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**Waste Electronics Incentive Program
for Collectors and Processors -
Summary of Audit and Review
Activities**

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Alberta Recycling Management Authority, Waste Electronics Incentive Program for Collectors and Processors - Summary of Audit and Review Activities

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1.0 Introduction

The Alberta Recycling Management Authority (ARMA) has been mandated through regulation to administer electronics recycling programs in Alberta. On September 15, 2004, ARMA adopted the "Waste Electronics Incentive Program for Collectors and Processors" (the Program). The administration of the Program is done through Electronics Recycling Alberta (ERA), a division of ARMA.

Municipalities collect waste electronics for recycling at municipal collection sites registered with ARMA. Collected materials are then transported to a Registered Processor's site for processing or recycling. To become a Registered Processor (in order to be eligible for incentives to be paid under the Program), processors must meet the Processor Qualification Requirements, as well as other terms and conditions specified under the Program, and be registered with ARMA.

At the time of the implementation of the Program in Alberta, there were three electronics processors who had applied to ARMA and had become Registered Processors under the Program. In 2005, three new processor applications were received and evaluated.

1.1 THE AUDIT AND REVIEW PROCESS

In order to monitor conformance to Program requirements (which includes compliance with applicable environmental, and occupational health and safety regulations), ARMA has commissioned various audits and reviews of existing Registered Processors, in addition to the evaluation of new applicants. Reviews of downstream processors to which material is sent under the Program are also part of this process. The audits and reviews being conducted on behalf of ARMA include the following activities, each of which is further described below:

- Applicant Evaluations
- Processor Program Audits
- Waste Tracking Reviews
- Downstream Processor Reviews

1.1.1 Applicant Evaluations

The new processor registration process carried out when new processor applications are submitted to ARMA includes this evaluation of an application against the Processor Qualification Requirements in order to make recommendations to ARMA relating to the qualifications and capability of processor applicants, and their suitability for registration under the Program. In order to complete this task, the information contained in the processor application submitted to ARMA is reviewed. The evaluation involves an assessment of the content and completeness of the required information, including the completed application forms, a company overview, and

details regarding environmental management and health and safety systems, insurance and workers compensation bureau coverage.

Information (if any) obtained through internet research regarding the applicant company is also considered. As well, an historical environmental enforcement search in respect of the applicant company is conducted through the Environmental Law Centre.

In addition to this documentation review and research, an initial assessment (including a site visit) of the applicant's facility is completed in order to determine the scope and magnitude of the applicant's operations, to clarify information provided in the application, and to identify those elements that may require further clarification or investigation. The initial assessment also facilitates the completion of other audit and review activities required by ARMA with respect to the Program.

An initial assessment (including a site visit) was also conducted in respect of the three facilities that had become Registered Processors at the time of the implementation of the Program.

1.1.2 Processor Program Audits

Processor program audits of each Registered Processor (including a site visit to evaluate and monitor activities on-site) are undertaken to ensure conformance to Program requirements. Facilitated by information obtained through the initial assessments described above, appropriate protocols were developed and are used to conduct these processor program audits. The processor program audits are currently scheduled approximately three months after a processor's initial registration with ARMA, and are expected to be carried out approximately once per year thereafter.

1.1.3 Waste Tracking Reviews

As the name suggests, the purpose of these reviews is to undertake a tracking of the waste streams flowing into and out of the Registered Processors' facilities. Records describing the amount of material passing through the various processes in the facility are reviewed, and a mass balance is generated.

In addition, a review of the documents relating to transportation and destination of materials shipped from the Registered Processors' facilities to sub-contractors or other sites is carried out. Transportation and material tracking documentation are reviewed to substantiate the waste reporting records submitted to ARMA by the Registered Processors.

The waste tracking reviews identify the materials received at the Registered Processor's facility, the amount of material handled by the Registered Processor, and the amount of material sent to each downstream processor in the given reporting periods. Particular attention is paid to the amount of incoming and stockpiled waste, with a view to ensuring conformance to Program

requirements. It is expected the waste tracking reviews will take place three to four times per year for each Registered Processor.

1.1.4 Downstream Processor Reviews

Apart from the audit of Program requirements pertaining to transportation conducted as part of the processor program audits (described above), periodic reviews are to be conducted in respect of transportation and destination of materials shipped from the Registered Processors' facilities to downstream processors (sub-contractors or other companies that receive electronics materials for further processing/recycling). These reviews include interviews and site inspections of downstream processing facilities, and a review of documents pertaining to materials ultimately receiving funding under the Program. Besides reconciling information obtained from the downstream processor with that provided by the Registered Processor, these reviews are aimed at also ensuring that the sub-contractors and other sites conform to Program requirements pertaining to downstream processors e.g. that they hold the required authorizations, permits or approvals for their operations, that they process materials in an environmentally sound manner, that they do not send materials to non-OECD countries for disposal, etc.

The schedule and nature of the audits and reviews is established with a view to ensuring conformance to Program requirements. Although a generic timeline has been developed in respect of each of the activities described above (see Figure 1), the audit and review process is intended to be flexible such that the scope and/or frequency of a given type of audit or review of a Registered Processor or downstream processor may be adjusted, if it is considered necessary to do so, based on audit or review findings. For example, the frequency of an audit or review may need to be increased if any issues are observed that require follow-up on a more urgent basis; alternatively, depending on the nature of the activities that take place at the Registered Processor's facility, the scope of the audit of that facility may need to be expanded in order to include monitoring (by means of analytical sampling and testing) to ensure compliance with environmental regulatory requirements.

1.2 AUDIT AND REVIEW ACTIVITIES TO DATE

A number of audit and review activities have taken place to date.

Initial assessments were conducted in late January 2005 in respect of the three Registered Processors that existed at the time that the Program was implemented: HMI Industries, Recycle-Logic Inc. and Maxus Technology Inc. The information obtained during these initial assessments facilitated the identification of appropriate audit criteria and the development of the audit protocols required to conduct the processor program audits.

In March 2005, the first processor program audits were completed in respect of the initial three Registered Processors. Waste tracking reviews of each of these three Registered Processors

were conducted in May 2005. One of these Registered Processors (Maxus) has since discontinued its electronics recycling operations.

Since the audit and review process began, three new processor applications have been received and evaluated, and initial assessments of these applicants have been conducted. The applicant evaluation and initial assessment of Shank Metals was completed in March-April 2005, of TechnoTrash Alberta in May-June 2005 and of e-Cycle Solutions Inc. in July-September 2005. Based on the findings of these applicant evaluations and initial assessments, a recommendation was made to ARMA that each applicant be accepted for registration in the Program; in two cases, the recommendation was contingent upon the applicant taking certain prescribed steps to ensure compliance with occupational health and safety requirements.

Downstream processor reviews are currently underway. Some information regarding downstream processors and destinations has already been obtained during the initial assessments, the first processor program audits and the waste tracking reviews that have taken place to date.

1.3 SUMMARY OF FINDINGS TO DATE

1.3.1 eWaste Activities

Eligible eWaste¹ is sorted from ineligible waste. Eligible eWaste is tracked by weight and/or by the number of the various eligible products (i.e. waste counts). Activities at the Registered Processors' facilities consist of receiving, sorting, processing and packaging electronics waste for shipping to a downstream processor. Processing generally involves the dismantling of the eWaste into its component parts (i.e. circuit boards, metal, plastic, wire and glass).

From the Registered Processors in Alberta, eWaste is directed to a number of downstream processors including glass and plastics recyclers, metal recyclers and/or steel processors, scrap and precious metal recovery facilities, battery recyclers, fluorescent light recyclers, and paper and cardboard recyclers. Any eWaste components or parts that are resold or reused are not eligible for incentives (i.e. are not funded) under the Program. A small amount of residual material is directed to landfill.

1.3.2 Waste Quantities

Based on the findings of the waste tracking reviews conducted in May 2005, and additional waste tracking records submitted to ARMA up to the end of August, the following are the Program results in terms of quantities of eligible eWaste processed:

¹ "Eligible eWaste" means waste in respect of which a Registered Processor is eligible for incentive payments under the Program.

- 2152 tonnes of eligible eWaste has been processed by all of the Registered Processors combined.
- 81(tonnes of residuals (4% of the waste processed) has been sent to landfill by all of the Registered Processors combined. (Residual material (“residuals”) is generally composed of wood and cardboard.)

1.3.3 Conformance to Program Requirements

It is a Program requirement that Registered Processors must identify and comply with all applicable environmental, and occupational health and safety regulations. In the course of the audit and review activities, all Registered Processors were found to have a Health and Safety program in place, and at least some elements of a typical Environmental Management System (EMS). However, the completeness of those programs, and the extent to which they were implemented, varied among the Registered Processors and some deficiencies have been noted in respect of occupational health and safety regulatory requirements, and the scope and completeness of the EMS documentation. There have been no findings to date of non-compliance with environmental regulatory requirements. A summary of the deficiencies identified regarding the Registered Processors currently in operation and in respect of which processor program audits have been completed to date is attached as a Schedule to this report.

Deficiencies identified during the processor program audits have been brought to the attention of ARMA and the respective Registered Processors. A deficiency list was provided to each Registered Processor following the processor program audit of that facility. Each Registered Processor was required to respond to the deficiency list for their facility on an item-by-item basis within 14 days of receipt and to address the deficiencies in a timely manner. The issues related to the deficiencies will be followed up to ensure that the appropriate corrective actions have been implemented so that the Registered Processor conforms to Program requirements, which is necessary in order to maintain eligibility under the Program. To date, no deficiency has been found that has been assessed as requiring follow up on a more urgent basis.

Registered Processors were generally able to provide the required information regarding downstream processors and/or transporters that they use. Deficiencies observed with respect to this type of information were brought to the attention of the Registered Processor(s) in order that they may follow up directly to obtain the required information. As well, ARMA will implement a requirement that Registered Processors provide advance notice to ARMA prior to sending materials to any downstream processors that have not been previously reviewed.

Based on the findings of the processor program audits and subsequent reviews, and having regard to the deficiencies identified, all Registered Processors are currently in substantial conformance to the Program requirements.

1.4 NEXT STEPS

The first processor program audits of the three facilities that were more recently recommended for registration are expected to take place within the next 60 days i.e. by the end of 2005.

Waste tracking reviews, focused more specifically on monitoring the inventory of eWaste at the Registered Processors' facilities, will continue to be conducted periodically in respect of all Registered Processors.

A review of downstream processors has been initiated and includes the sub-contractors and other sites to which eWaste is directed from Registered Processors. Results of downstream processor reviews have not been completed and compiled as of the date of this report.

Applicant evaluations and initial assessments will be carried out as required when new processor applications are received by ARMA.

1.5 CLOSING

The Program includes the following as part of its objectives and requirements:

“2.1 The purpose of the Program is to encourage waste minimization and recycling of waste electronics in Alberta....

2.3 The Program will not support or fund any use or disposal of Ineligible Material, or Waste Electronics provided to facilities without a documented commitment to environmentally sound management and fair labour practices, or such other uses or materials that from time to time may be prohibited by the Authority, or any applicable legislation, bylaw, regulation or enactment.”

Having regard to the purposes of the Program, and the overall Program requirements, all current Registered Processors have been found to be substantially in conformance to the terms and conditions of the Program, including compliance with applicable environmental regulatory requirements. ARMA has required that the Registered Processors address any deficiencies identified in order to ensure conformance to Program requirements and to further the overall Program objectives.

Registered Processors have been co-operative and transparent with the auditors during the course of the audits and reviews, and have been responsive to the audit findings and required follow up.

ALBERTA RECYCLING MANAGEMENT AUTHORITY, ALBERTA RECYCLING MANAGEMENT AUTHORITY, WASTE ELECTRONICS INCENTIVE PROGRAM FOR COLLECTORS AND PROCESSORS - SUMMARY OF AUDIT AND REVIEW ACTIVITIES**2.0 Schedule****2.1 SUMMARY OF DEFICIENCIES IDENTIFIED DURING PROCESSOR PROGRAM AUDITS**

The following is a summary of the deficiencies identified at one or more facilities during the 7 processor program audits that have been conducted of the current Registered Processors initially registered under the Program. (Processor program audits have not yet been conducted of the Registered Processors more recently registered under the program i.e. in 2005.) The deficiencies are categorized under the various areas within the scope of the audits. (No deficiencies (i.e. instances of non-compliance) were found with respect to environmental regulatory requirements.) The relevant legislative or Program reference is also provided.

HEALTH AND SAFETY	
ITEM	REFERENCE
Workers had a weak understanding of their legal responsibilities, such as the right to refuse unsafe work and the requirement to protect themselves and their co-workers	<i>Alberta Occupational Health and Safety Act</i>
The tasks, but not the hazards, for each job were evaluated and prioritized	<i>Alberta Occupational Health and Safety Code</i>
The hazard assessment process did not address all of the requirements of the OH&S Code in every case, such as air monitoring requirements for respiratory protection	<i>Alberta Occupational Health and Safety Code</i>
Noise measurements are required by the OH&S Code in indoor processing areas	<i>Alberta Occupational Health and Safety Code</i>
Hazard assessments must be reviewed and updated when changes are made to the operations	<i>Alberta Occupational Health and Safety Code</i>
Hazard assessments must updated and reviewed with employees on a regular basis	<i>Alberta Occupational Health and Safety Code</i>
WHMIS compliance needs improvement <ul style="list-style-type: none"> • WHMIS and TDG labels that were no longer applicable were observed on a number of pails, barrels and other containers around the site • Workers are unaware of some of the controlled products on site 	<i>Alberta Occupational Health and Safety Code Transportation of Dangerous Goods Act and Regulations</i>
Additional toilet facilities are required	<i>Alberta Occupational Health and Safety Code</i>

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HEALTH AND SAFETY	
ITEM	REFERENCE
A process should be developed and implemented to verify that contractors comply with OH&S requirements while on site	<i>Alberta Occupational Health and Safety Act</i>

ENVIRONMENTAL MANAGEMENT	
ITEM	REFERENCE
The EMS must include all elements of a standard EMS, including procedures for identifying environmental aspects and means to address the aspects.	<i>ARMA's Waste Electronics Incentive Program Criteria</i>
The EMS must be implemented such that all employees are familiar with the EMS, and aware of their responsibilities with respect to the EMS	<i>ARMA's Waste Electronics Incentive Program Criteria</i>

OPERATIONS, SUB-CONTRACTORS, AND MAINTENANCE	
ITEM	REFERENCE
Waste count summaries (i.e. quantities of each type of eligible product) were not available	<i>ARMA's Waste Electronics Incentive Program Criteria</i>
Scaling (weighing) of eWaste at the collector's site is not always done, as not all facilities are equipped with scales. Bin weights can vary substantially and, therefore, cannot be accurately estimated	<i>ARMA's Waste Electronics Incentive Program Criteria</i>
The Registered Processor has not formally checked with the downstream processing companies to confirm that they do not use prison labour	<i>ARMA's Waste Electronics Incentive Program Criteria</i>
No files/documentation regarding transporters and downstream processors were available from one of the Registered Processors at the time of the audit/site visit	<i>ARMA's Waste Electronics Incentive Program Criteria</i>

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3.0 Stantec Quality Management Program

This report, entitled "**Alberta Recycling Management Authority, Waste Electronics Incentive Program for Collectors and Processors - Summary of Audit and Review Activities; November 2005**" was produced by the following individual(s):



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FIGURES

Figure 1: Audit and Review Process -- Generic Timeline in respect of a given Registered Processor

Activity	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18
Conduct Applicant Evaluation and Initial Assessment and submit report to ARMA	█	█																
Review by ARMA of Applicant Evaluation and Initial Assessment report and decision by ARMA whether to register applicant under the Program*			█															
Conduct waste tracking reviews and submit reports to ARMA								█				█					█	
Conduct processor program audit						█												█
Submit processor program audit report							█											
ARMA review of processor program audit report								█										
Submit letter to Registered Processor regarding deficiencies arising from processor program audit									█									
Registered Processor response to deficiency letter (14 days after receipt of letter)										█								
Follow up inspections (if possible, in conjunction with downstream processor review and/or waste tracking review)												█						
Conduct downstream processor review												█						█
Submit downstream processor review report													█					
ARMA review of downstream processor review report														█				
Follow up regarding issues arising from downstream processor reviews															█	█		

*For the purpose of this generic timeline, it is assumed that the applicant is registered and begins operations at the beginning of Month 3.