letter from Harriet Bloom to David Tanoue	
K119		1/11/12		August 15, 2011 Letter from James Handsel to David Tanoue	
K120		1/11/12		August 12, 2011 Email from Greg Nichols to David Tanoue	
K121		1/11/12		August 12, 2011 Letter from Chuck Krause to David Tanoue	
K122		1/11/12		August 11, 2011 Letter from Pieter and Claire van Wingerden to David Tanoue	
K123		1/11/12		November 29, 2011 Letter from Alexis Strauss to Timothy Steinberger and Joseph Whelan	
K124		1/11/12		2011 Filings in <i>Confederated Tribes and Bands of the Yamaka Nation v. United States Dep't of Agriculture</i> , No. CV-10-3050-EFS (E.D. Wash.)	
K125		1/11/12		May 3, 2007 Letter from Thomas E. Arizumi to Paul Burns and the Honorable Eric Takamura	
K126		1/11/12		February 24, 2006, 2006 State of the City Address, by Mufi Hanneman	
K127		1/11/12		Photographs of Stones at Waimanalo Gulch Sanitary Landfill (photographs stamped with dates photographs were taken)	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K128		1/11/12		November 30, 2011 Petition to Close Waimanalo Gulch Landfill and Locate Landfill Operations Outside District 1	
K129		1/11/12		Photographs of Stones at Waimanalo Gulch Sanitary Landfill (photographs stamped with dates photographs were taken)	
K130		1/11/12		October 9, 2007 Book excerpt by Shad Kane, Waimanalo: Navigational Stones	
K131		1/11/12		March 17, 2011 PBSHawaii.org video on Insights, Where Should Garbage Go	
K132		1/11/12		1981 and 1983 Ewa Development Plans (excerpts)	
K133		1/11/12		News Videos Regarding the January 2011 Spill: K133a: January 14, 2011 KHON 2 Video K133b: January 15, 2011 KHON 2 Video K133c: January 22, 2011 KITV 4 Video	
K134		1/11/12		Letters from Ken Williams to Joe Whelan	
K135		1/11/12		April 13, 2008 E-mail String re Report of Debris Flying from City/County Vehicle	
K136		1/11/12		March 20, 2007 Letter from Edward R. Appleby to Todd Apo	
K137		1/11/12		June 14, 2010 Letter from Ken Williams to Joe Whelan re Foul Odors, dust and Noise	
K138		1/11/12		January 24, 2011 Waimanalo Gulch Landfill Spill Investigation Follow-Up	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K139		1/11/12		April 12, 2011 Invoice from Ko Olina Operations, LLC to Ko Olina Community Association	
K140		1/11/12		January 18, 2011 E-mail String re Landfill Runoff into the Ocean	
K141		1/11/12		January 19, 2011 E-mail String re Procedure for Disposal of Medical Waste and Landfill Concerns	
K142		1/11/12		January 20, 2011 Email string re Procedure for Disposal of Medical Waste and Landfill Concerns	
K143		1/11/12		February 2, 2011 Email string re: Landfill issue	
K144		1/11/12		October 2008 Integrated Solid Waste Management Plan Update Prepared for City & County of Honolulu, Hawaii (excerpts)	
K145		1/11/12		April 2000 New Systems Research for Refuse Disposal, prepared by R.M. Towill Corporation (excerpt)	
K146		1/11/12		Waimanalo Gulch Sanitary Landfill Design and Operation Review Technical Memorandum prepared by Parametrix and approved by Dwight Miller	
K147		1/11/12		Site Selection Evaluation Technical Memorandum prepared by Parametrix and approved by Dwight Miller	
K148		1/11/12		Waimanalo Gulch Landfill Alternatives Analysis Technical Memorandum prepared by Parametrix and approved by Dwight Miller	
K149		1/11/12		July 21, 2010 Status Report on Reducing and/or Continuing the Use of Waimanalo Gulch Sanitary Landfill (WGSL)	



Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K150		1/11/12		February 2, 2011 Land Use Commission Status Report on Waimanalo Gulch Sanitary Landfill	
K151		1/11/12		April 2010 AECOM Surface Water Management Plan Waimanalo Gulch Sanitary Landfill Kapolei, O'ahu, Hawaii	
K152		1/11/12		November 8, 2011 Landfill Meeting 7 Group Memory	
K153		1/11/12		November 8, 2011 Landfill Meeting Handout, Landfill Site Selection Study GIS Assessment, Mayor's Advisory Committee on Landfill Site Selection 2011	
K154		1/11/12		Photos from the Department of Health Clean Water Branch (photographs stamped with dates photographs were taken)	
K155		1/11/12		March 14, 2008 Findings of Fact, Conclusions of Law, and Decision and Order Adopting with Modifications, the City and County of Honolulu Planning Commission's Recommendation to Approve Amendment to Special Use Permit by the Land Use Commission	
K156		1/11/12		December 29, 2011 Letter from Ken Williams to Joe Whelan	
K157		1/11/12		August 30, 2011 Letter from Timothy E. Steinberger to Ronald Ho and John Brock with enclosure	
K158		1/11/12		August 18, 2011 Letter from Justin H. Lottig to John Brock and Ronald Ho	
K159		1/11/12		March 11, 2005 Letter from Thomas E. Arizumi to Eric S. Takamura with Enclosures	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K160		1/11/12		September 28, 2011 Landfill Gas Extraction Assessment by Environmental Information Logistics, LLC (excerpt)	
K161		1/11/12		Planning Division Master Application Form with Attachments (excerpt)	
K162		1/11/12		October 2008 Integrated Solid Waste Management Plan Update Prepared for City & County of Honolulu, Hawaii (excerpts)	
K163		1/25/12		October 2008 Final Environmental Impact Statement re Waimanalo Gulch Sanitary Landfill Lateral Expansion by R.M. Towill Corporation (excerpts)	
K164		1/25/12		January 3, 2012 Intervenors' Request for Issuance of a Subpoena Duces Tecum to the Custodian of Records of Waste Management of Hawaii, Inc. with attachments	
K165		1/25/12		January 20, 2012 Waste Management of Hawaii, Inc.'s Response and Objections to Subpoena Duces Tecum	
K166		1/25/12		2005 eWaste (Electronic Waste) printout from the ENV's website	
K167		1/25/12		March 2010 Hawaii Electronic Waste and Television Recycling and Recovery Law, Consumer Information	
K168		1/25/12		September 2011 Final Environmental Impact Statement, In-Vessel Composting Facility, Waialua, Oahu, Hawaii	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K169		1/25/12		May 11, 2011 Article, Council ends discount on tipping fees for recycling, Star Advertiser, by Star-Advertiser Staff	
K170		3/7/12		February 1, 2012 Mayor's Advisory Committee on Landfill Site Selection City and County of Honolulu: Group Memory and Meeting Handouts	
K171		3/7/12		Figure of the Landfill prepared by Parametrix showing Cell E6's planned limits compared to its actual limits and showing damaged areas in Cell E6	
K173		3/7/12		Photograph taken during a site visit to the Landfill on March 6, 2012	
K174		3/7/12		Photograph taken during a site visit to the Landfill on March 6, 2012	
K175		3/7/12		Photograph taken during a site visit to the Landfill on March 6, 2012	
K176		3/7/12		Photograph taken during a site visit to the Landfill on March 6, 2012	
K178		3/7/12		Photograph taken during a site visit to the Landfill on March 6, 2012	
K179		3/7/12		Photograph taken during a site visit to the Landfill on March 6, 2012	
K191		4/4/12		H.B. No. 2249, House of Representatives Twenty-Sixth Legislature, 2012	

Exhibit No.	Offered for Identification	Received in Evidence	Withdrawn	Description	Date R=Returned D=Destroyed Other Comments
K194		4/4/12		2001 Article, Co-combustion of shredder residues and municipal solid waste in a Swedish municipal solid waste incinerator, by L. Aae Redin <i>et al.</i>	
K208		4/4/12		January 22, 2011 Article, After Landfill Spill, Lots of Questions, Few Answers, Honolulu Civil Beat, by Michael Levine & Adrienne LaFrance	
K215		4/4/12		March 16, 2012 Agenda for Mayor's Advisory Committee on Landfill Site Selection Meeting No. 9	
K217		4/4/12		Mayor's Advisory Committee on Landfill Site Selection, Alternative Landfill Sites, Island of O'ahu	
K218		4/4/12		July 19, 2011 Meeting No. 6 Group Memory, Mayor's Advisory Committee on Landfill Site Selection	
K222		4/4/12		February 27, 2012 Testimony of Ian L. Sandison on Behalf of Schnitzer Steel Hawaii Corp. on HB 2249, HD1, Before the Committee on Finance, House, Hawaii State Legislature	
K223		4/4/12		February 2012 Wai'anae Sustainable Communities Plan, Honolulu Department of Planning and Permitting	
K226		4/4/12		March 16, 2012 Article, Landfill Site Panel Wants Distance From Residents, Honolulu Civil Beat, by Michael Levine, with Photograph	
K227		4/4/12		Aloha 'Aina Recycling 2012 Schedule, Schnitzer Steel Hawaii Corporation	

DATED: Honolulu, Hawai'i, April 5, 2012.

CADES SCHUTTE  
A Limited Liability Law Partnership

A handwritten signature in black ink, appearing to read "Calvert G. Chipchase". The signature is written in a cursive style with a long, sweeping tail on the last letter.

---

CALVERT G. CHIPCHASE  
CHRISTOPHER T. GOODIN

Attorneys for Intervenors  
KO OLINA COMMUNITY ASSOCIATION  
and MAILE SHIMABUKURO

---

---

# A BILL FOR AN ACT

RELATING TO LANDFILLS.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:**

1           SECTION 1. Chapter 342H, Hawaii Revised Statutes, is  
2 amended by adding a new section to be appropriately designated  
3 and to read as follows:

4           "§342H-           Alternative daily cover; reporting. (a) Any  
5 alternative daily cover shall be processed to prevent gaps in  
6 the exposed landfill face.

7           (b) The following types of material may be used as  
8 alternative daily cover:

- 9           (1) Ash and cement kiln dust;  
10          (2) Treated auto shredder waste;  
11          (3) Construction and demolition waste;  
12          (4) Compost;  
13          (5) Green material;  
14          (6) Contaminated sediment;  
15          (7) Sludge;  
16          (8) Shredded tires;  
17          (9) Foam products;



- 1       (10) Geosynthetic fabric or panel products, including  
2           blankets; and  
3       (11) Spray-applied cement.

4       The materials enumerated in paragraphs (1) to (8) may be  
5       reported as diversion.

6       (c) Permitted landfills shall track daily the types,  
7       amounts, and origins of alternative daily cover materials used.

8       (d) Permitted landfills shall provide an annual report to  
9       the department and its county counterpart of the information  
10       tracked pursuant to subsection (c)."

11       SECTION 2. Section 342H-1, Hawaii Revised Statutes, is  
12       amended by adding three new definitions to be appropriately  
13       inserted and to read as follows:

14       "Active face" means the working surface of a landfill upon  
15       which solid wastes are deposited during the landfill operation  
16       prior to the placement of cover material.

17       "Alternative daily cover" means cover material, other than  
18       earthen material, placed on the surface of the active face of a  
19       municipal solid waste landfill at the end of each operating day  
20       to control vectors, fires, odors, blowing litter, and  
21       scavenging.



1       "Vector" means any insect or other arthropod, rodent, or  
2 other animal capable of transmitting the causative agents of  
3 human disease or disrupting the normal enjoyment of life by  
4 adversely affecting the public health and well-being."

5       SECTION 3. Section 342G-2, Hawaii Revised Statutes, is  
6 amended to read as follows:

7       "~~§~~**342G-2**~~§~~ **Solid waste management priorities.** (a)  
8 This chapter shall be known and may be cited as the "Hawaii  
9 Integrated Solid Waste Management Act".

10       (b) In implementing this chapter, the department and each  
11 county shall consider the following solid waste management  
12 practices and processing methods in their order of priority:

- 13       (1) Source reduction;  
14       (2) Recycling and bioconversion, including composting; and  
15       (3) Landfilling and incineration.

16 The respective roles of landfilling and incineration shall be  
17 left to each county's discretion.

18       (c) In implementing this chapter, the department and each  
19 county shall consider the minimization of litter and illegal  
20 dumping as a design factor in the development of integrated  
21 solid waste management programs.





1        (d) In implementing this chapter, the department and each  
2        county shall encourage recycling and facilitate the disposal of  
3        residual wastes produced in the recycling process. To the  
4        maximum extent practicable, all state and county agencies shall  
5        give preferential treatment to the disposal of residual  
6        recycling wastes in landfill and incineration disposal  
7        facilities. No state or county agency shall prohibit the  
8        disposal of residual recycling wastes in landfill or  
9        incineration disposal facilities."

10       SECTION 4. Statutory material to be repealed is bracketed  
11       and stricken. New statutory material is underscored.

12       SECTION 5. This Act shall take effect on July 1, 2030.



**Report Title:**

Landfills; Alternative Daily Cover; Residual Recycling Waste

**Description:**

Requires permitted landfills to track and report the types of alternative daily covers used. Places a preference on the disposal of residual recycling waste in landfills and incinerators and requires state and county agencies to accept such disposals. Effective July 1, 2030. (HB2249 HD2)

*The summary description of legislation appearing on this page is for informational purposes only and is not legislation or evidence of legislative intent.*



# Waste Management & Research

<http://wmr.sagepub.com/>

---

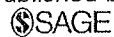
## Co-combustion of shredder residues and municipal solid waste in a Swedish municipal solid waste incinerator

L. Aae Redin, M. Hjelt and S. Marklund  
*Waste Manag Res* 2001 19: 518  
DOI: 10.1177/0734242X0101900607

The online version of this article can be found at:  
<http://wmr.sagepub.com/content/19/6/518>

---

Published by:



<http://www.sagepublications.com>

On behalf of:



International Solid Waste Association

Additional services and information for *Waste Management & Research* can be found at:

Email Alerts: <http://wmr.sagepub.com/cgi/alerts>

Subscriptions: <http://wmr.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

Citations: <http://wmr.sagepub.com/content/19/6/518.refs.html>

>> Version of Record - Dec 1, 2001

What is This?

# Co-combustion of shredder residues and municipal solid waste in a Swedish municipal solid waste incinerator

Incinerating automotive shredder residue (ASR) in order to increase the recovery from end of life vehicles (ELVs) is an attractive option when recycling this material. In this study, incineration combined with energy recovery, was investigated. The incineration experiments, where 20% shredder residue (SR) was burnt with conventional municipal solid waste (MSW), were conducted in a full-scale MSW horizontal grate incinerator. Measurements were made before, during and after the incineration. The results showed some minor increases in the emission levels of raw gases sampled after an electrostatic filter, but almost no significant differences when sampled after a wet scrubber. An increased level of 'non-toxic' metals was detected within the bottom ash. It was concluded that refined SR, in small quantities, is suitable to add to MSW.

L. Aae Redin

M. Hjelt

S. Marklund

Department of Chemistry, Environmental Chemistry,  
Umeå University, SE-901 87 UMEÅ, Sweden

Keywords – (Auto) shredder residue ((A)SR), full-scale incineration, emissions, end-of-life vehicle (ELV), car recycling.

Corresponding author: L. Aae Redin, Swedish Institute for Ecological Sustainability, Box 7980, SE-907 19 UMEÅ; Sweden, e-mail: lisaluso@hotmail.com

Received 8 September 1999, accepted in revised form 10 September 2001.

## Introduction

The aim of this study was to investigate whether there were any differences in the products of the incineration of conventional, pure municipal solid waste (MSW) and those of the same material co-combusted with 20 percent shredder residue (SR). The products examined were flue gas emissions, fly ashes, bottom ashes and process waters. These were analysed for a range of potential by-products before, during and after mixing SR with MSW in a full-scale municipal solid waste incinerator (MSWI).

## Background

In January 1998, legislation was introduced in Sweden making car manufacturers responsible for end-of-life vehicles (ELVs) (SFS 1997:788). The legislation requires that

the recycling goal rises from approximately 75% of the car weight in 1998 to 95 percent by the year 2015. Therefore, new techniques or treatment options must be developed for automotive shredder residue (ASR).

This study was initiated by the Swedish car industry, because of the producers' liability. Due to the relatively low numbers of ELVs in Sweden (maximum 200 000 tonnes per year) and results from a pilot study (Börjeson *et al.* 1998, 2000), it was decided to undertake full-scale studies of shredder residue. The residue was not exclusively material from ELVs, but comprised one third light material from ELVs, one third light material from waste white goods and one third light material from industrial waste other than automotive shredder residue. The material studied is representative of the output from modern Swedish shredder facilities. However, this thesis does contain a discussion of previous studies of pure ASR.

Although there are various options for treating ASR, incineration, combined with energy recovery, is one of the most economic. In Sweden, ELVs account for relatively small amounts of waste, and there are large distances between waste facilities.

#### Recycling of automotive shredder residue

An average car consists of approximately 70–80% metal, 10–20 percent plastic, 5% rubber, 3% glass, plus anti-corrosion substances, paint, noise-reduction material, textiles and fibreboard (Neuendorff 1994). When an end-of-life vehicle is scrapped, it is first delivered to an automobile dismantler, and later shipped to an automotive shredder facility. In the modern shredding processes, metals, comprising about 75–80% of the mixed waste, can be recovered. Of this, the non-ferrous material (NF), comprising about 5%, can be separated out. The remaining 20–25% is referred to as shredder residue or sometimes, less accurately, automotive shredder residue. After shredding, the (A)SR has been, traditionally, deposited in landfills (Peterson 1995).

The (A)SR contains a heterogeneous mixture of both inert and combustible materials, including plastics, such as polypropylene, polyethylene, polyvinyl chloride, acetylene butadiene styrene, polystyrene and polyurethane foam, as well as glass, fabric, wood, rubber, fibres, paper, tar, rust, dirt, sand, gravel, metals, metal oxides, moisture and car fluids (Field & Clark 1991; Jody *et al.* 1992; Jody *et al.* 1996; Lanoir *et al.* 1997; Sendjarevic *et al.* 1997). The metals present tend to be in the form of small pieces or powder, which have not been removed in the shredder processes. About 50 percent of the ASR is combustible (Börjeson *et al.* 2000; Jody *et al.* 1992; Hubble *et al.* 1987; Martin *et al.* 1992).

#### Previously published research

A number of studies of the combustion of ASR have been conducted. However, most of these investigations were undertaken in conditions where it was not possible to sample emissions in flue gases and levels of organic pollutants and metals in bottom ash, fly ash and process water. Most previous studies have been conducted under laboratory conditions. For example, Hubble *et al.* (1987) tested ASR as a fuel for on-site power generation in a rotary kiln test incinerator. They found that the volume of fluff in the ASR was reduced by 80%, and the weight by 55%. Inorganic emissions of nitrogen oxide (NO), carbon

monoxide (CO), hydrocarbons (THC) and sulphur dioxide (SO<sub>2</sub>), were measured, but not organic emissions. However, these authors suggested that polychlorinated dioxins and furans had been produced, since they found chlorine within the shredder fluff.

Ryan *et al.* (1993) simulated open-burning of unadulterated fluff. They measured inorganic flue gases on-line and sampled volatile and semi volatile organics, metal aerosols and particulates. The semi volatile compounds included species such as polyaromatic hydrocarbons, chlorinated aromatics, polychlorinated dibenzodioxins and dibenzofurans. Their results indicated that substantial quantities of air pollutants were emitted.

In contrast, Funcke *et al.* (1998) demonstrated that it was possible to co-combust ASR with MSW, in a MSWI, without producing any significant increase in the emission levels of polychlorinated dibenzodioxins/furans (PCDD/F). In their experiments, the MSW was combined with 20 or 30% ASR. The MSWI, in which the tests are performed, was equipped with an air pollution control system, which comprised a flue gas cooler, a cyclone reactor, the separate addition of activated carbon, a spray absorber, a fabric filter and a catalyst to reduce NO<sub>x</sub>. In these experiments, samples were taken of the raw gas before the cyclone reactor, of the clean gas before the stack and from the boiler ash. The emission levels (1,3–6,5 ng I-TE m<sup>-3</sup> in raw gas) from all the samples were almost the same for the incineration of ASR with MSW and MSW alone.

Zakaria *et al.* (1994) also demonstrated that co-combustion was possible in an MSWI. At the SEMASS Resource Recovery Facility, MSW containing no more than 10 percent ASR is burnt. A mix containing 40 percent ASR, caused problems with bridging and plugging of the conveyer transfer chutes and in the feed system. Problems occurred particularly when higher percentages of ASR were incorporated.

Mark (1998) compared different incineration methods. These included MSW incineration, cement kiln incineration, hazardous waste incineration (HWI), and newer, cost-effective, environmentally sensitive techniques. The results suggested that MSWI of SR was the most appropriate technique. Other advantages of MSWI combined with energy recovery are: that the technique is well known; it is environmentally sound; and it can be performed at a reasonably low cost. In

Sweden there are 22 full-scale incinerators for municipal solid waste, which comply with the requirements for controlled incineration, flue gas cleaning and the ability to handle the residual products.

### Experimental background

A study was conducted to characterise six different sets of shredded waste. These were then combusted in a pilot fluidised bed reactor. The experiment demonstrated that the refined fractions of ASR (i.e. fractions where the metal separation was more efficient than in normal shredder operations, see Fig. 1.) generated energy equating to about 23 MJ kg<sup>-1</sup>. Using shredder residue comprising one third from ELVs, one third from waste white goods and the final third from industrial waste, the heat generated was estimated to be approximately 14 MJ kg<sup>-1</sup> (Börjeson *et al.* 1998, 2000). See Börjeson *et al.* 1998 and 2000 for further details.

Analysis of refined ASR indicated an ash content of 20–27%, which included three fractions each decomposed to a different extent. The mixed SR had an ash content of 52%. This was because the white goods and industrial waste contained larger amounts of metal. Despite the relatively high chlorine content (2.0–2.8%) and levels of PCB (1.1–6.7 µg g<sup>-1</sup>), PCBz, (0.4–2.2 µg g<sup>-1</sup>), PCP, (0.3–1.4 µg g<sup>-1</sup>) and PAH (7.4–11.0 µg g<sup>-1</sup>), it appears that incineration, combined with energy recovery, could be a good way to recycle refined ASR. In SR, the levels were 1.4% chlorine, 12 µg g<sup>-1</sup> PCB, 0.8 µg g<sup>-1</sup> PCBz, 1.1 µg g<sup>-1</sup> PCP and 15 µg g<sup>-1</sup> PAH. For PCDD/F, the amounts in both ASR and SR were below 0.6 ng g<sup>-1</sup>. The amount of bromine, a flame retardant, was very low. The levels of bromine were between 100 and 1000 times lower than the corresponding levels of chlorine. These amounts are even smaller than those usually found in wheat flour. After characterising the material, the co-combustion of 20 percent SR and 80% MSW (Wikström & Marklund 1998b) was assessed in a fluidised bed laboratory reactor (Wikström *et al.* 1998a).

Analysis indicated that there were no significant differences in emission levels between burning ASR and mixed SR. Amounts of organic micro-pollutants, such as polychlorinated dibenzodioxins/furans (PCDD/F), polychlorinated biphenyls (PCBs), polychlorinated benzenes (PCBz), polychlorinated phenols (PCP) and polyaromatic hydrocarbons (PAH), were measured in the flue gases. PCDD/F levels are expressed as

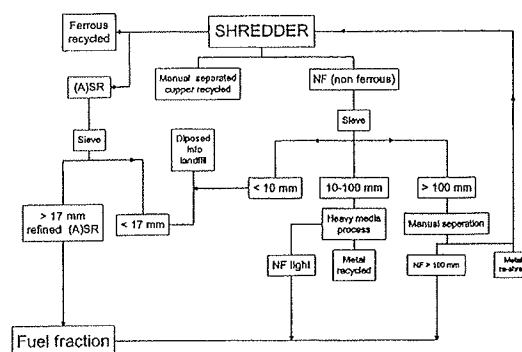


Fig. 1. Schematic figure of the shredding process

International Toxic Equivalents (I-TEQ) (Rappe 1994). Börjeson *et al.* (1998, 2000) described the results and details of these experiments. In fly ash it was not possible to detect any differences between ordinary shredder residue and automotive shredder residue, with respect to organic compounds. Some minor differences in the metal content of the fractions originating from SR and ASR were observed. Higher levels were found in SR.

## Materials and methods

### The shredding process

The shredding process, Fig. 1., is performed in order to recover iron and other metals from end-of-life vehicles, waste white goods and industrial waste. A hammer mill shreds the mixed material into small fragments, of about 1–10 cm. Light fragments (shredder residues), such as fabric, plastic, plastic foam, insulation and paint, are sucked out of the hammer mill and separated in a large cyclone. Heavier fragments, such as iron, steel and other heavy metals, are separated from wood rubber, aluminium and stones in a rotating separation drum using strong airflows. The final fragments to be removed are the non-ferrous materials. After the separation drum, the metals are transported to a vibration conveyor with a magnetic separator, which separates iron and steel from non-ferrous metals.

For the experiments presented here, the shredder residue was sieved in a 17 mm sieve. The larger particles were used in the combustion experiments and the smaller particles were disposed of in landfill. The non-ferrous material is usually separated in a heavy-media flotation process, in which the metals are separated according to their density. Energy rich materials, such as

rubber and wood, can be included in the fuel fraction together with the refined shredder residue. However, they were not used in the full-scale combustion experiments.

#### Materials used: MSW and SR

The shredder residue tested, originated from Stena Bilfragmentering in Halmstad, Sweden. As described above, we used SR, a mix of waste from ELVs, industry and white goods. The MSW used was domestic waste, collected from households around Gothenburg, Sweden. The content of typical MSW in Sweden is detailed in Wikström & Marklund 1998b. The precise content of the MSW was not of importance for these studies, so it was not analysed. In the experiments, conventional municipal solid waste was used as the main fuel and SR was added. The mix was 80% MSW and 20% SR.

#### The incineration plant

This waste incineration facility is the country's largest, generating about 1 100 GWh per year, of which 15% is electricity and 85% is heat. The plant used for the experiments (Renova, previously known as GRAAB) had a capacity of 58 MW and a combustion capacity of 22 tonnes per hour. The combustion took place at 850°C. The plant was the horizontal grate type. The line used was one of three, all of which consisted of a incineration oven, a steam boiler, an electro-filter, a flue gas economiser and a condensing device (see Fig. 2.). Both primary and secondary air was added to achieve complete combustion. Re-circulated air was combined with ammonia to reduce the level of nitrous oxides emitted. After heat recovery, the outgoing condensed water is cleaned by neutralisation, floccing, ammonia

stripping, flotation and sand filtration. Normally, the bottom ash weighs about one-fifth of the weight of the input materials (GRAAB 1996).

Two weeks prior to the "real" co-combustion experiments and sampling of flue gases, SR was co-combusted with conventional MSW at the full-scale MSWI in Sävenäs, Gothenburg, in order to check the operational conditions. During this test, key inorganic flue gas parameters, including water (H<sub>2</sub>O), carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>), ammonia (NH<sub>3</sub>), hydrogen chloride (HCl) and particle content were measured on-line, just before the stack. The addition of SR did not affect handling techniques or the flue gas control. Since the SR had a slightly higher energy content than MSW, it was only possible to incinerate at about 95% of the plant capacity.

#### Sampling of flue gases, ashes and process water

The experiments took place over three days. During the first day, conventional MSW was incinerated. During the second day, 20% refined SR was co-combusted with 80% MSW. On the third day, conventional MSW was once again incinerated, in order to determine whether there were any residual effects.

Flue gases were sampled, simultaneously, at two parallel points. Sampling locations (Fig. 2.) were selected to highlight any differences in flue gas content between the two waste fuels:

- after the electrostatic filter (Point 1, flue gas temperature 250°C); and
- after the wet scrubber, but before the final cleaning (Point 2, flue gas temperature 60°C).

After passing through all the cleaning systems, differences in the combustion products would not have been detectable. Automatic on-line measurements of inorganic parameters were taken after flue gas cleaning, just before the stack. Manual measurements of particles and HCl were made at Point 1.

Samples for the analysis of organic micro-pollutants (PCDD/F, PCB, PCBz, PCP, PAH) in the flue gases were collected over two-hour periods, and samples for particulate and HCl evaluation were collected over one-hour periods. On days 1 and 3, two samples for determining organics and one for particles and HCl were collected. On day 2, three samples for organics and one for particles and HCl were collected. Fly ash, bottom ash

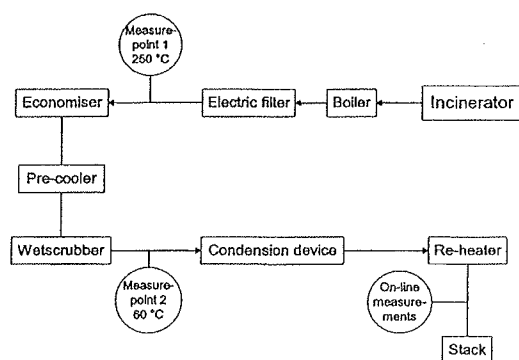


Fig. 2. Schematic figure of the incineration plant

and process water were sampled each day for the determination of organic pollutants and metals.

#### Sampling and clean up methods

The sampling of flue gases, the clean up process and the GC-MS analyses were performed according to Marklund *et al.* (1992). They included a Soxhlet Dean Stark Extraction with toluene. Before the extraction, 13C-internal standards of PCDD/F, PCB, PCBz, PCP and PAH isomers were added. Additional sample preparation varied according to the compounds to be analysed. Samples for PCDD, PCDF and PCB evaluations were passed through three columns: a silica column, a super alumina oxide column and an activated charcoal column. Samples for PCBz and PAH analysis were purified by passing them through a deactivated silica column. After acidification and hexane extraction, the silica column eluates were also used for PCP evaluation. Following preparation, but prior to analysis by GC-MS, recovery standards were added to the samples. PCDD/Fs were measured using HRGC (HP 5890, with a 2330 column) /HRMS (VG 11-250J). Other compounds were measured using HRGC (GC800 with a DB5 column) /LRMS (Fisons MD800).

Particles were sampled isokinetically on a glass fibre filter. The sampling point was after the electrostatic filter, in the flue gases, at Point 1. HCl was collected at the same location as the particles, in a 0.24 mmol HCO<sub>3</sub><sup>-</sup>/CO<sub>3</sub><sup>2-</sup>-solution. The particles were weighed and the HCl (Cl<sup>-</sup>) was measured using a Dionex DX-100 Ion Chromatograph. Other inorganic constituents were measured on-line in the flue gases, just before a muffler tall pipe in the stack.

Samples from the fly ash, the bottom ash and the process water were analysed for organic pollutants and metals. The organic analyses were performed as described above. After drying and dissolving in lithium borate, according to the ASTM D3682 method, the metals and metal oxides were analysed by ICP/AES or

ICP/MS. Leaching tests were also performed on the bottom ash: HNO<sub>3</sub>-extraction for either 2 or 10 hours, was followed by ICP/AES or ICP/MS analysis.

## Results and discussion

### Inorganic compounds and particles in flue gases

On-line measurement of flue gases over the three days indicated that burning SR did not cause any disturbance to the process. The only waste products, measured on-line, that increased on the second day were particles. Just before the stack, the amount increased from 1 mg Nm<sup>-3</sup> to 4 mg Nm<sup>-3</sup>. This is within the range of normal variation in particulate emissions. The maximum permitted level is 20 mg. When the HCl and particles were measured manually at Point 2, the results differed from the on-line measurements (table 1). The difference between the on-line measurements and the manual measurements could be explained by the different locations of the sampling points.

Table 2. Organic emissions in flue gases at measure points 1 and 2 during the three days

		I-TEQ ng Nm <sup>-3</sup>	PCB ng Nm <sup>-3</sup>	PCBz µg Nm <sup>-3</sup>	PCP µg Nm <sup>-3</sup>	PAH µg Nm <sup>-3</sup>
Day 1	Point 1	3.3	35	7.5	6.0	1.5
	Point 1	3.1	94	4.8	5.1	79
	Point 2	1.7	6	8.9	4.0	0.3
	Point 2	3.2	4	15.3	6.6	8.1
Day 2	Point 1	4.9	<140	6.6	na	218
	Point 1	9.0	246	9.6	9.7	4.3
	Point 1	10.9	328	8.5	6.8	4.1
	Point 2	5.1	10	7.1	6.7	1.7
	Point 2	7.0	23	10.8	6.9	6.9
	Point 2	6.7	26	9.9	7.6	7.1
Day 3	Point 1	2.9	79	12.7	4.6	13
	Point 1	4.3	134	7.5	5.0	3.8
	Point 2	2.8	<10	9.1	3.6	10.4
	Point 2	3.8	<10	10.9	4.0	8.2

na=not analysed

I-TEQ=International Toxic Equivalents

Table 1. On-line and manual inorganic measurements at the incineration experiments

	HCl mg Nm <sup>-3</sup>	Manual HCl mg Nm <sup>-3</sup>	Particles mg Nm <sup>-3</sup>	Manual Particles mg Nm <sup>-3</sup>	SO <sub>2</sub> mg Nm <sup>-3</sup>	CO ppm	CO <sub>2</sub> %
Day 1	6	32	1	109	230	52	12
Day 2	6	85	4	104	193	42	11.8
Day 3	5	66	1	36	199	40	11



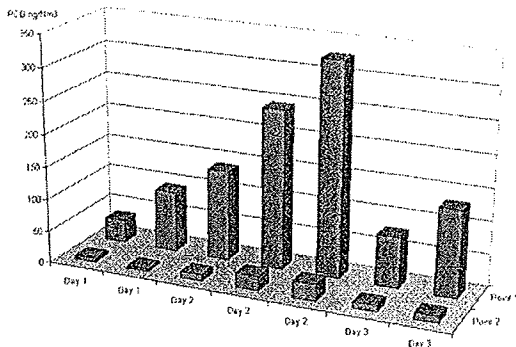


Fig. 3. PCBs in flue gases

#### Organic compounds in flue gases

The results of flue gas emission analysis indicated there were increases in PCB and PCDD/F levels in the flue gases at Point 1 when incinerating refined SR mixed with MSW. In the flue gases at Point 2, only the levels of PCBs increased (Table 2 and Fig. 3.). This demonstrates that the incineration process does not fully destroy the PCBs in the SR. However, most of the PCBs are caught in the wet scrubber, and the total amount of PCB in the emissions is lower than in the fuel.

#### Metals and organic pollutants in ashes and process water

The ashes were also analysed for metals, especially those that can cause environmental problems. The organic micro-pollutants PCDD/F, PCB, PCBz, PCP and PAH were examined in both ash and process water (Tables 3 and 4).

In the ashes, especially the bottom ash, the metal levels increased on the second day. Metals such as Fe, Cu, Zn, Ni and Pb increased about 2–3-fold when SR was co-combusted with MSW. However, levels of more

Table 3. Metals in ashes during the three incineration days

Element	Day	Bottom ash mg kg <sup>-1</sup>	Fly ash mg kg <sup>-1</sup>
Copper	1	1,500	1,500
	2	7,940	3,900
	3	408	1,620
Lead	1	408	7,930
	2	1,100	10,700
	3	1,320	4,510
Zinc	1	3,020	28,800
	2	7,250	62,000
	3	3,410	24,100
Nickel	1	94	106
	2	213	183
	3	79	137
Cadmium	1	3.4	268
	2	5.8	347
	3	2.8	129
Mercury	1	<0.194	<0.19
	2	1.22	0.21
	3	0.47	1.3
Iron*		%	%
	1	10.4	33.8
	2	4.14	3.6
3	13.9	4.6	

\*As iron oxide, Fe<sub>2</sub>O<sub>3</sub>

environmentally damaging metals, including Cd and Hg, did not increase significantly on the second day. Of the organic micro-pollutants in the ashes, only the level of PCB in the bottom ash increased significantly (up to 4–5 times) on the second day. Residual effects were recorded

Table 4. Organic compounds in ashes and process water

		I-TEQ ng g <sup>-1</sup> (ng L <sup>-1</sup> )	PCB ng g <sup>-1</sup> (ng L <sup>-1</sup> )	PCBz µg g <sup>-1</sup> (ng L <sup>-1</sup> )	PCP µg g <sup>-1</sup> (ng L <sup>-1</sup> )	PAH µg g <sup>-1</sup> (ng L <sup>-1</sup> )
Fly ash	Day 1	3.8	6.9-10.6	0.55	0.96	3.7
	Day 2	2.0	7.4-11.6	0.4	0.35	1.6
	Day 3	1.3	11.0	0.24	0.06	1.7
Bottom ash	Day 1	<0.01	90	0.024	0.004	0.6
	Day 2	0.011	435	0.023	0.19	5.6
	Day 3	<0.01	233	0.024	0.012	2.2
Process water	Day 1	30.6	68	2,030	29	19,800
	Day 2	13.7	38	460	8.3	2,430
	Day 3	18.0	33	1,300	11.7	8,780

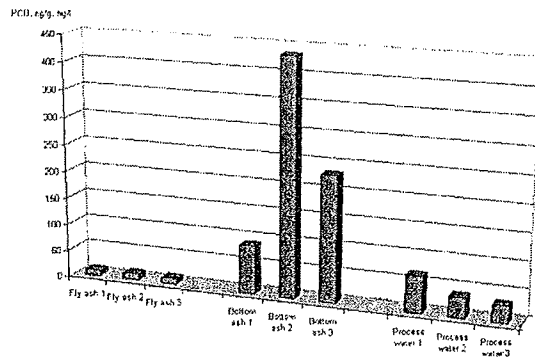


Fig. 4. PCBs in fly ashes, bottom ashes and process water

in the bottom ash on the third day. When analysing the bottom ash, some unburned plastic was visible in the ash, which may explain some of the increased levels of PCB. In addition, there was a minor residual amount of PCB in the fly ash on the third day. There was no significant increase in other organic micro-pollutants in the ashes on the third day compared with the first.

In process water, there were no differences between the first and the second days. Fig. 4. shows the PCB-levels in the ashes and the process water and table 4 contains the results of the micro-pollutant analysis. A leaching test, performed on the bottom ash, revealed no significant variation between the days.

## Conclusions

The results of this study demonstrate the potential for incineration, combined with energy recovery, for (A)SR in Swedish, full-scale MSWI. The results also show that 20% refined SR can be effectively added to MSW. Because SR is heterogeneous and complex, high proportions should not be mixed with MSW. This avoids the emission of large amounts of potentially harmful by-products.

In flue gases, sampled after electrostatic filtration, a minor increase in emissions was detected, but after passing through a wet scrubber, the difference was very small. The emissions measured at the second sampling point indicate that, after the full cleaning process, the gases were unchanged throughout the experiments. The

most critical of the measured organic micro-pollutants in flue gases were PCBs. These increased 3–5-fold in the flue gases at both the first and second sampling points on the second day. In the bottom ash, a 5-fold increase in PCB was noted when SR was burnt with MSW. However, this level of PCB is much lower than in the fuel.

The amount of various metals in the bottom ash also increased on the second day, from 18% to 23 % of input weight. This is probably the most significant problem. To solve it, shredder plants would have to develop refining processes targeted specifically at this type of material. In this experiment the only pre-treatment was to sieve the SR through a 17 mm mesh, to reduce the amount of inert material in the fuel fraction. There are probably other techniques that could improve the refining process.

The cost of SR incineration with energy recovery in Sweden will vary between municipalities, according to charges levied, at the MSWIs, for handling this type of waste

## Potential for energy recovery in Sweden – a future vision?

As mentioned in the introduction, the refined fraction of ASR, with a minor NF component, can generate energy totalling 17–26 MJ kg<sup>-1</sup> (mean 23 MJ kg<sup>-1</sup>) (Börjeson *et al.* 1998). For mixed SR, which is normally shredded, the energy values vary between 13 and 16 MJ kg<sup>-1</sup>. The total amount of ASR produced in Sweden is around 30–45 000 tonnes year<sup>-1</sup>. Refined ASR (i.e. roughly equivalent to the fuel fraction described above) amounts to about 20 000 tonnes year<sup>-1</sup>. In Sweden, the total mixed SR amounts to about 100 000 tonnes equivalent to about 50 000 tonnes of refined mixed SR.

Assuming that incinerating the ASR is realistic, since the legislation for producer responsibility was introduced, then ASR could produce 20 000 x 23 GJ = 460 000 GJ year<sup>-1</sup> (about 130 GWh). If all of the refined SR was incinerated, the energy in this material would be approximately 50 000 x 15 = 750 000 GJ year<sup>-1</sup> (about 210 GWh). The total amount of energy used in Sweden is about 400 TWh, of which one tenth originates from MSWIs. Excluding the costs of transporting material, rough calculations suggest that ASR could contribute 0.03%, and SR 0.05%, of total Swedish energy requirements.

## References

- Börjeson, L., Marklund, S. & Johansson, S. (1998) The vehicle recovered to fuel – a recycling study concerning residual products from shredding. *Report from REFORSK*, no. FoU 150, ISSN 0284-9968. Published by the foundation REFORSK, Ferens väg 9, SE-211 42 Malmö, Sweden.
- Börjeson, L., Löfvenius, G., Hjelt, M., Johansson, S. & Marklund, S. (2000) Characterisation of automotive shredder residue from two shredding facilities with different refining processes in Sweden. *Waste Management and Research*, 49, 1-14.
- Field, F.R. & Clark, J.P. (1991) The recycling dilemma for advanced materials use: automobile materials substitution. *Materials and Society*, 15, no.-2, 109-147.
- Funcke, W., Mayer, J., Dresch, H. & Mark, F.E. (1998) PCDD/F emission from a municipal solid waste incinerator during co-combustion of automotive shredder residues. *Organohalogen compounds*, 36, 171-174.
- GRAAB. (1996) Sävenäs Avfallskraftvärmeverk (Sävenäs municipal solid waste incinerator). *Pamphlet describing the combined power and heating plant at Sävenäs, Gothenburg, Sweden*. Published by the Public Cleansing Company in Gothenburg, Box 156, SE-401 22 Gothenburg, Sweden
- Hubble, W.S., Most, I.G. & Wolman, M.R. (1987) Investigation of the energy value of automobile shredder residue. *US Department of Energy Report DOE/ID-12551*.
- Jody, B.J., Daniels, E.J., Bonsignore, P.V. & Shoemaker, E.L. (1992) Chemical and mechanical recycling of shredder fluff. *Prepared for presentation and proceedings of Pollution Prevention Conference for Iron & Steel Industry, Chicago, Illinois, October 14-15, 1992*.
- Jody, B.J., Daniels, E.J. & Teotia, A.P.S. (1996) Recycling of polymers from automobile shredder residue. *Convers. Utilisation of Waste Materials*, 1996, 77-104.
- Lanoir, D., Trouvé, G., Delfosse, L., Froelich, D., & Kassamaly, A. (1997) Physical and chemical characterization of automotive shredder residues. *Waste Management and Research*, 15, 267-276.
- Mark, F.E. (1998) Thermal recovery of (A)SR – a way forward to ELVs management. *BHM, 143.Jg. Heft 1*, 28-35. Berg-und Hüttenmännische Monatshefte (BHM) is published in Vienna, Austria in 1998.
- Marklund, S., Söderström, G., Ljung, K., Rappe, C., Kraft, M. & Hagenmaier, H. (1992) Parallel sampling for dioxins using various sampling techniques at a Swedish municipal solid waste incinerator. *Waste Management and Research*, 10, 21-36.
- Martin, R., Riess, R., & Vosteen, B. (1992) Thermal treatment of automotive shredder fluff. *Proceeding from Davos recycle'92, International Forum and Exposition, 7-10 April 1992*. Published by Bayer AG.
- Neuendorff, R. (1994) Optimal car recycling during the next ten years – seen from the metal recycles point of view. *Report from Technical Support and Devices AB, Oskarshamn, Sweden*.
- Peterson, M. (1995) Magnet, virvelströmmar och bad. (Magnet, eddy currents and bath) *Recycling no.2*, 12-13.
- Rappe, C. (1994) Dioxins, patterns and source identification. *Fresenius journal of analytical chemistry*, 348, 63-75.
- Ryan, J.V. & Lutes, C.C. (1993) Characterization of emissions from simulated open-burning of non-metallic automobile shredder residue. EPA-report PB93-172914. Published by the Environmental Protection Agency, USA.
- Sendjarevic, V., Pokorski, B., Klempner, D. & Frisch, K.C. (1997) Recent developments in shredder downstream separation processes and recycling options for automotive shredder residue. University of Detroit Mercy, USA. *Report no. 970663 is published by the Society of Automotive Engineers Incorporation, USA*.
- SFS. (1997:788) *Legislation in the Swedish statute book*, number 788, 1997.
- Wikström, E., Andersson, P. & Marklund, S. (1998a) Design of a laboratory scale fluidized bed reactor. *Review of Scientific Instruments*, 69, 1850-1859.
- Wikström, E. & Marklund, S. (1998b) Combustion of an artificial municipal solid waste in a laboratory fluidised bed reactor. *Waste Management and Research*, 16, 342-350.
- Zakaria, J., McBath, P. & Sutin, G. (1994) Auto shredder residue (ASR) experience at the SEMASS resource recovery facility. *Proceeding at the 87th Annual Meeting – Air Waste Management Association, June 19-24, 1994. Solid Waste Management*, 12, 29pp.

Register Now! | Sign-in | Subscribe

Search Civil Beat... Search

Best Overall News Site  
2010 Excellence in Journalism Award

Wednesday, March 14th, 2012

# HONOLULU CIVIL BEAT

Like 4k Follow iPhone/iPad

Today Live Elections Honolulu Hawaii Education Land Money DC808 Breaking Sports Business Entertainment Archive Topics

30 Tweet 16 Like Send

## After Landfill Spill, Lots of Questions, Few Answers

By Michael Levine and Adrienne LaFrance | 01/22/2011

It's now been a little more than a week since the operators of Waimanalo Gulch Sanitary Landfill, facing rising waters and pounding rain, sent a torrent of stormwater containing garbage and medical waste out into the ocean off of Ko Olina on Oahu's Leeward Coast.



Michael Levine/Civil Beat

The episode — which resulted in syringes and vials of blood and urine washing onshore, closing some beaches — raises one obvious question: How could this happen?

One answer is the weather. The worst three hours of last week's rain were in excess of a 200-year storm event for the rain gauge closest to Waimanalo Gulch. But the weather isn't enough reason to give landfill operators a pass.

"What happened should not have happened," Health Department Deputy Director Gary Gill told the Hawaii Senate's Ways and Means Committee this week. "The rains flooded the landfill — all of that water is supposed to be diverted around the landfill ... The landfill has been expanded a number of times and the water diversion system has not kept up with expansions."

Permit conditions required landfill operators to have geomembrane sheets and pumps on hand during construction of the diversion channel. It's unclear whether those preventive measures were used or ineffective.

Health officials said the medical waste that ended up in the ocean didn't pose any serious health threat. Yet one of the strange aspects of this story is that no single agency can claim responsibility for oversight of medical waste. In fact, three local entities each point to the other as responsible.

If there was wrongdoing, it remains to be seen whether there will be any penalties.

The federal Environmental Protection Agency, which sent staffers to Honolulu to help coordinate the clean-up, is still focused on the aftermath.

"If there's going to be any enforcement, we don't know yet," EPA regional spokesman Dean Higuchi told Civil Beat. "The concern right now is to make sure the clean-up of any waste on the beaches is done, that the landfill has capacity to handle any rain that appears in the future. To make sure it doesn't happen again: That's the bottom line."

The general manager of Waste Management, the company that operates Waimanalo Gulch and other landfills across the country, has declined to answer Civil Beat's questions thus far. A spokesman said the company is focusing on clean-up and re-opening the landfill as bulky items pile up on sidewalks islandwide.

Waimanalo Gulch landfill remains closed. City officials say it won't open until Thursday at the earliest. Two Honolulu City Council committees are hosting a joint hearing Monday morning to address the situation. Until then, here's what we know so far — and what we're waiting to find out.

### What, Exactly, Was Discharged?

**What we know:** The Department of Health's Clean Water Branch — acting on behalf of the U.S. EPA and following the terms of the Clean Water Act — issued a National Pollutant Discharge Elimination System permit to the city's Department of Environmental Services in August 2010.<sup>1</sup>

The permit sets limits on the concentrations of more than a dozen chemicals that can be released in a discharge of stormwater — for example, 10 milligrams of ammonia per liter.

Read the full National Pollutant Discharge Elimination System permit [here](#) [pdf].

**What we don't know:** The full content of the discharge is unclear. The Clean Water Branch says it has tested for bacteria at ocean sites, and that samples of stormwater taken at the landfill before the discharge were turned over

CHANGE BEGINS WITH A QUESTION™

What questions do you have about Hawaii? Ask them here!

About the Authors

Michael Levine  
Honolulu Reporter-Host



Articles / Michael Levine  
Topics / Michael Levine  
Discussions / Michael Levine

Adrienne LaFrance  
Washington, D.C. Reporter-Host



Articles / Adrienne LaFrance  
Topics / Adrienne LaFrance  
Discussions / Adrienne LaFrance

Media



Related Content

Articles

Controversial Landfill Expansion To Receive Trash Soon

Primary Topic Pages

- Tim Steinberger
- Solid Waste In Hawaii
- Impacts Of Land Use In Hawaii
- Hawaii State Government
- City and County of Honolulu Government

Discussions

Discussion: Solid Waste

EXHIBIT K208

to the Department of Health. What would happen if the discharge included more chemicals than permitted and contributed to a violation of applicable water quality standards?

### Why Is The Public Being Told Not To Worry About Infectious Medical Waste?

**What we know:** Infectious waste isn't allowed in the landfill in the first place. State law requires all medical waste to be sterilized before it reaches Waimanalo Gulch.

"In accordance with state solid waste regulations, the landfill should not be accepting infectious waste," Lene Ichinotsubo, chief of the Health Department's Solid and Hazardous Waste Branch, wrote in an e-mail. "Generators of infectious waste, such as hospitals and clinics, are required to treat infectious waste prior to taking them to the landfill."

A spokesman for the company that operates the landfill, Waste Management, said the company reviews federally mandated classification of medical waste provided by the hospitals that generate the waste to make sure it meets requirements.

"Federal regulations require generators of medical waste to characterize their waste and certify that it has been properly treated prior to disposal," Keith DeMello, Waste Management's spokesman, wrote in an e-mail. "The generators' waste profiles are then reviewed and approved by WM."

Honolulu Managing Director Doug Chin said Waste Management works with a company called [Hawaii Bio-Waste Systems, Inc.](#), which treats medical waste at high temperatures and high pressure to sanitize it.

The process is called autoclaving, and Hawaii Bio-Waste provides it for hospitals and medical centers like Queens Medical Center, Kaiser Permanente, Tripler Army Medical Center, Kapiolani Women's and Children, according to the company's website.

"Medical waste goes through three things," said Markus Owens, spokesman for the city's Environmental Services Department. "The bill of lading, which is kind of like a waste characterization of saying what's in there, non-hazardous manifest and a certificate of sterilization."

Health Department spokeswoman Janice Okubo said the landfill provided proof the medical waste went through the appropriate process.

"We asked the landfill for a chain of custody type of documentation so we could verify that the materials were sterilized before they were accepted," Okubo told Civil Beat. "They do have to document where they come from."

As such, officials report the threat the vials of blood pose is comparable to many other kinds of litter.

"There's no question that the debris is gross," Chin told Civil Beat. "It's not something that anyone would want to encounter, and yet, at no time has the Department of Health — or the EPA for that matter — ever determined that the medical waste was anything other than debris."

**What we don't know:** Civil Beat is still working on tracking down the documents that officials say verify the medical waste is noninfectious.

Waste Management's general manager, Joe Whelan, has declined Civil Beat's repeated requests for interviews this week. Officials at Hawaiian Bio-Waste Systems have also declined to respond to voicemails and other interview requests.

### When It Comes To Medical Waste, Who Is In Charge?

**What we know:** City officials, State Department of Health officials and the Waste Management spokesman all agree that medical waste must be treated before it reaches the landfill. But there appears to be confusion about who is in charge of oversight. And it appears that the government relies on the good word of those it's supposed to regulate that what they're putting into a landfill is what they say it is.

"We can only go with what the Department of Health tells us," said Owens, spokesman for the city's Environmental Services Department, when asked about oversight. "They're the ones who know what has to be in place for the permit, to accept this type of waste."

But State Department of Health officials explain that while they grant permits, they don't track compliance.

"We don't screen it because the state does not operate the landfill," said Ichinotsubo, chief of the Health Department's Solid and Hazardous Waste Branch. "We're the regulators, the city and the landfill are the operators."

Meantime, the landfill operator refers questions about oversight back to the state.

"Regarding the documentation of medical waste, I do need to refer you back to the DOH," DeMello, Waste Management's spokesman, wrote in an e-mail.

Asked about this merry-go-round of accountability, Honolulu Managing Director Chin said he believes there is a layered approach to oversight.

#### Recommended Content



Create an account or [log in](#) to see what your friends are doing.



**Tulsi Gabbard's Leftward Journey**

16 people recommend this



**Progressive Catholics Are Not Hypocrites**

60 people recommend this



**Hawaii's Past Governors Say No to Hoopili**

20 people recommend this



**A Molokai Resident's Respectful Request Regarding Recent Protests**

53 people recommend this

Facebook social plugin

Follow Civil Beat



"Verifying and confirming that the waste is in fact sterilized is very, very important," Chin told Civil Beat. "That's what the Department of Health is relying on when they're permitting the landfill to take the waste. It's what we're relying on for our understanding that the debris discharged out to the ocean and washing up on the beaches is sanitized. What I'm understanding is the certification they go through is not just a piece of paper."

**What we don't know:** Who is conducting inspections to verify medical waste is properly handled? State law requires the landfill to submit a report on medical waste every year in July, but multiple requests to officials with the city, state and Waste Management for that document were unsuccessful.

### Was Rain Just Bad Luck?

**What we know:** The city is supposed to update its stormwater safety plan before changing the landfill.

The National Pollutant Discharge Elimination System permit requires that the city revise its Storm Water Pollution Control Plan for all proposed modifications to the facility — including the expansion that was approved by the Land Use Commission in October 2009.

The most recent version of the Storm Water Pollution Control Plan was dated January 2009 but was received in June 2010, according to Joanna Seto, supervisor of the Clean Water Branch's Engineering Section. That document does not include the off-site run-on bypass or landfill expansion best management practices required by the National Pollutant Discharge Elimination System permit, but a subsequent Surface Water Management Plan was received by the Health Department in August 2010.

Both plans reference management practices designed to handle a 25-year, 24-hour storm event.

Kevin Kodama, a senior hydrologist with the National Weather Service's Honolulu Forecast Office, told Civil Beat the rain gauge closest to Waimanalo Gulch measured 10.3 inches of precipitation between approximately 6 p.m. on Jan. 12 and 6 p.m. the following day. That total exceeded the 25-year, 24-hour rain event for that gauge, according to a [table of precipitation frequency estimates](#), but falls short of a 50-year, 24-hour event.

Rain was more intense for some shorter periods. The worst six-hour peak of 7.22 inches was in excess of a 100-year event and the worst three-hour stretch of 6.23 inches was in excess of a 200-year event, Kodama said.

"They got hit pretty good," he said.

The Palehua Fire Weather Station gauge in question received more rain during the storm than any other gauge on the island. Owned by the state Department of Land and Natural Resources Division of Forestry and Wildlife, the gauge is located about two miles mauka (north-northeast) of the landfill. While not all of the rainfall at that location necessarily ended up in Waimanalo Gulch, the data indicates that region of the island was hit particularly hard by the storm.

Read the Storm Water Pollution Control Plan [here](#) [pdf] and the full Surface Water Management Plan [here](#) [pdf].

### Did the Landfill Adhere to Permit Safety Requirements?

**What we know:** In addition to the permits and plans administered by the Department of Health's Clean Water Branch, another division of the department has a role in the operation of all landfills: the Solid and Hazardous Waste Branch.

After the expansion was approved in late 2009, that branch in June 2010 approved an application to modify and renew the landfill's Solid Waste Management Permit. Among the permit conditions is an entire section dedicated to managing surface water.

Requirements included a western bypass channel and a "drainage system of pipe and swale conveyances running along the eastern side of the landfill." During construction of those systems, when there is no means to convey water around the landfill, the landfill operators were instructed to pre-stage six-millimeter or thicker geomembrane sheets, pumps and other equipment to control and direct surface water.

Before starting construction on the new landfill cells, operators were instructed to determine the amount of geomembrane sheeting and pumps necessary to do the job, and told to update drainage system drawings to accommodate runoff from the new cells as they were being constructed.

Read the full Solid Waste Management Permit [here](#) [pdf].<sup>2</sup>

**What we don't know:** There are numerous questions beyond simple compliance with the permit conditions. Here are the questions Civil Beat asked DeMello, the Waste Management spokesman:

- Does Waste Management believe it complied with all permits and regulations?
- When did Waste Management start construction on the diversion channel? Was there a lag between the issuance of the land use permit in October 2009 and work on the diversion channel? If so, why?
- Was the goal always to have the channel construction completed around the end of January, or did Waste Management originally target a completion date before the start of the rainy season? If the schedule changed, why?

**EXHIBIT K208**

- Were there previous diversion channels that were rendered obsolete by the recent expansion, or was this the first diversion channel of its kind at the facility?
- Will additional channels be necessary if the landfill's life is extended beyond July 2012?
- Are stormwater runoff issues compounded as the landfill nears capacity?

### Do Other Cities Share Honolulu's Approach?

**What we know:** To begin to understand how Honolulu compares to other municipalities, we looked to another oceanfront county: San Diego. Turns out, the California border town is a pioneer when it comes to waste management.

As in Hawaii, California law requires medical waste to be treated before it goes in a landfill, and requires certain kinds of medical waste — like body parts — to be incinerated.

"It could be a dental office, a veterinary office, a medical office, a large hospital ... If you generate medical waste, you have to basically render it safe before it ends up in a landfill," said Maryam Sedghi, supervising environmental health specialist for San Diego County's Hazardous Materials Division. "Other waste we have, like let's say pathology waste, in that particular case, you can't autoclave that and throw it in a landfill, you pretty much have to send that to an incinerator."

But many of the similarities between how Honolulu and San Diego manage disposal of medical waste end there. Because California is such a big state, some county-level agencies obtain the authority — through what's called the Certified Unified Program Agencies — to oversee and enforce some laws.

For San Diego, it means Sedghi and her colleagues closely track medical waste on its path from hospitals to landfills. In other words: it's clear who's in charge. There's no self regulation, the way there is in Hawaii.

"Our division handles all of the hazardous materials, hazardous waste, permitting, and we also go out and look at the hospitals, medical offices," Sedghi told Civil Beat. "We have a pretty rigorous program. Our inspectors go out and inspect every medical facility, every hospital, you name it. Anyone who generates any biohazardous material or medical waste, we're there. We don't accept any kind of self certifications. We ask the doctors to obtain a permit with us, and we inspect them on a regular basis."

In other California counties, Sedghi said, the state is responsible for oversight. She said the approach in San Diego is better because it doesn't split the authority between a number of agencies, or put the onus on the state, which has a much broader scope of health-related responsibilities.

"When you have a big authorizing agency, it's just not easy to ensure the laws and the regulations are followed," Sedghi said. "For us, as a local agency, it makes a lot of sense. You have a rapport with the businesses, you're already there inspecting them for other reasons, you know your own county and you know what the policies are. We definitely have a very clear division of authority and maybe that's something that is a helpful thing when you know exactly what you're supposed to do."

### What Does The Spill Mean for the Future of Waimanalo Gulch?

**What we know:** The Hawaii Land Use Commission has a say in the use of all agricultural lands larger than 15 acres — and the Waimanalo Gulch Sanitary Landfill qualifies. The commission granted special use permits in 1987, 1989, 2003 and 2009, giving the city permission to operate the landfill.

The special use permit issued in October 2009, like its predecessors, requires the city to "obtain all necessary approvals from the State Department of Health, Department of Transportation, Commission on Water Resource Management and Board of Water Supply for all onsite and offsite improvements involving access, storm draining, leachate control, water, well construction and wastewater disposal." In all, there are 16 permit conditions.

The Land Use Commission could hold hearings about last week's stormwater discharge and ask questions of landfill operators. City Council member Tulsi Gabbard Tamayo has already scheduled one such hearing. Waste Management and the city's Department of Environmental Services will presumably be in attendance Monday.

While it's conceivably possible for the Land Use Commission to revoke a special use permit for failure to comply with conditions, doing so would leave Oahu without a municipal landfill. However, last week's episode and any enforcement action taken by the state Department of Health or the EPA could weigh upon commissioners if they're asked to again extend the life of the landfill past the current July 31, 2012 target.

Land Use Commission Executive Officer Orlando "Dan" Davidson declined to speak on the record about the matter.

Read the full Land Use Commission special permit [here](#) [pdf].

**DISCUSSION:** *What other questions remain in the wake of the landfill spill? Join [the conversation](#).*

1. The National Pollutant Discharge Elimination System General Permit Coverage is regulated under [Sections 11-55-34 to 34.12](#) [pdf] and [Appendices A](#) [pdf] and [B](#) [pdf] of the Hawaii Administrative Rules. [Another appendix](#)

**EXHIBIT K208**

[pdf] includes standard permit conditions. [Section 342D](#) of the Hawaii Revised Statutes covers water pollution.

2. Relevant sections are Sections B-3 and B-4 (Pages 20-21) and Section G (Pages 41-43). [...](#)

[About Us](#) | [Contact](#) | [Terms of Service](#) | [Privacy](#)

30 [Tweet](#) 16 [Like](#) [Send](#)

Discussion



Add a comment...

[Comment](#)

Facebook social plugin

Have feedback? Suggestions? [Email Us!](#)

[Policy](#) | [FAQ](#) | [Subscriptions](#) | [Events](#) | [Discussions](#) | [Company Blog](#)

Copyright © 2010-2012 Peer News LLC. All rights reserved.

All purchases subject to Hawaii and City and County of Honolulu General Excise Tax of 4.712%.

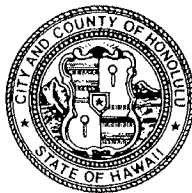
**EXHIBIT K208**



DEPARTMENT OF ENVIRONMENTAL SERVICES  
**CITY AND COUNTY OF HONOLULU**  
REFUSE DIVISION

1000 ULUOHIA STREET, SUITE 201, KAPOLEI, HAWAII 96707  
TELEPHONE: (808) 768-3401 • FAX: (808) 768-3434 • WEBSITE: <http://envhonolulu.org>

PETER B. CARLISLE  
MAYOR



TIMOTHY E. STEINBERGER, P.E.  
DIRECTOR

SILVESTRE L. ULEP, P.E.  
INTERIM ASSISTANT CHIEF

IN REPLY REFER TO:

**CITY AND COUNTY OF HONOLULU  
MAYOR'S ADVISORY COMMITTEE ON LANDFILL SITE SELECTION  
WARD WAREHOUSE (1050 ALA MOANA BLVD.)  
WARD WAREHOUSE CONFERENCE ROOM - 2<sup>ND</sup> FLOOR  
MEETING NO. 9  
FRIDAY, MARCH 16, 2012  
9:00 A.M. - 2:00 P.M.**

**AGENDA**

1. Welcome and Introduction  
  
Purpose: To report to the Committee on the final findings regarding potential sites per the Committee's instructions from the last meeting; and to weight the Community Criteria and apply these weights to the sites.  
  
Outcome: To have a list of ranked sites for presentation to the City in the final report.
2. Review of Meeting No. 8
3. Public Comments
4. Consultant's Report on Final Site Evaluation
5. Committee's Weighting of Community Criteria
6. Application of Weights to Sites to Achieve Ranking
7. Discussion on the Draft Executive Summary and Final Report
8. Thank You and Adjournment

Mayor's Advisory Committee on Landfill Site Selection  
City and County of Honolulu

---

**Alternative Landfill Sites, Island of O'ahu**

Source: Table 9-2, Final EIS, Waimānalo Gulch Sanitary Landfill Lateral Expansion, 2008

No.	Site Name	Tax Map Key	Size (Acres)
1	Auloa	4-2-14:por 1	55
2	Ameron Quarry	4-2-15:01	391
3	Barbers Point	9-1-16:18, por 1	15
4	Bellows	4-1-15	173
5	Diamond Head Crater	3-1-42:por 6	115
6	'Ewa No. 1 (Developed)	9-1-17	-
7	'Ewa No. 2 (Developed)	9-1-10	-
8	Hālawa A	9-9-10:8,9,por 10 & 26	40
9	Hālawa B	9-9-10:27, por 10	60
10	He'eia Kai (Developed)	4-6	-
11	He'eia Uka	4-6-14:01	163
12	Honouliuli	9-1-17:por 4	22
13	Ka'a'awa	5-1	150
14	Ka'ena	6-9-1:por 3, 33 & 34	40
15	Kahaluu	4-7	-
16	Kahe	9-2-3:por 27	200
17	Kalāheo (Closed)	4-2-15:por 1 & 6	134
18	Kaloi	9-2-02:por 1; 9-2-3:por 2; 9-2-4:por 5	400
19	Kapa'a No. 1	4-4-14:por 2	60
20	Kapa'a No. 2 & 3 (Closed)	4-2-15:por 1, 3, 4, 7	-
21	Kaukonahua	7-1	34
22	Kawailoa (Closed)	-	-
23	Ke'eke'e	6-9-1:por 3 & 4, 6-9-3: por 2	40
24	Koko Crater	3-9-12: por 1	140
25	Kunia A	9-4-4: por 4	150
26	Kunia B	9-4-3: por 19	190
27	Mā'ili	8-7-10:3	200
28	Makaiwa	9-2-3	338
29	Makakilo Quarry	9-2-3:82	175
30	Makua	8-1-1, 8-2-1	600
31	Mililani	9-5	34
32	Nānākuli A	8-7-9:1 & 3 and 8-7-21:26	179
33	Nānākuli B	8-7-9:1 & 3 and 8-7-21:26	432
34	Ohikilolo	8-3-1:13	706
35	Olomana	4-2	-
36	Poamoho	7-1	5
37	Punalu'u	5-3	200
38	Sand Island (Developed)	1-5-41	150
39	Waiahole	4-8	60
40	Wai'anae (Closed)	8-5	-
41	Wai'anae Expansion	8-5-3 and 6	140
42	Waihe'e	4-7	61
43	Waikane	4-8	200
44	Waimānalo Gulch	9-2-3: 72 & 73	60
45	Waimānalo North	4-1-08:13	171
46	Waimānalo South	4-1	355
47	Waipi'o	9-3-2	60

Sites = 48

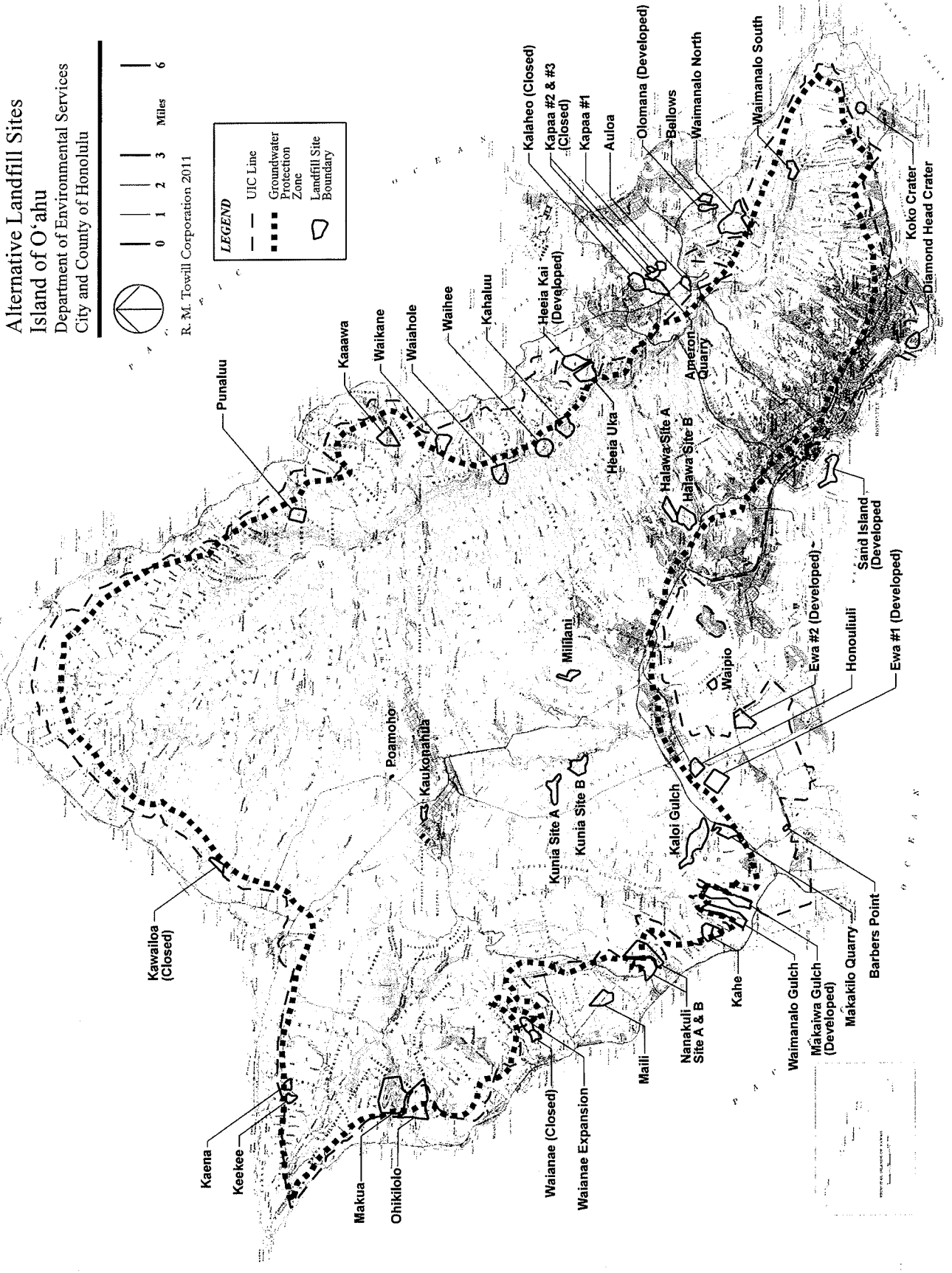
Alternative Landfill Sites  
 Island of O'ahu  
 Department of Environmental Services  
 City and County of Honolulu



R. M. Towill Corporation 2011

**LEGEND**

- UIC Line
- Groundwater Protection Zone
- Landfill Site Boundary



**Meeting No. 6  
Group Memory**

Mayor's Advisory Committee on Landfill Site Selection  
City and County of Honolulu

July 19, 2011

Attendance:

Committee Members Present: David Arakawa, Tom Arizumi, John Goody, Tesha Malama, Richard Poirier, Chuck Prentiss, George West, Janice Masters

Committee Members Absent: Joe Lapilio

Consultants: Brian Takeda, Mark White, Jim Dannemiller

Facilitator: Dee Dee Letts

Agenda:

Welcome and Introduction

Review of Mtg. No. 5

Public Comment

Data Sheets

Committee's Weighting of Criteria

Committee's next Meeting (August Workshop) Thank You and Adjournment

The meeting was held in the Mayor's Conference Room, Honolulu Hale, starting at 9:00 AM, with a review of the agenda.

The Facilitator then reviewed the meeting minutes of the previous meeting clarifying the additions made to the criteria at that meeting.

The Committee next invited comments from any member of the public in attendance. There were no comments.

Next the consultants conducted a brief walk through of the final landfill criteria.

Three changes were made to the criteria based on this review:

1. Distance was added as a factor to #7 Wind Direction
2. In #12 Precipitation; a 25 year event with a 24 hour duration was changed to a 100 year event with a 24 hour duration
3. A review of HRS, Chapter 205 was to be added to #20 for Agricultural Lands

The consultants next gave a review of the response received from the Board of Water Supply. A handout was supplied to the Committee explaining the response.

Consultants Homework:

The Committee asked the consultants to include those sites that are above or which crosses the no-pass line and UIC line in their analysis of sites. These sites would then be ranked with the others and a notation would be added that they are not consistent with the City's policy of not siting landfills above the no pass or UIC line to protect the drinking water sources for the island.

In addition, the Committee asked the consultants to review the Board of Water Supply capture zone maps and identify if there were any 100 acre or larger parcels that could be included on the list of potential landfill sites, even if the sites were above the UIC and No Pass Line.

Lastly the Committee asked the consultants to determine if it is the UIC or No Pass Line that was referenced in the City Council's resolution.

Finally, the Facilitator asked each of the Committee members to share their thoughts on which criteria would be most important to themselves and their communities. Below is a summary of each Committee members most important criteria to themselves and their community:

The following were identified as important by one or more committee members:

- Location relative to identified disamenities
- Location relative to H-POWER
- Effect of precipitation on landfill operations
- Landfill development operation and closure costs
- Displacement costs
- Precipitation
- Ground water contamination
- Design issues
- Access issues
- Proximity to other land uses (residences, institutions etc.)
- Traffic impacts on residential neighborhoods
- Infrastructure availability
- "Those criteria impacting people that live here 365 days a year"
- Feasibility and cost issues
- Infrastructure, engineering and sustainability issues
- Wind direction issues related to closeness to other activities
- Impact on agricultural lands

The weighting of the criteria was postponed to the following meeting because of the additional homework that the Committee assigned to the consultants. In addition, the Committee agreed that there might be need for an additional meeting based on the answers/results that the consultants discover from their homework assignments. A tentative additional meeting was set for August 16 from 9 to 12.

The meeting came to a close with a reminder of the date, time and place for the next meeting which is tentatively set for August 16th at 9 AM in the Mayor's Conference Room.

The meeting adjourned at 11:30PM.

**TESTIMONY OF IAN L. SANDISON  
ON BEHALF OF SCHNITZER STEEL HAWAII CORP.  
ON HB 2249, HD1  
(RELATING TO LANDFILLS)  
BEFORE THE  
COMMITTEE ON FINANCE  
HOUSE  
HAWAII STATE LEGISLATURE**

**February 27, 2012**

Dear Chair Oshiro, Vice Chair Lee, and Members of the Committee:

My name is Ian Sandison and on behalf of Schnitzer Steel Hawaii Corp. ("Schnitzer"), I am pleased to have this opportunity to testify in strong support of HB 2249. This bill allows and encourages the use of recycled materials as alternative daily cover at landfills in Hawaii. It is patterned after very similar legislation in California. The public benefits of this legislation are (1) minimization of waste, (2) prolonging of the useful life of Hawaii's existing landfills and (3) encouragement of recycling.

Schnitzer is Hawaii's largest recycler. Schnitzer's operations in Hawaii employ approximately 50 people, and include equipment and processes to recycle ferrous and non-ferrous scrap metal. Its state-of-the-art metal shredder can reduce a full-size automobile into fist-sized pieces of shredded steel scrap in approximately 30 seconds. For each ton of scrap metal received by Schnitzer, its recycling operation reduces the volume by 80%. Much of this material would otherwise take up significant space in the Waimanalo Gulch Sanitary Landfill, or be simply abandoned on Hawaii's streets and vacant lots.

Recycling operations produce some residual waste. Schnitzer shreds approximately 120,000 tons of scrap metal every year. In so doing, it generates approximately 20,000 tons of recycling residue. That residue consists primarily of plastics, glass, carpet and other nonmetallic automobile and appliance components. Currently, this residual waste goes to Waimanalo Gulch where it takes up valuable landfill space.

If HB 2249 is becomes law, Schnitzer could process this waste into alternative daily cover for use at landfills in Hawaii. While Schnitzer is currently working with the Department of Health on permitting processed shredder residue as alternative daily cover, the

permitting process has proved to be quite lengthy and repeats efforts that have already been undertaken elsewhere in the United States. On the mainland, waste from nearly all of Schnitzer's scrap metal recycling operations is further processed into alternative daily cover for use in landfills. This saves landfill space and changes what would otherwise be waste and turns it into a useful product. Alternative daily cover efficiently and economically helps to prevent landfill fires and to control litter, pests and odors.

Schnitzer strongly supports PVT's proposed amendment to allow for the use of recycled materials as alternative daily cover at construction and demolition landfills. This will further encourage recycling and greatly help to reduce Oahu's dependence on Waimanalo Gulch Sanitary Landfill.

Thank you very much for the opportunity to submit this testimony to your Committee.





# WAI'ANAE SUSTAINABLE COMMUNITIES PLAN



Department of Planning and Permitting  
City & County of Honolulu



**FEBRUARY 2012**

EXHIBIT A. BILL 50 (2011). CD2

# **WAI'ANAE SUSTAINABLE COMMUNITIES PLAN**

Prepared for:  
Department of Planning and Permitting  
City & County of Honolulu



Prepared by:  
Townscape, Inc.

**FEBRUARY 2012**

# WAI'ANAE SUSTAINABLE COMMUNITIES PLAN

## TABLE OF CONTENTS

	<u>Page</u>
PREFACE .....	P-1
EXECUTIVE SUMMARY .....	ES-1
CHAPTER 1: WAI'ANAE'S ROLE IN O'AHU'S DEVELOPMENT PATTERN.....	1-1
CHAPTER 2: THE VISION FOR THE FUTURE OF THE WAI'ANAE DISTRICT.....	2-1
2.1    VISION STATEMENT.....	2-1
2.2    COMMUNITY PARTICIPATION PROCESS .....	2-4
2.3    VISION ELEMENTS.....	2-4
CHAPTER 3: LAND USE POLICIES AND GUIDELINES .....	3-1
3.1    OVERVIEW OF LAND USE, POPULATION, ECONOMICS, AND ENVIRONMENTAL CONDITIONS.....	3-2
3.2    OPEN SPACE AND IMPORTANT VIEWS.....	3-9
3.3    COASTAL LANDS .....	3-12
3.4    MOUNTAIN FOREST LANDS .....	3-15
3.5    STREAMS AND FLOODPLAINS .....	3-17
3.6    HISTORIC AND CULTURAL RESOURCES .....	3-20
3.7    AGRICULTURAL LANDS .....	3-26
3.8    RESIDENTIAL LAND USE .....	3-28
3.9    COMMERCIAL AND INDUSTRIAL USES .....	3-35
3.10   COUNTRY TOWNS, RURAL COMMUNITY COMMERCIAL CENTERS AND GATHERING PLACES.....	3-38
3.11   PARKS AND RECREATIONAL AREAS .....	3-43
3.12   MILITARY LAND USE .....	3-49

**CHAPTER 4: PUBLIC FACILITIES AND INFRASTRUCTURE POLICIES AND GUIDELINES 4-1**

4.1 TRANSPORTATION SYSTEMS ..... 4-2  
 4.2 POTABLE AND NONPOTABLE WATER SYSTEMS..... 4-8  
 4.3 WASTEWATER COLLECTION AND TREATMENT SYSTEMS ..... 4-11  
 4.4 ELECTRICAL POWER AND COMMUNICATIONS ..... 4-12  
 4.5 DRAINAGE SYSTEMS ..... 4-15  
 4.6 SOLID WASTE HANDLING AND DISPOSAL ..... 4-17  
 4.7 CIVIC, PUBLIC SAFETY, AND EDUCATIONAL FACILITIES ..... 4-18  
 4.8 HEALTH CARE FACILITIES ..... 4-24  
 4.9 RELATION TO PUBLIC FACILITIES MAP ..... 4-26

**CHAPTER 5: IMPLEMENTATION ..... 5-1**

5.1 OVERVIEW OF PLANNING IMPLEMENTATION TOOLS ..... 5-1  
 5.2 IMPLEMENTATION MATRIX ..... 5-2  
 5.3 PUBLIC FACILITY INVESTMENT PRIORITIES ..... 5-10  
 5.4 DEVELOPMENT PRIORITIES ..... 5-11  
 5.5 SPECIAL AREA PLANS ..... 5-11  
 5.6 FUNCTIONAL PLANNING ..... 5-12  
 5.7 REVIEW OF ZONING AND OTHER DEVELOPMENT APPLICATIONS..... 5-12  
 5.8 FIVE-YEAR SUSTAINABLE COMMUNITIES PLAN REVIEW ..... 5-13  
 5.9 RELATIONSHIP TO GENERAL PLAN & DEVELOPMENT CODES ..... 5-14

**APPENDIX: THE CONCEPTUAL MAPS ..... A-1**

A.1 LAND USE MAP ..... A-5  
 A.2 OPEN SPACE MAP ..... A-7  
 A.3 PUBLIC FACILITIES MAP ..... A-9

## LIST OF EXHIBITS

EXHIBIT 1-1: DEVELOPMENT PLAN AND SUSTAINABLE COMMUNITIES PLAN AREAS .....	1-2
EXHIBIT 2-1: <i>AHUPUA'A</i> MAP .....	2-8
EXHIBIT 3-1: WAI'ANAE'S RACIAL DISTRIBUTION.....	3-4
EXHIBIT 3-2: CULTURAL RESOURCES MAP .....	3-23
EXHIBIT 3-3: PARKS MAP .....	3-45
EXHIBIT 4-1: MAJOR & MINOR ROADWAYS MAP.....	4-6
EXHIBIT A-1: LAND USE MAP .....	A-10
EXHIBIT A-2: OPEN SPACE MAP .....	A-11
EXHIBIT A-3: PUBLIC FACILITIES MAP .....	A-12

## LIST OF TABLES

TABLE 3-1: POPULATION TRENDS FOR WAI'ANAE .....	3-3
TABLE 3-2: LAND USE PERMITTED BY CURRENT CITY & COUNTY ZONING.....	3-6
TABLE 3-3: HOUSING TRENDS IN THE WAI'ANAE DISTRICT: 1980 TO 2000.....	3-29
TABLE 3-4: HOUSING DATA FOR 2000: O'AHU VS. WAI'ANAE.....	3-30
TABLE 3-5: PLANNED DEVELOPMENTS FOR THE WAI'ANAE DISTRICT .....	3-30
TABLE 3-6: CITY PARKS & PARK ACREAGE .....	3-46
TABLE 3-7: CITY PARK REQUIREMENTS PER CITY STANDARDS FOR 2009 WAI'ANAE POPULATION.....	3-47
TABLE 4-1: PUBLIC SCHOOL ENROLLMENT IN THE WAI'ANAE DISTRICT .....	4-21
TABLE 5-1: IMPLEMENTATION MATRIX .....	5-5

Drainage system design should emphasize control and minimization of non-point source pollution and retention and detention. Modifications if needed for flood protection should maintain rural character and aesthetic quality, avoid degradation of coastline and of stream and near shore water quality. To the extent possible, integrate planned drainageway improvements into the regional open space network by providing for access for pedestrians and bicycles.

#### **4.5.2.2 Establish a Sediment Control Program**

Establish a sediment control program to protect both stream quality and the quality of nearshore waters. Minimally, standards for the creation and use of sediment basins at critical locations on both agricultural and urban lands should be established. Thereafter, a program of phased implementation and conscientious enforcement of sediment control measures should be pursued.

## **4.6 SOLID WASTE HANDLING AND DISPOSAL**

### **4.6.1 Overview of Solid Waste Issues**

The majority of Wai'anae's domestic solid waste is collected and disposed of by the City's Department of Environmental Services, Refuse Division. The Refuse Division handles the bulk of O'ahu's residential solid waste services, including the recycling and green waste collection. Since 1990, most of O'ahu's residential and general commercial trash has been disposed of at H-POWER, the City's waste-to-energy plant, located in Campbell Industrial Park. Noncombustible solid waste, construction and demolition (C&D) debris, and industry wastes go directly to a privately owned landfill – the PVT Nānākuli Construction and Demolition Material Landfill, located in the Wai'anae District, on Lualualei Naval Station Road. Waimanalo Gulch, located in the southwestern corner of the 'Ewa District, near the border with the Wai'anae District is city owned, and operated by a private solid waste company. These landfills are near their permitted capacities, and the question of what to do with the island's waste in the long-run remains unanswered.

The future of O'ahu's solid waste became a major public and political issue in 2004, when the decision to expand Waimanalo Gulch landfill came before the City Council. At that time, the Council voted to expand the Waimanalo Gulch, instead of opening one of the four alternative sites proposed. The other sites given consideration were Mā'ili, Nānākuli, and Makaiwa Gulch, all on the Leeward Coast, and Kapa'a Quarry in Kailua. Wai'anae residents were vocally adamant that their District should not have to carry the burden of housing yet another landfill. In addition, most did not support the expansion of Waimanalo Gulch. Wai'anae residents have continued to watchdog landfill proposals for their District.

Another local solid waste issue that is of concern to the Wai'anae community is the problem of illegal dumping of all kinds of solid waste, including material from demolished buildings and from construction sites, old cars, old appliances, animal carcasses, animal wastes, and various other kinds of junk and debris. The many country roads and open spaces in the Wai'anae District are unfortunately very easy to use for illegal and indiscriminate dumping of unwanted solid (and liquid) wastes. The many illegal dump areas in the District are both unsightly and a threat to public health. Much stronger State and City controls are needed to combat this problem.

## **4.6.2 Policies Pertaining to Solid Waste Disposal**

### **4.6.2.1 Enforce Anti-Dumping Laws**

Public agencies should coordinate with the community to develop and implement a comprehensive program for the cleanup of illegal dumps and the ongoing enforcement of laws forbidding illegal dumping of wastes and debris. The enforcement program may include some form of partnership with the community whereby each subcommunity of the Wai'anae District organizes volunteers who will patrol the area's roads on a regular basis and report to a designated code enforcement officer any illegal dumps or illegal dumping activity. Public agencies, in turn, must provide the manpower to follow up on these reports of illegal dumping. The appropriate field visits and investigations must be made, and, where necessary, prosecution of offenders must be pursued.

### **4.6.2.2 Encourage Green Waste Composting**

Green waste composting should be encouraged by private sources within the District.

## **4.7 CIVIC, PUBLIC SAFETY, AND EDUCATIONAL FACILITIES**

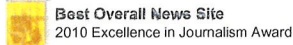
### **4.7.1 Overview of Civic, Public Safety, and Educational Facilities**

**Wai'anae Satellite City Hall** is located within the Wai'anae Neighborhood Community Center at 85-670 Farrington Highway, just south of Wai'anae Intermediate School. As of 2010, services include:

- Car Motor vehicle registration, renewal, and transfer of ownership
- Bicycle and moped registration
- Payment of water bill and real property tax
- Disabled parking permits
- Dog licenses

Register Now | Sign-in | Subscribe

Search Civil Beat... Search



Monday, April 2nd, 2012

# HONOLULU CIVIL BEAT

Like 4k Follow iPhone/iPad

Today Live Elections Honolulu Hawaii Education Land Money Breaking News Sports Business Entertainment Archive Topics

1 Tweet 4 Like Send

## Landfill Site Panel Wants Distance From Residents

By Michael Levine | 03/16/2012

The panel charged with picking a site for Honolulu's next landfill has identified the key criteria and is moving closer to concluding its work even as it expands the list of potential sites and delays the finished product.

The Mayor's Advisory Committee on Landfill Site Selection's nine members convened in a Ward Warehouse conference room for hours Friday in what was supposed to be its final gathering. But a decision early in the meeting made clear that wouldn't be the case, when the group decided it wanted to re-include spots uphill from residential communities despite possible runoff problems as well as federal government- and military-owned land despite acquisition hurdles.



Michael Levine/Civil Beat

(Read updates from the Inside Honolulu blog: [Makaiwa Gulch Eliminated from Landfill Contention](#) and [Makaiwa, Military Parcels Back In](#))

"When the military says no, the federal government says no, you've just got to bang on the door more than once and you'll find out they're your best friend," said Honolulu City Council member Tom Berg, who testified at the meeting and urged the inclusion of federal and military lands. He doesn't want a new landfill to end up in his Leeward Oahu district near where Waimanalo Gulch Sanitary Landfill now sits. He even said that if a Leeward site is selected, he'll make good on his threat to introduce a measure to have his section of Oahu secede from the City and County of Honolulu.

The panel's rationale for removing the screening filters and reinserting potential sites — expanding the list from seven to somewhere between 13 and 22 — was that the criteria-weighting process and the ultimate decision-making process by Mayor Peter Carlisle and the Council will effectively consider the concerns about ownership, runoff and any other issues.

"As you have seen today, the committee is leaving no stone unturned in making its final product defensible," Environmental Services Department spokesman Markus Owens told Civil Beat via email after the meeting.

To that point, the group had accomplished an important goal Friday — weighting 19 criteria for the ranking so that consultants can award points and rank the sites based on the most important factors. The panel identified distance from residential areas as the most critical, followed by proximity to the HPOWER waste-to-energy facility, surface water runoff issues and impacts to traffic, among others.

The committee will next meet on April 5 at 9 a.m. at a site to be determined.

### Meanwhile, At Waimanalo Gulch ...

The landfill-siting advisory panel is about a year into its work, which means there's at least six years left until the new landfill is able to start accepting municipal solid waste, regardless of whether its designed to be a replacement for or a supplement to the city's existing landfill at Waimanalo Gulch.

But that facility is required by its permits to stop accepting solid waste — excluding ash — less than five months from now, on July 31. Owens said there are two concurrent tracks that ENV is pursuing to make sure it can keep sending trash to the landfill after the deadline without violating the law.

In the first, the Planning Commission is holding a contested case to determine if the deadline should be eliminated. A hearing in the case was scheduled for this week but was cancelled due to a lack of quorum. If the Commission agrees to eliminate the deadline, the matter would go to the Hawaii Land Use Commission, which would be asked to do the same thing.

If either of those bodies rule against the city, that's not necessarily the end of the line. ENV has also filed a claim in court seeking to strike the deadline from the permit language. The matter was heard by the Hawaii Supreme Court last month. The city needs only one of the two tracks to succeed.

CHANGE BEGINS WITH A QUESTION™

### What questions do you have about Hawaii? Ask them here!

About the Author

**Michael Levine**  
Honolulu Reporter-Host



Articles / Michael Levine  
Topics / Michael Levine  
Discussions / Michael Levine

Media



Related Content

#### Articles

- Berg: West Oahu Should Secede From Honolulu
- Waimanalo Gulch Landfill Spill — a Timeline
- Controversial Landfill Expansion To Receive Trash Soon
- Fight Over Waimanalo Gulch Landfill Brewing
- New Details Emerge About Landfill Spill Response

#### Primary Topic Pages

- Solid Waste In Hawaii
- Peter Carlisle
- City and County of Honolulu Government

Recommended Content

Sign Up Create an account or log in to see what your friends are doing.

- Tulsie Gabbard's Leeward Journey**  
17 people recommend this
- Inouye Wants to Revive Interisland Ferry**  
23 people recommend this.
- Why Tuesday's Pimp Sentencing Is A Big Deal**  
36 people recommend this
- Hoopili Symbolizes Direction of Oahu's Future**  
29 people recommend this.

Facebook social plugin

Follow Civil Beat

EXHIBIT K226



**DISCUSSION:** *What factors do you think are the most important in deciding where the new landfill should go?*

1 **Ywest** 4 [Like](#) [Send](#)

[About Us](#) | [Contact](#) | [Terms of Service](#) | [Privacy](#)

Discussion

  [Comment](#)

Facebook social plugin

Have feedback? Suggestions? [Email Us!](#)

[Policy](#) | [FAQ](#) | [Subscriptions](#) | [Events](#) | [Discussions](#) | [Company Blog](#)

Copyright © 2010-2012 Peer News LLC. All rights reserved.

All purchases subject to Hawaii and City and County of Honolulu General Excise Tax of 4.712%.

**EXHIBIT K226**



# Aloha Aina Recycling

## 2012 Schedule

January 7	Hui O Ko'olaupoko @Waimanalo Beach Park	
January 13	State Labor, Tax Attorney General Offices	Mini event
January 14	Kalani High School	Mini event
January 21	Castle High School	Green Waste
February 4	Mililani High School	Green Waste
February 25	Baldwin High School	
March 3	Campbell High School	Green Waste
March 10	Our Savior Lutheran School	Mini event
March 24	Moanalua Elementary & Middle Schools	Shred It First Box Free
March 31	Waianae High School	
April 7	Kalaheo High School Project Grad	
April 14	Leilehua High School	
	Ryuku Kobudo Taiko @ Leeward Community College	Mini Event
April 21	Waikele Elementary School	Green Waste; Mini Event
April 28	Niu Valley Middle School	Mini Event
May 19	Kaelepulu Elementary School	
May 26	Moanalua High School	Green Waste
July 14	Oahu Veterans Center @ Foster Village	
July 21	KEY Project @ Kahaluu Regional Park	
August 4	St Louis School	
August 18	Aiea Community Association	Mini Event
September 15	Waikiki 2000 Lions Club @ Ala Wai Elementary	Shredding Access Info
September 22	St Timothy's Pearl Ridge	
October 6	Waialua Community Association	Green Waste
October 20	Kaimuki High School	
October 27	Mililani Town Association	Green Waste
November 3	Campbell High School	Shredding Access Info Management; Green Waste
December 1	Kapolei High School	Shredding Access Info Management; Green Waste

**Schnitzer Steel Hawaii Corporation**  
Campbell Industrial Park  
91-056 Hanua St., Kapolei, HI 96707

**808.682.5810**

EXHIBIT K227

# Mahalo to our Aloha `Aina Partners



**Goodwill**  
Industries of Hawaii, Inc.



## Examples of items accepted free of charge at Aloha `Aina Recycling Events:

- Scrap metal, bicycles, appliances
  - Cooking oil
  - Beverage containers
  - Cell phones, Printer Cartridges
  - DVDs, CDs, Blue Ray, Games
  - Prom dresses, accessories
  - Career attire, accessories
  - Newspaper, cardboard
  - Pet food, towels, blankets, toys
  - Plastic playground sets, helmets
  - Old boogie boards, football helmets
  - Used eye glasses, hearing aids
  - Batteries – all kinds
  - Computers, printers, scanners
  - 1 TV per car only
  - Usable clothing /household items
  - Telephone books, magazines
  - Plastic bags, boogie boards
  - Green Waste
- FREE roll-off bin service for scrap metal – FREE towing of unwanted cars- call for info- 682-5810.
- CAN NOT ACCEPT: Tires, Motor Oil, Paints, Hazardous Fluids, Microwave Ovens, Gas Tanks

BEFORE THE PLANNING COMMISSION  
OF THE CITY AND COUNTY OF HONOLULU  
STATE OF HAWAI'I

In the Matter of the Application of

DEPARTMENT OF ENVIRONMENTAL  
SERVICES, CITY AND COUNTY OF  
HONOLULU

To delete Condition No. 14 of Special  
Use Permit No. 2008/SUP-2 (also  
referred to as Land Use Commission  
Docket No. SP09-403) which states as  
follows:

“14. Municipal solid waste shall be  
allowed at the WGSL up to July 31,  
2012, provided that only ash and residue  
from H-POWER shall be allowed at the  
WGSL after July 31, 2012.”

FILE NO. 2008/SUP-2

**CERTIFICATE OF SERVICE**

**CERTIFICATE OF SERVICE**

The undersigned certifies that on this day a copy of the foregoing document was  
duly served on the following persons:

ROBERT CARSON GODBEY, ESQ.

(Hand Delivery)

Corporation Counsel

DANA VIOLA, ESQ.

ROBERT BRIAN BLACK, ESQ.

Deputies Corporation Counsel

City and County of Honolulu

530 South King Street, Room 110

Honolulu, Hawai'i 96813

Attorneys for DEPARTMENT OF ENVIRONMENTAL SERVICES,  
CITY AND COUNTY OF HONOLULU

DEPARTMENT OF ENVIRONMENTAL SERVICES (Certified Mail)  
City and County of Honolulu  
1000 Uluohia Street, Suite 308  
Kapolei, Hawai'i 96707

DEPARTMENT OF PLANNING AND PERMITTING (Hand Delivery)  
City and County of Honolulu  
650 South King Street, 7th Floor  
Honolulu, Hawai'i 96813

IAN L. SANDISON, ESQ. (Hand Delivery)  
DEAN H. ROBB, ESQ.  
TIM LUI-KWAN, ESQ.  
Carlsmith Ball LLP  
American Savings Bank Tower  
1001 Bishop Street, Suite 2200  
Honolulu, Hawai'i 96813

Attorneys for Intervenor  
SCHNITZER STELL HAWAII CORP.

DATED: Honolulu, Hawai'i, April 5, 2012.

CADES SCHUTTE  
A Limited Liability Law Partnership



---

CALVERT G. CHIPCHASE  
CHRISTOPHER T. GOODIN

Attorneys for Intervenors  
KO OLINA COMMUNITY ASSOCIATION  
and MAILE SHIMABUKURO