

2013

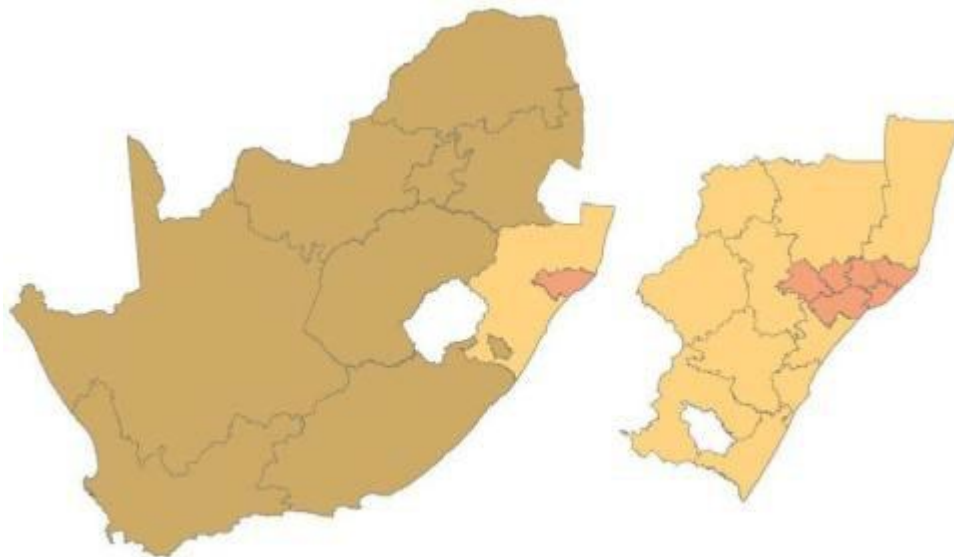


LITHUNGULU



REGIONALISATION OF WASTE SERVICES

MANAGEMENT OF THE REGIONAL LANDFILL SITE IN EMPANGENI



Date: 15 October 2013

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1. INTRODUCTION

- 1.1 Concept of dealing with solid **waste management over larger area**,
- 1.2 By pooling of **municipal resources across political boundaries**,
- 1.3 To maximize the ability **to capture economies of scale that are possible on a larger area**, with a larger population than it is possible in smaller area,
- 1.4 For example, **it might not be possible for a smaller LM to establish a service like a full operated landfill facility**, however by working together with larger LM, where the facility can be easily sited.
- 1.5 The smaller community together with the larger community can **regionalize their efforts, so that they can have common or share** a landfill, transfer station, collection, recycling or composting programme **depending on their budget, public needs, physical limitation and political circumstances**.
- 1.6 The facility may not be a total approach, it **can be a combination or one of the activities**.
- 1.7 The concept has a benefit to decreases costs, etc.

2. BACKGROUND

- 2.1 The uThungulu District Municipality permit number 16/2/7/W1/D1/Z1/P485 was issued on 04 July 2003, in terms of Section 20 of the Environment Conservation Act 73 of 1989.
- 2.2 The waste management licence authorises the permit holder to establish, further develop and operate the waste disposal site as required by the specified conditions.
- 2.3 The waste management permit was amended in Jun 2012 by the Kwa-Zulu Natal Department of Agriculture and Environmental in terms of the provisions of section 54 (1)(e) of the National Environmental Management: Waste Act 59 of 2008, to incorporate the recycling aspects.

3. SITE CLASSIFICATION

- 3.1 The site was classified in terms of the minimum requirement as follows;

Waste type	G	General waste
Size or Volume of disposed waste	M	Medium size of up to 500tonnes/day
Climatic water balance	B+	Significant leachate
The site accepts building rubble, street sweeping, green, domestic, commercial and normal industrial waste only. Excludes hazardous and medical waste.		

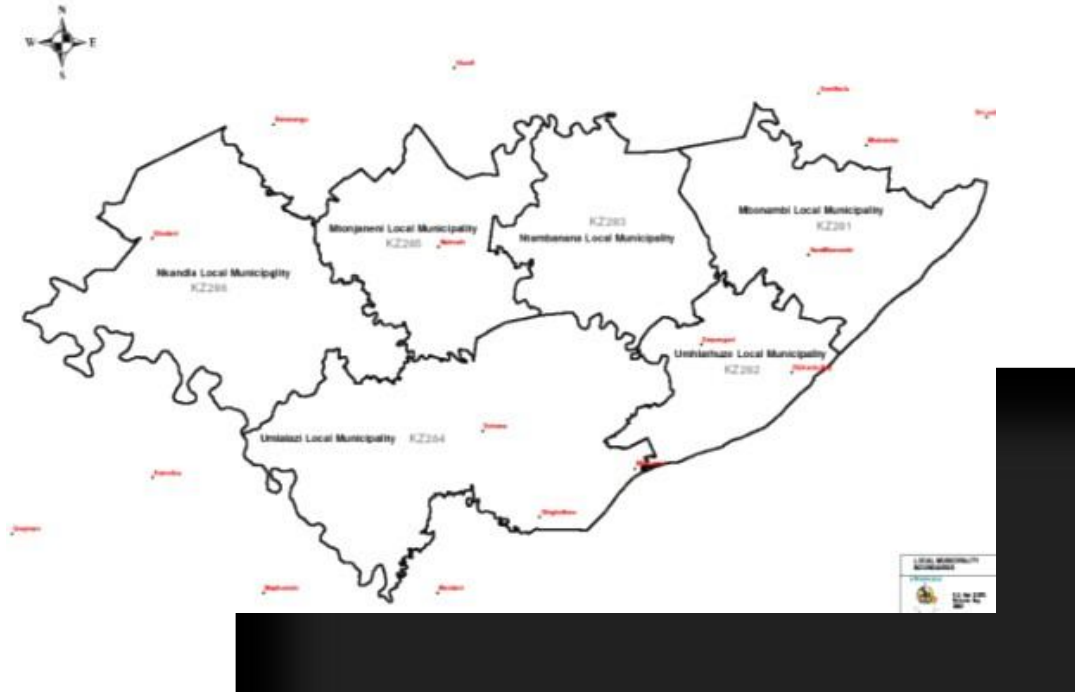
UTHUNGULU REGIONAL LANDFILL SITE

General Description			
Year of construction	Cell 1: 09 June 2003 Cell 2: operation begin in March 2009	Area covered	Cell 1: 1.5 ha Cell 2: 1.5 ha
Geographic location	Latitude 26°46'02.88"S, Longitude 31°54'55.57"E	Is there public participation in the management of the site?	Yes. Monitoring meeting started in September 2009
Nuisance control on site	Pamphlets (written in the local language) to raise scavenging awareness were given to scavengers. Mutual agreement reached between the site manager and scavengers to adhere to the rules of operation of the facility.	Condition of access road	An estimated length of 100m of the road is tarred from the entrance to the east. The road then extends into an unsurfaced gravel road through to the working face of cells 1 and 2. The surfaced and unsurfaced roads are well maintained.
Is the site legal?	Yes	Surrounding land use	The remaining 22 ha of property will be leased to local farmers for commercial sugar farming.
Resources on Site			
Type of access control at gate	Fenced gate with 24 hrs security.	Resources available on site	<i>Landfill Compactor Dozer ADT/Water Tanker Excavator TLB 6 x Bins at Public disposal area</i>
Site Management			
Method of landfilling	Spread and compaction of waste in the designated space (working face)	Is waste covered daily?	Covered daily
Are there plans to extend the site?	Yes. The site has been designed to accommodate 8 phases. Phase 2 is currently operational.	Are waste disposers charged at the gate?	Disposed waste is weighted and charged.
Does leachate and gas management occur on site?	Leachate is extracted by means of the pump system through to the uMhlathuze sewer treatment works in eMpangeni town. Gas extraction is underway.	Are there plans to close the site?	There are no closure plans in place.
Waste Recycling and Reuse	License was amended for recycling activities, the administrative processes are currently initiated.	Is there waste reclamation on site?	Informal scavengers reclaim reusable items. The reusable items includes: paper, plastics, glass, cans, tyres, and metals.

4. SITE LOCATION

4.1 UThungulu District Landfill site has an extent of 124 hectares and is situated on Erf 11425 and 11425 of Richards Bay which is located east of the Empangeni town in the Local Municipality of UMhlatuze along R34, between R102 and N2. Access to the site is along the R34, with the co-ordinates to the site entrance as follows:

Latitude 26°46'02.88"S Longitude 31°54'55.57"E



From Richards Bay
to Empangeni

To Durban

5. CAPACITY OF THE SITE

5.1 The waste disposal area is approximately 42 hectares which comprises of 1 to 7 cells to be developed with a life span of 5 years each. Total volume of approximately 10 000 000m³.



5.2 Cell 1 operated from 2003 to 2010 and the waste was diverted to cell 2 after the completion of the development, which is currently operational.

5.3 The recent survey investigations revealed that the load cell 1 still has available airspace and an additional lifespan of approximately 5 months.



6. Demographics/ Population Census Data/ Municipal Population Statistics

Local Municipality	2007	2010
uMhlathuze	332 156	365 372
uMlalazi	175 372	192 909
Nkandla	127 451	140 196
Mfolozi	118 081	129 889
Ntambanana	94 190	103 609
Mthonjaneni	47 010	51 711
Uthungulu District	894 260	983 686

Settlement



7. Average Waste Received at the Landfill/Month

Quantities of Waste (Ton)					
WASTE ANALYSIS BY MUNICIPALITIES	JUL'13	AUG'13	SEPT'13	AVERAGE	Approx. Distance to the Landfill (km)
UMHLATHUZE	8 816.62	8 979.54	7 233.74	8 343.30	15
UMLALAZI MUNICIPALITY	865.76	542.64	459.94	622.78	85
MTHONJANENI MUNICIPALITY	443.72	473.42	374.40	430.51	95
MANDENI MUNICIPALITY	306.22	280.08	290.18	292.16	110
MFOLOZI MUNICIPALITY	280.52	138.36	192.92	203.93	30
ULUNDI MUNICIPALITY	113.68	127.68	118.70	120.02	155
NTAMBANANA MUNICIPALITY	6.34	6.18	3.98	5.50	30
TOTAL WASTE DISPOSED	10 832.86	10 547.90	8 673.86	10 018.21	
NKANDLA					

8. Annual Quantities of Waste Disposed at the Landfill (Jan – Dec)

Description	2010	2011	2012
Miscellaneous	59 669.24	-	-
Domestic Waste	26 776.22	50 322.30	74 594.14
Green Waste	22 316.22	50 655.08	24 058.74
Builders Rubble	9 076.72	7 860.42	27 827.92
Carbon Dust	535.74	290.60	0.96
Tyres	266.58	920.16	873.10
De-listed Waste	145.96	300.56	418.20
Screened Sewerage	22.70	150.06	339.32
Abattoir Waste	-	81.16	117.52
Animal Waste	-	29.62	24.02
De-listed Sand/ Slag	-	-	29.94
Annual Total (Ton)	118 809.38	110 609.96	128 283.86

9. Economics and Financing of Waste Management at Landfill Site

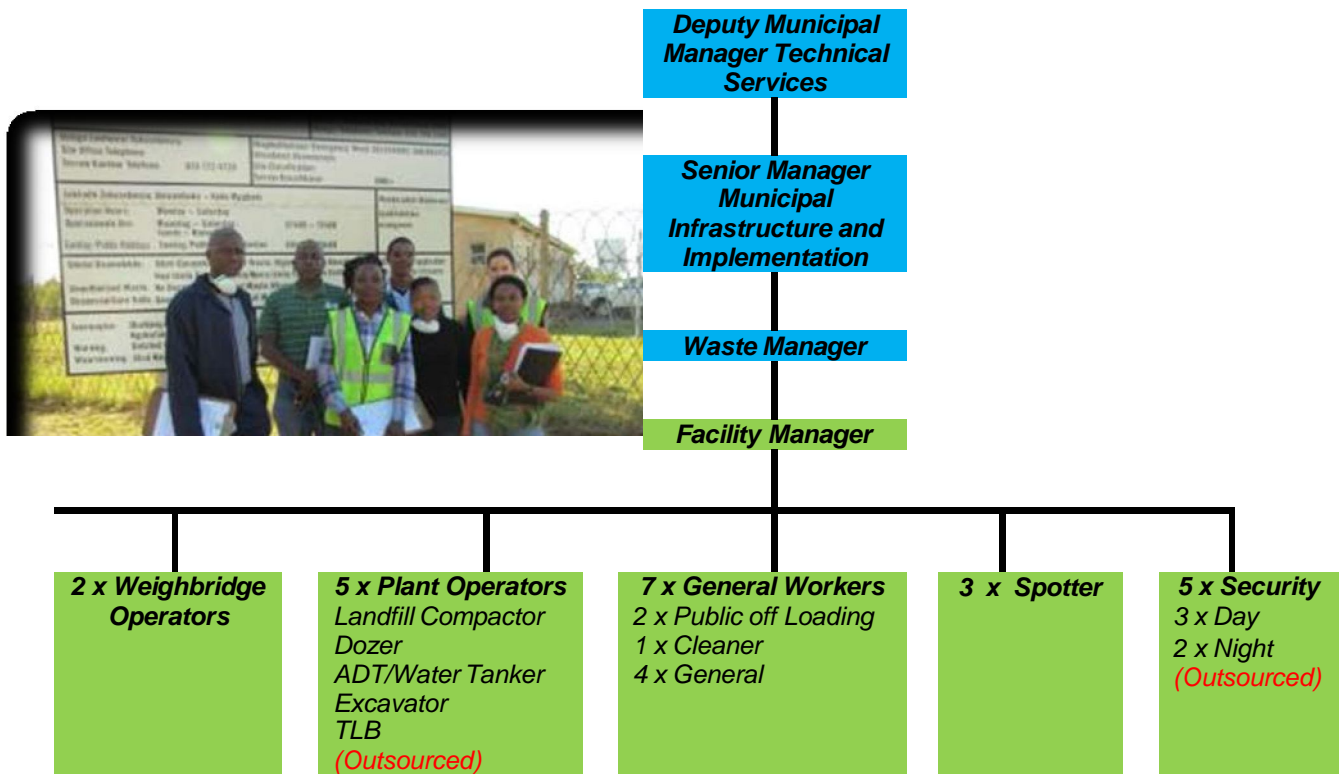
8.1 Revenue Generated (Jul 11 – Jun12)

Description	Tons(11/12)	Rate	Amount
Domestic Waste	54 797.58	R 68.00	R 3 726 235.44
Green Waste	36 500.22	R 68.00	R 2 482 014.96
Builders Rubble	17 692.86	R 68.00	R 1 203 114.48
Tyres	937.82	R 699.30	R 655 817.53
De-listed Waste	348.14	R 974.70	R 339 332.06
Sewerage	321.22	R 1 719.00	R 552 177.18
Abattoir Waste	90.86	R 68.00	R 6 178.48
Animal Waste	31.02	R 68.00	R 2 109.36
De-listed Sand/ Slag	26.1	R 974.70	R 25 439.67
Carbon Dust	0.82	R 974.70	R 799.25
Totals	110 746.64		R 8 993 218.41

8.2 Operational Expenditure

Description	2009/ 2010 Budget
Salaries	R1 791 000
Operations and Maintenance	R6 699 257
Capital Charges (interest and loan repayments)	R5 838 255
General Expenses	R 356 397
Operational Projects	R 865 000
Total Operational Budget for 2009/2010	R15 549 909

10. Organisational Structure and Resources



11. Summary Uthungulu District Municipality Waste Management Facilities per Local Municipality

LOCAL MUNICIPALITY	LICENSE STATUS	VOLUME OR TONNAGE DISPOSED/ MONTHLY	WASTE TYPE DISPOSED	YEAR OF COMMISSIONING/ SERVICE LIFE OF FACILITY (LOF)
MFOLOZI				
Kwambonambi landfill	Licensed (Closed)	Unknown	Garden & domestic	Closed

Kwambonambi Transfer Station	Licensed (2012)	203.93 tons (Uncompacted)	Garden & domestic	2005 LoF: Unlimited
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UMHLATHUZE

Alton Landfill Site (Closed in 2005). Currently operates as a recyclables drop off centre	Not licensed (Closed)	. ~ 500 m3 (Uncompacted garden waste)	Garden General waste	Due for rehabilitation
Uthungulu Regional Landfill	Licensed	8 343.30 Tons (Compacted and covered)	All general & Some industrial waste	2003/4 Total LoF: 35 Yrs LoF Cell 1: 5 yrs LoF Cell 2: 5 yrs



NTAMBANANA				
Buchanana Transfer Station	Licensed	5.50 tons (Uncompacted)	All general waste	2006 LoF: Unlimited

<i>MLALAZI</i>				
Eshowe Landfill	Licensed (closed)	(Uncompacted)	All General waste	Under Rehabilitation.



Eshowe transfer Station	Licensed (2010)	4501 m3 (Uncompacted)	All General waste	1980 LoF: 30 years
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Mtunzini Transfer Station	Licensed.	1022 m3 (Uncompacted)	Garden & Building rubble	2007 LoF: Unlimited
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Gingindlovu Dump Site	Not Licensed.	Unknown, Drop off zone	General waste, garden & building rubble, tyres	1998 (Estimated) LoF: 15 years (estimated) Operation for more than 10 yrs.
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MTHONJANENI				
Melmoth Landfill	Licensed (Closed, 2011)	700m3 (Uncompacted trench system)	All general waste except Industrial	1975 (estimated) LoF: +30 yrs (estimated)
Mthonjaneni transfer station	Licensed (2011)	430.51 Tons (Uncompacted)	All general waste	Unknown

NKANDLA				
Nkandla Landfill (Current development is on hold)	Licensed (2002)	1116 m3 (Compacted, trench system)	All general waste except Industrial	LoF: Unknown.



THANK

YOU