WASTE SUMMARY

INDUSTRIAL WASTES IN CORNING, NEW YORK

Purpose

This document is a resource for field personnel to distinguish industrial waste historically produced by former glass manufacturing companies from potentially other waste types encountered in the City of Corning, New York and surrounding area.

This informational packet describes industrial waste material containing ash, brick, and/or glass (ABG) observed in the City of Corning, New York and surrounding area. The packet lists characteristics and variations of ABG wastes. Contaminants of concern primarily include arsenic, cadmium, lead, and semi-volatile organic compounds.

ABG wastes are a concern for NYSDEC and have been identified as a potential human health hazard. A portion of the ABG encountered to date has met the definition of hazardous wastes and if encountered should be presumed to be a hazardous waste until analytical sample results demonstrate otherwise.

If public works departments, utility companies, contractors, or others encounter industrial waste material similar to material described within this informational packet, they should contact NYSDEC immediately. When contacting NYSDEC, please convey approximate locations and volumes of ABG material. Please notify NYSDEC through our engineering consultant, Parsons, using the below contact information:

- Emailing us at StudyArea.Corning@Parsons.com; or
- Calling our hotline at the toll-free number 833-770-1716.

IN SITU WASTE

Characteristics

- Has included ash, brick, and/or glass (ABG).
  - Ash colors include black, gray, orange, and white.
  - Various brick types (red construction brick, white or yellow refractory brick, puzzle piece brick (Picture 1)).
  - Various glass types, colors, and sizes.
- Generally uncompacted and loose.
- ABG has been observed in discrete layers and discontinuous throughout a soil column.
- ABG observed at various depths (from ground surface to over 10 feet below ground surface).
- Excavation areas in the Corning Study Area have sometimes been observed with mixed ash and brick with trace or no glass.
- Generally not odorous.

See Pictures 1, 2, 3, and 4

Picture 1: Primarily ash and brick in a 2-ft excavation.

Picture 2: Excavation heavily impacted with ABG.

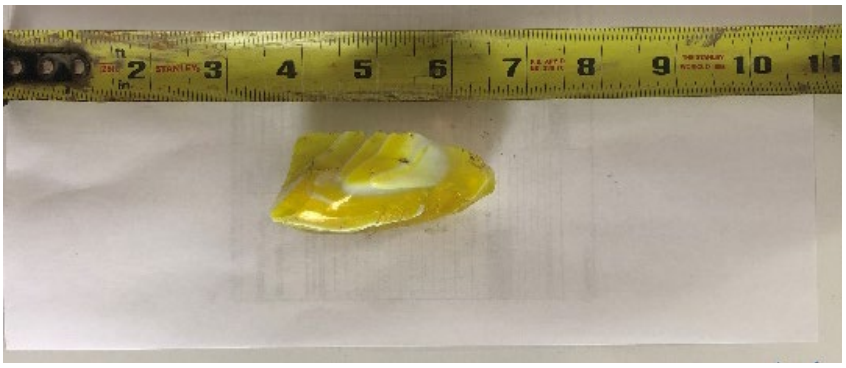
Picture 3: Excavation heavily impacted with ABG.

Picture 4: Test pit excavation heavily impacted with ABG.

GLASS (CULLET)

Characteristics

- Broken, fragmented, or discarded glass indiscernible from a final product.
- Sometimes air bubbles are trapped within glass media.
- Sometimes speckled or fused with other colored glass.



Picture 5: Cullet with layers of yellow and white.

Variations

- Primarily between the size of a penny and a softball but can be as large as a mailbox and as small as fine grains.
- Can be any color or combination of colors. Multi-color layered glass has been observed.
- Opacity can vary (even within the same piece).
- Can be jagged, smooth, and/or porous.
- Density varies; some lead glasses have lead oxide content upwards of 50% by weight.
- Glass may be fused to construction or refractory brick. Glass can encapsulate brick pieces.

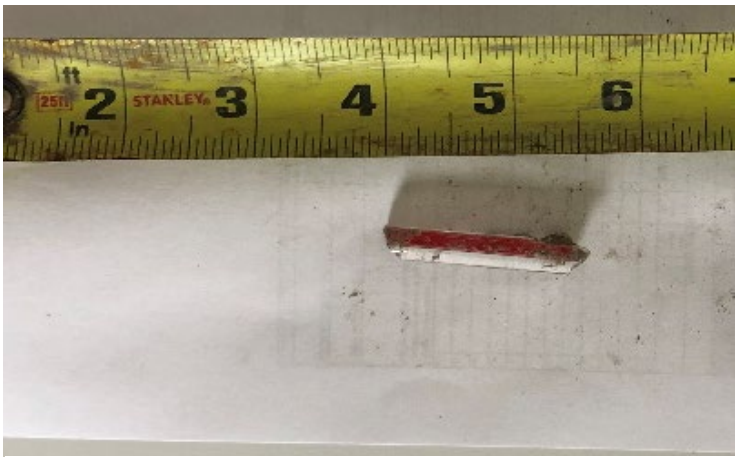
Picture 6: Blue cullet with white specks.

See Pictures 5, 6, and 7

Picture 7: Clear spaghetti-shaped cullet.

THERMOMETER TUBING

Characteristics



Picture 8: Piece of thermometer tubing with red and white strips.

- Tubing is generally smaller than 1 inch diameter. Lengths of up to 1.5 feet have been observed.
- Clear glass makes up majority of the tubing; colored glass is encased within the clear glass and extends along the length of the piece.
- Most pieces have a hollow center (called a bore) extending the length of the tubing.
  - A visible bore is a manufacturing defect. The bore is not supposed to be visible to the naked eye.

Variations

- Observed cross-section shapes include triangular, circular, and irregular.
- Encased colored glass is usually white, red, orange, and/or yellow but can be black, green, or blue.

See Pictures 8 and 9


Picture 9: Most thermometer tubing fragments have strips of white and red glass encased in clear glass. One piece has an orange strip (top left). One piece has only a white strip (bottom right).

HOLLOW GLASS TUBING

Characteristics

- Hollow glass tubing with at least one open end.
- Generally straight with lengths from 2 inches to 12 inches.

Variations

- Various inner and outer diameters, from less than 1 millimeter to greater than 1 inch.
- Diameter can vary for an individual piece.
- Primarily clear and transparent but can be blue, orange, yellow, green, and red. Opacity varies.

See Pictures 10 and 11

Picture 10: Collection of hollow tubing.

Picture 11: Hollow tubing fragment.

GLASS FILTER RODS

Characteristics

- Unique shape with embossing “Cory Filter Rod” or “New Cory Rod” and US Patent numbers.
- Pieces usually have one broken end (side with rounded bulb shape).
- Clear or reddish-brown color.
- The center cross section is circular and rounded-square.

See Pictures 12 and 13

Picture 12: Reddish-brown Cory Filter Rod fragment.

Picture 13: Clear Cory Filter Rod fragment.

PYREX AND TRADEMARKED PRODUCTS

Characteristics

- Unique embossed or engraved logo.
  - Often just embossed as “PYREX.”
  - Embossing size varies.
- Some glass pieces have patent numbers embossed on them.
- Various manufactured glass products were branded PYREX.
- Other trademarked names include Corningware, Flameware, Nonex, Macor, Multiform, Vycor, Corelle, and Fota-Lite.

See Pictures 14 and 15

Picture 14: Pyrex baby bottle.

Picture 15: Pyrex glass cone.

SIGNAL WARE AND LENSES

Characteristics

- Glass with a light-focusing purpose (e.g., for automobile headlights or lighthouses) or magnifying purpose (e.g., for eyeglasses or cameras).
- Sometimes embossed with trademark names or magnification (e.g., Corning, +1.25).
- Thickness generally less than 2 inches.

Variations

- Shapes include rounded square lenses, circular smooth dual-faced lenses (similar diameter to eyeglasses), circular smooth dual-faced lenses about ½-inch to 2-inch diameter, and circular smooth dual-faced lenses greater than 5 inches diameter.
- Lens face types:
  - Angular or prismatic horizontal grooves or furrows on a concave or convex lens face.
  - Smooth concave, convex, or flat faces.
  - Raised bubble-shape on one or both sides (like plastic bubble wrap).
- Colors include clear, pink, red, yellow, orange, green, blue, violet, or brown.

See Pictures 16, 17, and 18

Picture 16: Blue signal ware embossed with "PYREX."

Picture 17: One orange and two red disk lenses. Each lens is embossed along the rim with "CORNING T. M. REG. U. S. PAT. OFF. MADE IN USA."

Picture 18: Green, light brown, and clear optical and ophthalmic lens blanks of various shapes.

ELECTRICAL WARE

Characteristics

- Intact or recognizable pieces are usually embossed with “PYREX” and patent number.
- Generally clear glass but may be opaque and opalescent.

See Pictures 19, 20, and 21

Picture 19: Insulator (left) and two glass fuses. “PYREX” is embossed on each piece.

Picture 20: Glass radio antenna insulator (left) and insulator (right).

Picture 21: Opalescent insulator with approximately 1-ft diameter.

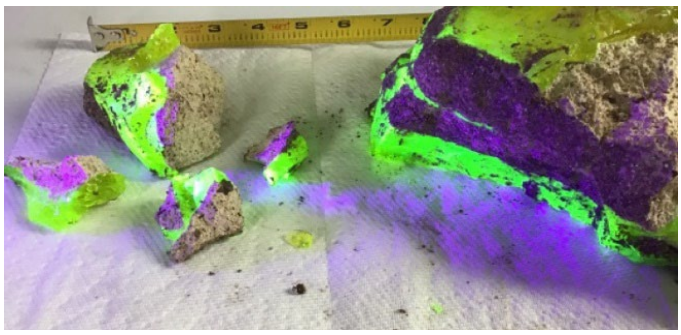
URANIUM GLASS

Characteristics

- Generally colored yellow, yellow-green, or green. Opacity varies.
- Fluoresces green under ultraviolet light.
- Generally observed as cullet (irregular pieces and chunks) but has been observed as hollow tubing.

See Pictures 22, 23, and 24

Picture 23: Uranium glass fused to refractory brick.



Picture 22: The glass fluoresces green under ultraviolet light.

Picture 24: Translucent yellow-green uranium glass collected from an excavation.

IN SITU WASTE (CONTINUED)

See Pictures 25 and 26

Picture 25: Comingled red brick, refractory chunks, and cullet. ABG ejected from animal burrow (circled red).

Picture 26: Comingled black ash and slag (top, along yellow gas line), cullet, refractory pieces, gray ash, and light orange ash.

SUMMARY

The waste types listed above include commonly observed industrial waste materials found in the City of Corning, New York. These waste materials may be brought to the ground surface from humans, other animals, plants, or erosive forces.

- Human Activities:
  - Examples include subsurface excavations, grading, utility clearing, and utility pole removal and installation
- Bioturbation: Reworking of soils and sediments by animals or plants.
  - Examples include burrowing animals and root growth causing subsurface material to come to the surface
- Erosion:
  - Examples include from surface water runoff, streams, rivers, and gravity