# The Status of Sanitation and Faecal Sludge Management in Sol Plaatje Municipality

Municipal Benchmarking Initiative Master Class 2018

Bloemfontein

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# PRESENTATION CONTENT

- Purpose of Presentation
- Introduction and Background
- Focus Areas
- Sludge Management Practice & Approaches in SPLM
- Challenges with On-Site Disposal
- Sludge Management "Good News"
- Conclusion

# PURPOSE OF PRESENTATION

- To share with sector colleagues:
  - Current status of Faecal Sludge Management practice in SPLM.
  - Achievements and Challenges.
  - Possible/Futuristic Opportunities.
- Elicit discussion as a “bench marking” process

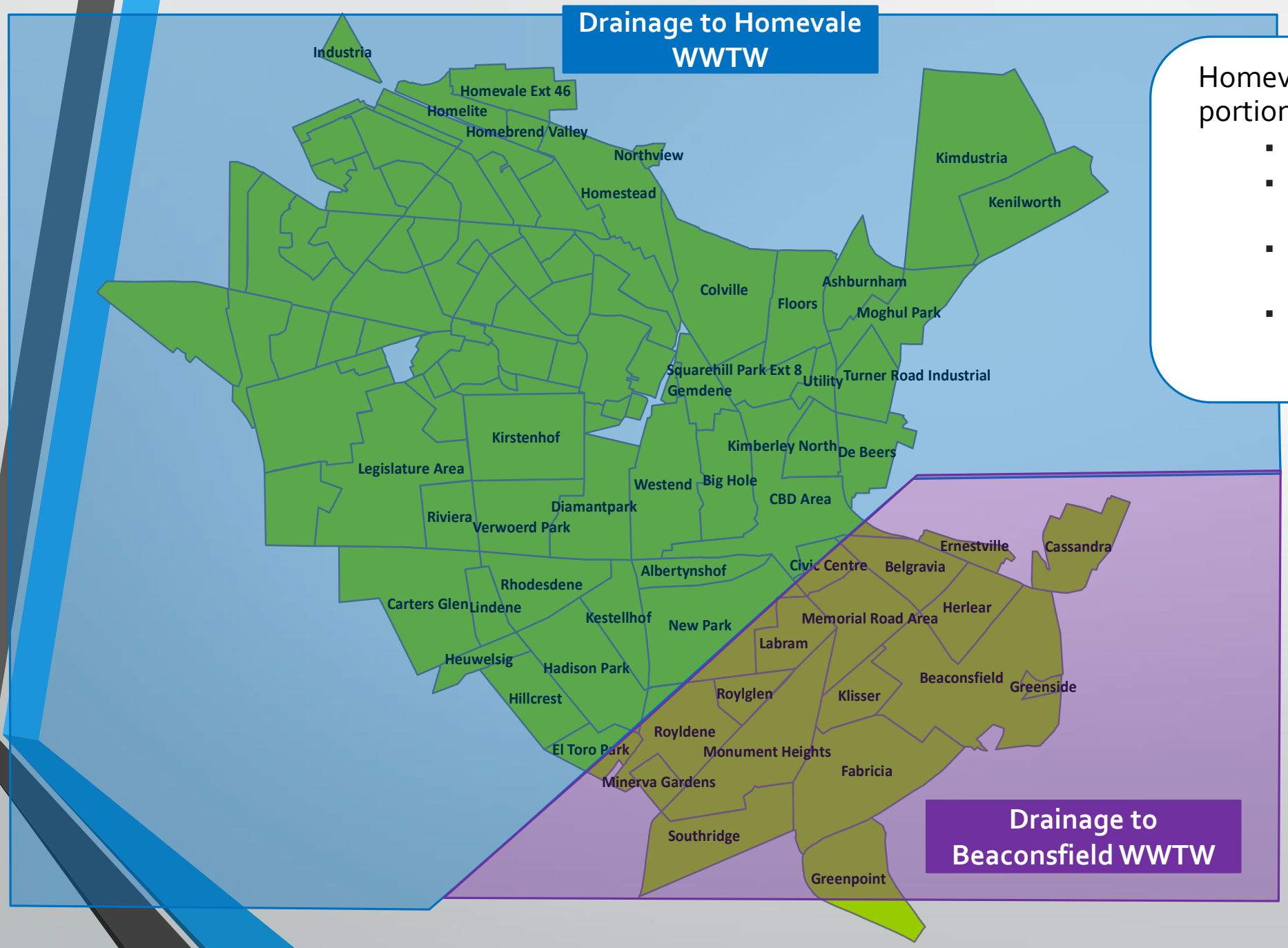
# INTRODUCTION and BACKGROUND

- The Sol Plaatje Local Municipality (SPLM) is located close to the eastern border of the Northern Cape Province and forms part of the Frances Baard District Municipal Area.
- Provincial Administration Head Quarters-Provincial Capital City.
- Sol Plaatje Local Municipality is both WSA and WSP in its area of jurisdiction.
- It owns and operates 2 WPW and 4 WWTW.
- WWT technologies applied are Activated Sludge Process (ASP), Biological Filtration Process (BFP) and Oxidation Pond System (OPS).
- These are both conventional approaches (*meaning there is no advanced treatment applied in either of these)*
- ***Physical Liquid-Solid Phase Separation is applied (PST's & SST's).***
- ***Anaerobic Sludge Digestion is applied as the final "side-stream" solids treatment process****.*

# FOCUS AREAS


SOL PLAATJE MUNICIPALITY
We Serve
BEACONSFIELD
DISPOSAL
Tel: 053 830 6771
Office Hours:
07h45 to 16h30


COMPULSORY PPE
BEYOND THIS POINT
BEWARE !!
HOMEVALE
WASTE WATER
TREATMENT WORKS
We Serve




Homevale WWTW Treats the larger portion of Kimberley's wastewater:

- Approx. 85%
- Balance is treated at Beaconsfield WWTW
- Approx. 1 500 business/institutional/etc.
- No heavy industries, generally.

# Homevale WWTW
# (48 Mℓ/day)

# SLUDGE MANAGEMENT

**Background**:

- Faecal sludge is normally treated (considered) as waste.
- Traditional practices related to wastewater sludge management include:
  - Dedicated land disposal,
  - Waste piling,
  - Landfill disposal and, to a lesser degree,
  - Use in agricultural practices
- For varying reasons, on-site land disposal and waste piling have become the standard management in South Africa.
- With sludge production increasing on a daily basis, these are unsustainable , and
- Management is becoming a problem for many municipalities in South Africa

*(Sludge Guidelines 2009)*

# SLUDGE MANAGEMENT

**Handling Practice in SPLM:**

- Homevale WWTW:
  - Anaerobic Digestion
  - Drying Beds (to be phased out)
  - Mechanical Dewatering, then…..**What?**
- Beaconsfield WWTW:
  - Anaerobic Digestion,
  - Drying beds,
  - Stock Piling, then…..**What?**
  - Land application (parks and gardens)
- Photographs and Video Clips (Feb 2017 & Jan 2018)
  - Feb 2017 Video Clip
  - Jan 2018 Video Clip
  - Reaction Photographs

# On-Site Sludge Disposal

# On-Site Disposal

# CHALLENGES WITH ON-SITE DISPOSAL

**Photographs and Video Clips (Feb 2017 & Jan 2018)**

# CHALLENGES WITH ON-SITE DISPOSAL

**Video Clips (Feb 2017)**

# CHALLENGES WITH ON-SITE DISPOSAL

**Video Clips (Jan 2018)**

# CHALLENGES WITH ON-SITE DISPOSAL

**Photographs (Feb 2017)**

# CHALLENGES WITH ON-SITE DISPOSAL

**Photographs (Jan 2018)**

# SLUDGE MANAGEMENT

**Good News**

- Legislation:
  - NWA
  - NEMA: Waste Management Act
  - Sludge Management Guidelines
  - WUL
  - Green Drop Certification (Best Practice)
- SPLM Achievements:
  - Regular Sludge Classification (bi-annually), see table of "*classification*"
  - Accredited Laboratory Results summary Table
  - Mechanical Dewatering (@ Homevale WWTW),
  - Excellent anaerobic digestion (@ Beaconsfield WWTW)
  - Biogas to Energy Preliminary Assessment.

# SLUDGE ANALYSIS LABORATORY RESULTS

| Classification | Year 1 | Year 2 | Year 3 | Remarks & Recommendations |
|---|---|---|---|---|
| **Microbiology** | 2012 | 2015 | 2017 | This is affected by process operation and treatment efficiency. Sludge suitable for a number of uses, but with caution in agricultural use. |
| Faecal coliform | >B | >B | <A | |
| Helminthic ova | >B | >B | <A | |
| **Stability** | 1 | 1 | 1 | Excellent stability. Suitable for a number of uses with no restrictions. |
| **Pollutants** | | | | Pollutants remains a challenge, and an investigation of source is necessary. |
| Macro | >b | >a | >a | |
| Micro | >b | >a | >a | |
| **Average Class per Year** | **C1c** | **C1b** | **A1b** | Improving quality, but caution to be taken if used in agriculture. |

We Serve

# SLUDGE MANAGEMENT

**Good News:**

- SPLM Achievements:
  - Drying Beds @ Beaconsfield, Photographs: Excellent sludge digestion.

# SLUDGE MANAGEMENT

**Good News:**

- SPLM Achievements:
  - Mechanical Dewatering (@ Homevale WWTW), Photographs

# Homevale Mechanical  Sludge Dewatering Facility

# CONCLUSION

- Generally, basic sludge management is applied in SPLM (*and in most municipalities in RSA*).
- Basic sludge management is not sustainable (consideration of sustainable development), and poses danger and risks to environment and human health.
- Thus a need for advanced and more sustainable management approaches and practices.
- Beneficial use of faecal sludge needs to be taken seriously.
- There are economical opportunities in sustainable sludge management.

# ….The End

# Discussion…?

# Thank You for Your Attention.