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May 17, 2018 File No. 17-1582-001

Environmental Approvals Branch
Manitoba Sustainable Development
1007 Century Street
Winnipeg, Manitoba
R3H 0W4

ATTENTION: Ms. Tracey Braun
Director

RE: Environment Act Proposal
Rakowski Recycling – Final Report

Dear Ms. Braun:

In an email correspondence from Mr. Eshetu Beshada of Manitoba Sustainable Development (MSD) dated March 2, 2018, it was noted that Rakowski Recycling, located at 454 Rue Archibald Street, requires a licence to operate as a Hazardous Waste Receiver for Lead Acid Batteries. The scrap processing and auto wrecking facility (the facility) located at 454 Rue Archibald Street in Winnipeg, Manitoba intends to receive hazardous waste, specifically, Waste Class 8: Corrosives (Lead Acid Batteries), wet, filled with acid (UN2794). All material will be shipped off site to an out of province facility that recycles batteries.

Kontzamanis Graumann Smith MacMillan Inc. (KGS Group) was retained by Rakowski Recycling to prepare and submit an application to MSD for a licence to receive waste Lead Acid Batteries pursuant to *The Dangerous Goods Transportation and Handling Act.* On April 18, 2018, on behalf of Rakowski Recycling, KGS Group submitted a *Dangerous Goods Handling and Transportation Act* Application Form to MSD to obtain a licence to receive Lead Acid Batteries. As part of the licensing process, a $250.00 application fee was included as well as a copy of the Environment Act Proposal (EAP) prepared for Rakowski Recycling and submitted to MSD for licensing under *The Environment Act*.

Subsequently, Mr. Beshada requested that a brief proposal specifically describing the receipt, handling and transportation of Lead Acid Batteries be submitted. The following report is submitted to address the request as an addendum to the application form previously submitted to MSD.

1.0 INTRODUCTION

Rakowski Recycling at 454 Rue Archibald Street primarily purchases materials containing ferrous and non-ferrous metals from the general public and commercial/industrial sources. Non-metal components are removed and the metals are sorted, sized, packaged and then shipped away for further processing.

Recently, the facility has been increasing the volume of Lead Acid Batteries that are received, palletized, and shipped out for processing. This report focuses on the hazardous waste received by the operation, specifically waste Lead Acid Batteries.

2.0 EXISTING LAND USE

Rakowski Recycling is located on a property having legal description Lot 1 Block I Plan 20930 and is zoned M2 Industrial District. The facility includes an office and scrap processing building with a truck drive-thru entrance and scale and a scrap metal processing and automobile wrecking yard. The main customer entrance, shipping/receiving and storage areas are accessed from Rue Archibald Street on the southwest side of the facility (Appendix A). The facility yard and surrounding area is generally flat and at a similar grade to the adjoining properties. Most of the surfaces around the facility are gravel covered.

The facility is operated under a City of Winnipeg Conditional Use Order dated January 17, 2007. The Conditional Use Order was issued under Winnipeg Zoning By-law 6400/94 to permit Recycling Materials Sorting, Baling or Other Processing use. A 12 foot high tin fence provides a visual barrier to traffic and area residents; a requirement of the Conditional Use Order.

3.0 DESCRIPTION OF THE DEVELOPMENT

The facility primarily purchases ferrous metals (carbon steel, alloy steel, wrought iron, and cast iron from old cars, household appliances, steel beams, railroad tracks, etc.) and non-ferrous metals (aluminum, copper, brass, lead, nickel, titanium, etc.) from the general public and commercial/industrial sources. The material is sorted, sized, packaged and then shipped out for refining. Hazardous materials are produced by the facility as a by-product of automobile processing and the facility is registered with MSD as a Hazardous Waste Generator in accordance with the Manitoba Hazardous Waste Regulation (M.R. 195/2015). The facility has been assigned Registration Number MBG14105 (Appendix B). In 2017, the facility accepted, palletized, and shipped 101,707 kg of Lead Acid Batteries and it is estimated that the facility could receive, package and ship as much as 600,000 kg per year. The Receiver Number for the processing facility is A220129.

3.1 FACILITY OPERATION

The facility's summer hours of operation are Monday to Saturday, 7:00am to 5:00pm and in the winter the hours of operation are Monday to Friday 8:00am to 4:30pm and Saturdays 8:00am to 1:00pm. The facility is closed on Sundays.

3.2 SAFETY EQUIPMENT

The company is certified under the Manitoba Certificate of Recognition program and the proponent strives to ensure that all employees are provided with, and understand the requirements and importance of Personal Protective Equipment (PPE) for their safety and health while on the job. All PPE is Canadian Standards Association (CSA) approved and/or meets the standards established for PPE as prescribed in the Workplace Safety and Health Regulation (MR 217/2006). As PPE is recognized to be the least effective method and last resort when controlling hazards in the workplace, the proponent implements all other possible controls wherever reasonable and practicable. Employees are required to provide and wear CSA approved safety footwear at a minimum and other PPE for specific jobs is provided by the

company as required. PPE required when handling Lead Acid Batteries is described in the Safe Work Procedure for Handling Lead Acid Batteries (Appendix C).

Employees are trained in First Aid Cardio-Pulmonary Respiration (CPR) and copies of a First Aid and CPR Manual and *The Workplace Safety and Health Act* and Regulation are kept on site. Material Safety Data Sheets (MSDS) are also available to employees at the facility's safety corner. The MSDS for Lead Acid Batteries is included in Appendix D.

3.3 LEAD ACID BATTERIES

Lead acid batteries are a relatively new and growing part of the proponent's business. Two years ago the facility would only handle 3 to 4 pallets of batteries at any given time on site, however, the quantity collected at the facility is steadily increasing and the facility now accumulates full truckloads of 15 to 20 pallets (± 23,000 kg) at the site prior to shipping them to a processor.

Lead Acid Batteries are brought to the facility by public and commercial companies where employees inspect their condition and place them on pallets. Batteries displaying damage, leakage or contamination are refused. Cardboard is placed between layers of batteries to prevent the possibility of a short circuit. When a pallet is full, it is plastic-wrapped and stored in the yard for future shipping. The duration of storage is dependent of the quantity of batteries on site as the facility typically ships the batteries when there is sufficient quantity to fill a trailer. Protective measures for handling and storing batteries include a safe work procedure which indicates requirements for PPE and that an acid spill kit be available at the facility.

The Dangerous Goods Handling and Transportation Act, Hazardous Waste Regulation (M.R. 195/2015) requires that carriers of Lead Acid Batteries in excess of 205 kg must be licenced. Rakowski Cartage and Wrecking (775 Plinguet Street, Winnipeg) transports the Lead Acid Batteries to the processor under licence MBC0068 (Appendix E).

3.4 OTHER HAZARDOUS MATERIALS

Aside from Lead Acid Batteries, other hazardous materials produced by the facility are predominantly the by-products of automobile processing including: oil and lubricants; antifreeze; lead; tires; and windshield washer fluid. The facility does not accept certain types of hazardous materials. The following list is a sample of some of the materials not accepted by the proponent and is not exhaustive.

- Asbestos containing materials such as pipe insulation and surfacing material commonly found on I-beams, tanks, and other structural and demolition debris;
- Hazardous waste as defined by any applicable federal, provincial or local legal requirement;
- Barrels, drums, or other containers that contain any residual materials;
- Aerosol, pressurized or closed containers;
- Materials containing mercury;
- Items that contain or that have contained polychlorinated biphenyl (PCB);
- Paint cans or other paint containers; and
- Radioactive materials of any kind.

4.0 STATEMENT OF LIMITATIONS AND CONDITIONS

4.1 THIRD PARTY USE OF REPORT

This report has been prepared for Rakowski Recycling and any use a third party makes of this report or any reliance on or decisions made based on it, are the responsibility of such third parties. KGS Group accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions undertaken based on this report.

Please do not hesitate to contact the undersigned if you have any questions or require additional information.

Prepared By:

Gene Senior, M.A.
Environmental Scientist

Reviewed By:

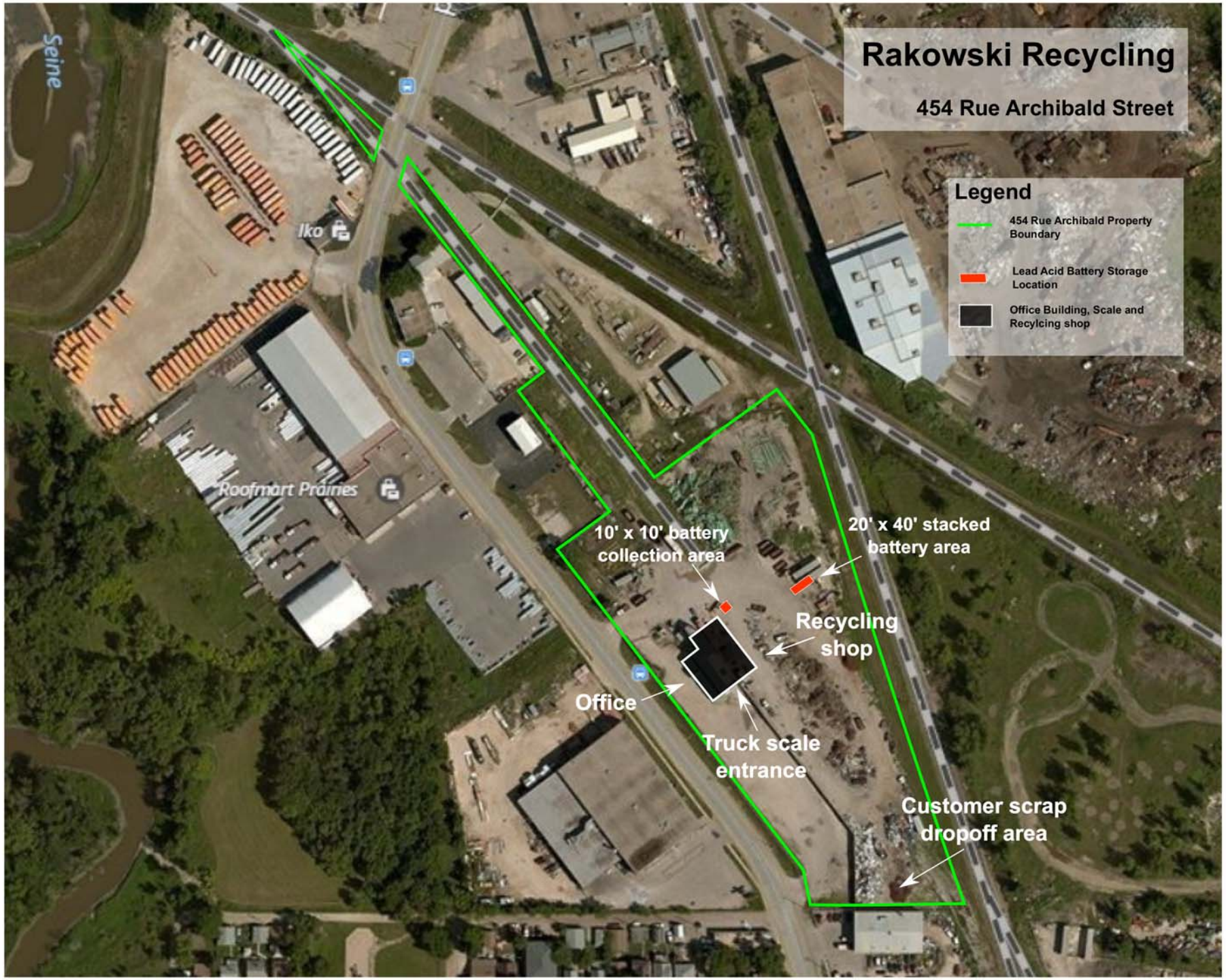
Shaun Moffatt, M.Sc.
Senior Environmental Scientist

GS/jr
Attachments

cc: Yanek Rakowski
Gord Siebert

APPENDIX A

SITE LAYOUT


Rakowski Recycling
454 Rue Archibald Street
Legend
454 Rue Archibald Property Boundary
Lead Acid Battery Storage Location
Office Building, Scale and Recylcing shop
Seine
Iko
Roofmart Prairies
10' x 10' battery collection area
20' x 40' stacked battery area
Recycling shop
Office
Truck scale entrance
Customer scrap dropoff area

APPENDIX B

MANITOBA HAZARDOUS WASTE GENERATOR REGISTRATION PERMIT

Manitoba

Sustainable Development
Environmental Stewardship
Environmental Approvals

Hazardous Waste Program

1007 Century St
Winnipeg MB, R3H 0W4

Acknowledgement of Receipt for Hazardous Waste Registration Form

This document will acknowledge receipt of the hazardous waste registration form submitted to Manitoba Sustainable Development by the following waste consignor (generator):

Company:	Rakowski Cartage and Wreaking
Attention:	Mark Cloutier Manager of Transportation
Mailing Address:	775 Plinguet Street Winnipeg, MB R2J 0G3
Date Received:	August 11th 2017
New / Amended / Update:	New
Generation Site:	454 Archibald St Winnipeg MB

The Hazardous Waste Generator Registration Number (Provincial ID No.) assigned to the above noted generation site is as follows:

MBG14105

In accordance with Manitoba Regulation 195/2015 (*Hazardous Waste Regulation*) pursuant to *The Dangerous Goods Handling and Transportation Act*, Manitoba Sustainable Development must be notified in writing, to the above address, when there are any changes or additions to the information recorded on your registration form.

This document and the attached copy of the registration form should be retained in your files and provided to an inspector on request.

Date: August 18th 2017

Raj Rathamano
Environment Officer
Phone: (204)945-7086
Fax: (204) 948-2338

RR/cb
Enclosure

APPENDIX C

SAFE WORK PROCEDURE FOR HANDLING LEAD ACID BATTERIES

RAKOWSKI CARTAGE & WRECKING

Task: Handling Lead Acid Batteries

Edited by: Barry Thomson		Date Created: March 14, 2014	Last revision date: Dec-7-17
Hazards Present: • Chemical contamination • Inhalation • Explosion	**Personal Protective Equipment or Devices may be Required:** • Safety Boots • Work Gloves (Leather/Rubber) • Eye Protection (glasses/goggles/face shield) • Hard Hat • Apron • Half mask respirator	**Additional Training Requirements:** • Care and use of half mask respirators • Safety Data Sheet (SDS)	

Safe Work Procedure

Lead Acid Batteries are capable of delivering an electric charge at a very high rate. Gases released when charging batteries – hydrogen and oxygen can result in an explosion.

The acid used as an electrolyte in batteries is also very corrosive and can cause injuries if it comes into unprotected contact with workers.

Electrolyte that has been spilled can cause significant damage to property and the environment.

Risk Control Measures:

Safe Handling and Storage

- Store batteries in a cool, well ventilated area away from ignition sources (e.g. welding, smoking).
- If the battery case is broken, avoid contact with internal components
- Do not handle batteries near heat, sparks or open flames
- Protect containers from physical damage to avoid leaks and spills
- Do not allow conductive material to touch battery terminals. A dangerous short circuit may occur and cause battery failure and fire. If installed batteries are at risk of metal tools or other conductive materials touching terminals, then the terminals should be insulated
- Tools or cables should not be placed on batteries or in an area where they can fall onto the terminals
- When working on batteries, workers **MUST NOT** wear items of jewellery (e.g. watches, rings) as they may short out the terminals
- Ensure correct terminals are used
- Use an appropriate strap or cradle to carry batteries
- Get your body as close to as possible to the battery before lifting or lowering
- Bend your knees slightly before lifting or lowering battery
- Do not twist; first lift the battery and then move your feet to move the battery
- Watch for slippery floors and obstructions as you move

If Electrolyte is Spilled You Should

- Rinse/shower in water, if electrolyte comes into contact with any part of the body or contact is suspected
- Contain the spill with sand or earth
- Remove the sand or earth once it has soaked up the acid/electrolyte
- Wash the area to neutralize/decontaminate residue
- Safely dispose of any contaminated material

Personal Protective Equipment (PPE)

- *Rubber gloves and coveralls or protective apron to be worn if the battery is cracked or otherwise damaged*
- *Safety goggles or a face shield to be worn working on damaged batteries or when charging*
- *A respirator may be required if exposed to fugitive gases*

Guidance Documents/Standards/Applicable Legislation:	NOTE: This task will be monitored periodically to ensure compliance and safety
• Manitoba Workplace Safety and Health Regulation Part 36 • Use care and maintenance of half face respirators	

APPENDIX D

MATERIAL SAFETY DATA SHEET FOR LEAD ACID BATTERIES

MATERIAL SAFETY DATA SHEET
LEAD ACID BATTERY WET, FILLED WITH ACID
(US, CN, EU Version for International Trade)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Lead Acid Battery Wet, Filled With Acid**
OTHER PRODUCT NAMES: Electric Storage Battery, SLI or Industrial Battery, UN2794

MANUFACTURER: East Penn Manufacturing Company, Inc.
DIVISION: Deka Road
ADDRESS: Lyon Station, PA 19536 USA

EMERGENCY TELEPHONE NUMBERS:
US: CHEMTREC 1-800-424-9300
CN: CHEMTREC 1-800-424-9300
Outside US: 1-703-527-3887

NON-EMERGENCY HEALTH/SAFETY INFORMATION: 1-610-682-6361

CHEMICAL FAMILY: This product is a wet lead acid storage battery. May also include gel/absorbed electrolyte type lead acid battery types.

PRODUCT USE: Industrial/Commercial electrical storage batteries.

This product is considered a Hazardous Substance, Preparation or Article that is regulated under US-OSHA; CAN-WHMIS; IOSH; ISO; UK-CHIP; or EU Directives (67/548/EEC-Dangerous Substance Labelling, 98/24/EC-Chemical Agents at Work, 99/45/EC-Preparation Labelling, 2001/58/EC-MSDS Content, and 1907/2006/EC-REACH), and an MSDS/SDS is required for this product considering that when used as recommended or intended, or under ordinary conditions, it may present a health and safety exposure or other hazard.

Additional Information
This product may not be compatible with all environments, such as those containing liquid solvents or extreme temperature or pressure. Please request information if considering use under extreme conditions or use beyond current product labelling.

SECTION 2: HAZARDS IDENTIFICATION

GHS Classification:

Health	Environmental	Physical
Acute Toxicity – Not listed (NL) Eye Corrosion – Corrosive* Skin Corrosion – Corrosive* Skin Sensitization – NL Mutagenicity/Carcinogenicity – NL Reproductive/Developmental – NL Target Organ Toxicity (Repeated) – NL	Aquatic Toxicity – NL	NFPA – Flammable gas, hydrogen (during charging) CN - NL EU - NL

*as sulfuric acid

GHS Label: Lead Acid Battery, Wet

Symbols: C (Corrosive)

Hazard Statements	**Precautionary Statements**
Contact with internal components may cause irritation of severe burns. Irritating to eyes, respiratory system, and skin.	Keep out of reach of children. Keep containers tightly closed. Avoid heat, sparks, and open flame while charging batteries. Avoid contact with internal acid.

EMERGENCY OVERVIEW: May form explosive air/gas mixture during charging. Contact with internal components may cause irritation or severe burns. Irritating to eyes, respiratory system, and skin. Prolonged

inhalation or ingestion may result in serious damage to health. Pregnant women exposed to internal components may experience reproductive/developmental effects.

POTENTIAL HEALTH EFFECTS:

EYES: Direct contact of internal electrolyte liquid with eyes may cause severe burns or blindness.

SKIN: Direct contact of internal electrolyte liquid with the skin may cause skin irritation or damaging burns.

INGESTION: Swallowing this product may cause severe burns to the esophagus and digestive tract and harmful or fatal lead poisoning. Lead ingestion may cause nausea, vomiting, weight loss, abdominal spasms, fatigue, and pain in the arms, legs and joints.

INHALATION: Respiratory tract irritation and possible long-term effects.

ACUTE HEALTH HAZARDS:

Repeated or prolonged contact may cause mild skin irritation.

CHRONIC HEALTH HAZARDS:

Lead poisoning if persons are exposed to internal components of the batteries. Lead absorption may cause nausea, vomiting, weight loss, abdominal spasms, fatigue, and pain in the arms, legs and joints. Other effects may include central nervous system damage, kidney dysfunction, and potential reproductive effects. Chronic inhalation of sulfuric acid mist may increase the risk of lung cancer.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Respiratory and skin diseases may predispose the user to acute and chronic effects of sulfuric acid and/or lead. Children and pregnant women must be protected from lead exposure. Persons with kidney disease may be at increased risk of kidney failure.

Additional Information

No health effects are expected related to normal use of this product as sold.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS (Chemical/Common Names):	CAS No.:	% by Wt:	EC No.:
Lead, inorganic	7439-92-1	43–70 (average: 65)	231-100-4
Sulfuric acid	7664-93-9	20–44 (average: 25)	231-639-5
Antimony	7440-36-0	0-–4 (average: 1)	231-146-5
Arsenic	7440-38-2	<0.01	231-148-6
Polypropylene	9003-07-0	5–10 (average: 8)	NA

NA: Not applicable; ND: Not determined

Additional Information

These ingredients reflect components of the finished product related to performance of the product as distributed into commerce.

SECTION 4: FIRST AID MEASURES

EYE CONTACT: Flush eyes with large amounts of water for at least 15 minutes. Seek immediate medical attention if eyes have been exposed directly to acid.

SKIN CONTACT: Flush affected area(s) with large amounts of water using deluge emergency shower, if available, shower for at least 15 minutes. Remove contaminated clothing. If symptoms persist, seek medical attention.

INGESTION: If swallowed, give large amounts of water. Do NOT induce vomiting or aspiration into the lungs may occur and can cause permanent injury or death.

INHALATION: If breathing difficulties develop, remove person to fresh air. If symptoms persist, seek medical attention.

SECTION 5: FIRE-FIGHTING MEASURES

SUITABLE/UNSUITABLE EXTINGUISHING MEDIA:

Dry chemical, carbon dioxide, water, foam. Do not use water on live electrical circuits.

SPECIAL FIREFIGHTING PROCEDURES & PROTECTIVE EQUIPMENT:
Use appropriate media for surrounding fire. Do not use carbon dioxide directly on cells. Avoid breathing vapours. Use full protective equipment (bunker gear) and self-contained breathing apparatus.
UNUSUAL FIRE AND EXPLOSION HAZARDS:
Batteries evolve flammable hydrogen gas during charging and may increase fire risk in poorly ventilated areas near sparks, excessive heat or open flames.
SPECIFIC HAZARDS IN CASE OF FIRE:
Thermal shock may cause battery case to crack open. Containers may explode when heated.

Additional Information
Firefighting water runoff and dilution water may be toxic and corrosive and may cause adverse environmental impacts.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:
Avoid Contact with Skin. Neutralize any spilled electrolyte with neutralizing agents, such as soda ash, sodium bicarbonate, or very dilute sodium hydroxide solutions.
ENVIRONMENTAL PRECAUTIONS:
Prevent spilled material from entering sewers and waterways.
SPILL CONTAINMENT & CLEANUP METHODS/MATERIALS:
Add neutralizer/absorbent to spill area. Sweep or shovel spilled material and absorbent and place in approved container. Dispose of any non-recyclable materials in accordance with local, state, provincial or federal regulations.

Additional Information
Lead acid batteries and their plastic cases are recyclable. Contact your East Penn representative for recycling information.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING AND STORAGE:
- Keep containers tightly closed when not in use.
- If battery case is broken, avoid contact with internal components.
- Do not handle near heat, sparks, or open flames.
- Protect containers from physical damage to avoid leaks and spills.
- Place cardboard between layers of stacked batteries to avoid damage and short circuits.
- Do not allow conductive material to touch the battery terminals. A dangerous short-circuit may occur and cause battery failure and fire.

OTHER PRECAUTIONS (e.g.; Incompatibilities):
Keep away from combustible materials, organic chemicals, reducing substances, metals, strong oxidizers and water.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS/SYSTEM DESIGN INFORMATION:
Charge in areas with adequate ventilation.
VENTILATION:
General dilution ventilation is acceptable.
RESPIRATORY PROTECTION:
Not required for normal conditions of use. See also special firefighting procedures (Section 5).
EYE PROTECTION:
Wear protective glasses with side shields or goggles.
SKIN PROTECTION:
Wear chemical resistant gloves as a standard procedure to prevent skin contact.
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Chemically impervious apron and face shield recommended when adding water or electrolyte to batteries.
Wash Hands after handling.
EXPOSURE GUIDELINES & LIMITS:

MATERIAL SAFETY DATA SHEET
LEAD ACID BATTERY WET, FILLED WITH ACID
(US, CN, EU Version for International Trade)

EXPOSURE GUIDELINES & LIMITS:

OSHA	Permissible Exposure Limit (PEL/TWA)	Lead, inorganic (as Pb)	0.05 mg/m^3	
		Sulfuric acid	1.00 mg/m^3	
		Antimony	0.50 mg/m^3	
		Arsenic	0.01 mg/m^3	
ACGIH	2007 Threshold Limit Value (TLV)	Lead, inorganic (as Pb)	0.05 mg/m^3	
		Sulfuric acid	0.20 mg/m^3	
		Antimony	0.50 mg/m^3	
		Arsenic	0.01 mg/m^3	
Quebec	Permissible Exposure Value (PEV)	Lead, inorganic (as Pb)	0.15 mg/m^3	
		Sulfuric acid	1.00 mg/m^3	TWA
			3.00 mg/m^3	STEV
		Antimony	0.50 mg/m^3	
		Arsenic	0.10 mg/m^3	
Ontario	Occupational Exposure Level (OEL)	Lead (designated substance)	0.10 mg/m^3	
		Sulfuric acid	1.00 mg/m^3	TWAEV
			3.00 mg/m^3	STEV
		Antimony	0.50 mg/m^3	
		Arsenic (designated substance)	0.01 mg/m^3	
Netherlands	Maximaal Aanvaarde Concentratie (MAC)	Lead, inorganic (as Pb)	0.15 mg/m^3	
		Sulfuric acid	1.00 mg/m^3	
Germany	Maximale Arbeitsplatzkonzentrationen (MAK)	Lead, inorganic (as Pb)	0.10 mg/m^3	
		Sulfuric acid	1.00 mg/m^3	TWA
			2.00 mg/m^3	STEL
		Antimony	0.50 mg/m^3	
United Kingdom	Occupational Exposure Standard (OES)	Lead	0.15 mg/m^3	
		Antimony	0.50 mg/m^3	
		Arsenic	0.10 mg/m^3	

TWA: 8-Hour Time-Weighted Average; STE: Short-Term Exposure; mg/m^3: milligrams per cubic meter of air; NE: Not Established; STEV: Short-Term Exposure Value; TWAEV: Time-Weighted Average Exposure Value; STEL: Short-Term Exposure Limit

Additional Information

- Batteries are housed in polypropylene cases which are regulated as total dust or respirable dust only when they are ground up during recycling. The OSHA PEL for dust is 15 mg/m^3 as total dust or 5 mg/m^3 as respirable dust.
- May be required to meet Domestic Requirements for a Specific Destination(s).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Industrial/commercial lead acid battery
ODOUR:	Odourless
ODOUR THRESHOLD:	NA
PHYSICAL STATE:	Sulfuric Acid: Liquid; Lead: solid
pH:	<1
BOILING POINT:	235-240° F (113-116° C) (as sulfuric acid)
MELTING POINT:	NA
FREEZING POINT:	NA
VAPOUR PRESSURE:	10 mmHg
VAPOUR DENSITY (AIR = 1):	> 1
SPECIFIC GRAVITY (H_2O = 1):	1.27–1.33
EVAPORATION RATE (n-BuAc=1):	< 1
SOLUBILITY IN WATER:	100% (as sulfuric acid)
FLASH POINT:	Below room temperature (as hydrogen gas)
AUTO-IGNITION TEMPERATURE:	NA
LOWER EXPLOSIVE LIMIT (LEL):	4% (as hydrogen gas)
UPPER EXPLOSIVE LIMIT (UEL):	74% (as hydrogen gas)

MATERIAL SAFETY DATA SHEET
LEAD ACID BATTERY WET, FILLED WITH ACID
(US, CN, EU Version for International Trade)

PARTITION COEFFICIENT: NA
VISCOSITY (poise @ 25° C): Not Available
DECOMPOSITION TEMPERATURE: Not Available

FLAMMABILITY/HMIS HAZARD CLASSIFICATIONS (US/CN/EU): As sulfuric acid
HEALTH: 3 FLAMMABILITY: 0 REACTIVITY: 2

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	This product is stable under normal conditions at ambient temperature.
INCOMPATIBILITY (MATERIAL TO AVOID):	Strong bases, combustible organic materials, reducing agents, finely divided metals, strong oxidizers, and water.
HAZARDOUS DECOMPOSITION BY-PRODUCTS:	Thermal decomposition will produce sulfur dioxide, sulfur trioxide, carbon monoxide, sulfuric acid mist, and hydrogen.
HAZARDOUS POLYMERIZATION:	Will not occur
CONDITIONS TO AVOID:	Overcharging, sources of ignition

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY (Test Results Basis and Comments):
Sulfuric acid: LD50, Rat: 2140 mg/kg
LC50, Guinea pig: 510 mg/m^3
Lead: No data available for elemental lead

SUBCHRONIC/CHRONIC TOXICITY (Test Results and Comments):
Repeated exposure to lead and lead compounds in the workplace may result in nervous system toxicity. Some toxicologists report abnormal conduction velocities in persons with blood lead levels of 50 µg/100 ml or higher. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.

Additional Information
- Very little chronic toxicity data available for elemental lead.
- Lead is listed by IARC as a 2B carcinogen: possible carcinogen in humans. Arsenic is listed by IARC, ACGIH, and NTP as a carcinogen, based on studies with high doses over long periods of time. The other ingredients in this product, present at equal to or greater than 0,1% of the product, are not listed by OSHA, NTP, or IARC as suspect carcinogens.
- The 19th Amendment to EC Directive 67/548/EEC classified lead compounds, but not lead in metal form, as possibly toxic to reproduction. Risk phrase 61: May cause harm to the unborn child, applies to lead compounds, especially soluble forms.

SECTION 12: ECOLOGICAL INFORMATION

PERSISTENCE & DEGRADABILITY:
Lead is very persistent in soils and sediments. No data available on biodegradation.

BIOACCUMULATIVE POTENTIAL (Including Mobility):
Mobility of metallic lead between ecological compartments is low. Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants, but very little bioaccumulation occurs through the food chain. Most studies have included lead compounds, not solid inorganic lead.

AQUATIC TOXICITY (Test Results & Comments):
Sulfuric acid: 24-hour LC50, fresh water fish *(Brachydanio rerio)*: 82 mg/l
96-hour LOEC, fresh water fish *(Cyprinus carpio)*: 22 mg/l (lowest observable effect concentration)
Lead (metal): No data available

Additional Information
- No known effects on stratospheric ozone depletion.
- Volatile organic compounds: 0% (by Volume)
- Water Endangering Class (WGK): NA

SECTION 13: DISPOSAL CONSIDERATIONS

MATERIAL SAFETY DATA SHEET
LEAD ACID BATTERY WET, FILLED WITH ACID
(US, CN, EU Version for International Trade)

WASTE DISPOSAL METHOD:	Following local, State/Provincial, and Federal/National regulations applicable to end-of-life characteristics will be the responsibility of the end-user.
HAZARDOUS WASTE CLASS/CODE:	US - Not applicable to finished product as manufactured for distribution into commerce. CN – Not applicable to finished product as manufactured for distribution into commerce. EWC – Not applicable to finished product as manufactured for distribution into commerce.

Additional Information
Not Included – **Recycle** or dispose as allowed by local jurisdiction for the end-of-life characteristics as-disposed.

SECTION 14: TRANSPORT INFORMATION

GROUND – US-DOT/CAN-TDG/EU-ADR/APEC-ADR:

Proper Shipping Name	Batteries, Wet, Filled with Acid		
Hazard Class	8	ID Number	UN2794
Packing Group	III	Labels	Corrosive

AIRCRAFT – ICAO-IATA:

Proper Shipping Name	Batteries, Wet, Filled with Acid		
Hazard Class	8	ID Number	UN2794
Packing Group	II	Labels	Corrosive

Reference IATA packing instructions 800

VESSEL – IMO-IMDG:

Proper Shipping Name	Batteries, Wet, Filled with Acid		
Hazard Class	8	ID Number	UN2794
Packing Group	III	Labels	Corrosive

Reference IMDG packing instructions P801

Additional Information

Transport requires proper packaging and paperwork, including the Nature and Quantity of goods, per applicable origin/destination/customs points as-shipped.

SECTION 15: REGULATORY INFORMATION

INVENTORY STATUS:

All components are listed on the TSCA; EINECS/ELINCS; and DSL, unless noted otherwise below.

U.S. FEDERAL REGULATIONS:

TSCA Section 8b – Inventory Status: All chemicals comprising this product are either exempt or listed on the TSCA Inventory.

TSCA Section 12b – Export Notification: If the finished product contains chemicals subject to TSCA Section 12b export notification, they are listed below:

Chemical	**CAS #**
None	NA

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT)

Chemicals present in the product which could require reporting under the statute:

Chemical	**CAS #**
Lead	7439-92-1
Sulfuric acid	7664-93-9

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

The finished product contains chemicals subject to the reporting requirements of Section 313 of SARA Title III.

Chemical	**CAS #**	**% wt**
Lead	7439-92-1	65
Sulfuric acid	7664-93-9	25

CERCLA SECTION 311/312 HAZARD CATEGORIES: Note that the finished product is exempt from these regulations, but lead and sulfuric acid above the thresholds are reportable on Tier II reports.

Fire Hazard	No
Pressure Hazard	No

Reactivity Hazard	No
Immediate Hazard	Yes (Sulfuric acid is Corrosive)
Delayed Hazard	No

Note: Sulfuric acid is listed as an Extremely Hazardous Substance.

STATE REGULATIONS (US):

California Proposition 65

The following chemicals identified to exist in the finished product as distributed into commerce are known to the State of California to cause cancer, birth defects, or other reproductive harm:

Chemical	CAS #	% Wt
Arsenic (as arsenic oxides)	7440-38-2	<0.1
Strong inorganic acid mists including sulfuric acid	NA	25
Lead	7439-92-1	65

California Consumer Product Volatile Organic Compound Emissions

This Product is not regulated as a Consumer Product for purposes of CARB/OTC VOC Regulations, as-sold for the intended purpose and into the industrial/Commercial supply chain.

INTERNATIONAL REGULATIONS (Non-US):

Canadian Domestic Substance List (DSL)

All ingredients remaining in the finished product as distributed into commerce are included on the Domestic Substances List.

WHMIS Classifications

Class E: Corrosive materials present at greater than 1%

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the Controlled Products Regulations.

NPRI and Ontario Regulation 127/01

This product contains the following chemicals subject to the reporting requirements of Canada NPRI +/or Ont. Reg. 127/01:

Chemical	CAS #	% Wt
Lead	7439-92-1	65
Sulfuric acid	7664-93-9	25

European Inventory of Existing Commercial Chemical Substances (EINECS)

All ingredients remaining in the finished product as distributed into commerce are exempt from, or included on, the European Inventory of Existing Commercial Chemical Substances.

European Communities (EC) Hazard Classification according to directives 67/548/EEC and 1999/45/EC.

R-Phrases	S-Phrases
35, 36, 38	1/2, 26, 30, 45

Additional Information

This product may be subject to Restriction of Hazardous Substances (RoHS) regulations in Europe and China, or may be regulated under additional regulations and laws not identified above, such as for uses other than described or as-designed/as-intended by the manufacturer, or for distribution into specific domestic destinations.

SECTION 16: OTHER INFORMATION

OTHER INFORMATION:

Distribution into Quebec to follow Canadian Controlled Product Regulations (CPR) 24(1) and 24(2).

Distribution into the EU to follow applicable Directives to the Use, Import/Export of the product as-sold.

Sources of Information:

International Agency for Research on Cancer (1987), *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans: Overall Evaluations of Carcinogenicity: An updating of IARC Monographs Volumes 1-42, Supplement 7, Lyon,* France.

Ontario Ministry of Labour Regulation 654/86. Regulations Respecting Exposure to Chemical or Biological Agents.

RTECS – Registry of Toxic Effects of Chemical Substances, National institute for Occupational Safety and Health.

MSDS/SDS PREPARATION INFORMATION:

DATE OF ISSUE: ***29 November 2010*** SUPERCEDES: ***10 July 2010***

DISCLAIMER:

This Material Safety Data Sheet is based upon information and sources available at the time of preparation or revision date.

MATERIAL SAFETY DATA SHEET
LEAD ACID BATTERY WET, FILLED WITH ACID
(US, CN, EU Version for International Trade)

The information in the MSDS was obtained from sources which we believe are reliable, but are beyond our direct supervision or control. We make no Warranty of Merchantability, Fitness for any particular purpose or any other Warranty, Expressed or Implied, with respect to such information and we assume no liability resulting from its use. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. It is the obligation of each user of this product to determine the suitability of this product and comply with the requirements of all applicable laws regarding use and disposal of this product. For additional information concerning East Penn Manufacturing Co., Inc. products or questions concerning the content of this MSDS please contact your East Penn representative.

END

APPENDIX E

DANGEROUS GOODS HANDLING AND TRANSPORTATION ACT LICENCE

THE DANGEROUS GOODS HANDLING and TRANSPORTATION ACT
LOI SUR LA MANUTENTION ET LE TRANSPORT DES MARCHANDISES DANGEREUSES

LICENCE

Manitoba
Sustainable Development

Licence No. / Licence nº MBC 00688

Issue Date / Date de deliverance November 1, 1989
Revised September 19, 2017

In accordance with The Dangerous Goods Handling and Transportation Act (C.C.S.M. c. D12)/ Conformément à la Loi sur la manutention et le transport des marchandises dangereuses (C.P.L.M. c. D12)

THIS LICENCE IS ISSUED TO: / CET LICENCE EST DONNÉ À:

RAKOWSKI CARTAGE AND WRECKING LTD.; "the Licencee"
775 PLINGUET STREET, WINNIPEG, MB R2J 0G3

for the transport of following hazardous waste class/type in the Province of Manitoba in accordance with The Dangerous Goods Handling and Transportation Act and subject to the specifications, limits, terms and conditions specified in this licence:

Waste Class 8: Corrosives (Waste Lead Acid Batteries)
Waste Class 9: Miscellaneous Products, Substances or Organisms (Asbestos Materials) *and*
Provincial Waste Codes: MHW1–Used Oil and **MHW2-Used Oil Filters**
(Provincial Waste Class Code: 252)

DEFINITIONS

"Act" means The Dangerous Goods Handling and Transportation Act, C.C.S.M. c. D 12;

"contaminant" means a contaminant as defined in The Dangerous Goods Handling and Transportation Act (C.C.S.M. c. D12);

"Director" means an employee so designated pursuant to The Dangerous Goods Handling and Transportation Act;

"Environment Officer" means an employee so designated pursuant to The Dangerous Goods Handling and Transportation Act (C.C.S.M. c. D12);

"generator" means any person who, by virtue of ownership, operation, management or control causes or allows to cause the creation or storage of hazardous waste;