The “Excrevator”
Safe and Effective Pit Emptying

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Motivation

• Typical emptying methods are too expensive
• Access to the pits is difficult
• Pits are often emptied manually with shovels or buckets
• Undignified profession
The Excrevator

- Modified power auger
- Hydraulic motor powered by 11HP engine
- Forward/Reverse controls
- Dolly Frame for easy manoeuvring
- Detachable bottom section
Hyderabad, India

- Mostly septic tanks and leach pits
- High variability of sludge
- Minimal sludge in the bottom of tested pits.
Field Testing

Durban, South Africa

- Mostly Dry VIP’s
- Large quantities of trash
- Manual emptying is an efficient enterprise
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Mzuzu, Malawi

- Difficult access into pits
- Significant trash present
- Promising results using the Excrevator
- Two units to be tested in early 2015
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Laboratory Testing

• Testing of several inlet heads to handle trash

• Representative trash used for testing including:
  – Newspaper/magazines
  – Sponges
  – Plastic bags
  – Rope

• Vacuum assist testing
Ongoing Work

Simultaneous Removal

Full Pit with Trash

Multi-Step Process

Excrevator / Macerator

Excrevator / Vacuum

Macerator / Vacuum

Mechanical Trash Removal

PowerCube

Macerator / Vacuum

Manual Trash Removal

Excrevator

Hook / Claw

Mechanical Trash Removal

Excrevator / Macerator

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Excrevator / Vacuum

Macerator / Vacuum

Manual Trash Removal

Excrevator

Hook / Claw

Excrevator / Macerator

Excrevator / Vacuum

Macerator / Vacuum

Mechanical Trash Removal

Excrevator / Macerator

Excrevator / Vacuum

Macerator / Vacuum

Manual Trash Removal

Excrevator

Hook / Claw
Summary

• The Excrevator is an effective pit emptying tool if trash content can be managed

• An assortment of tools are necessary to empty the high variability of existing pits

• Field testing to continue in Malawi in Early 2015

• New field testing locations to be determined
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