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Exploring barriers to land accessibility for low-income housing delivery: A case of buffers of open space on the mining belt between Johannesburg CBD and Soweto

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APPENDICES

Appendix 1: The Survey Instrument

WITS UNIVERSITY HOUSING PREFERENCES SURVEY

TO BE FILLED BY INTERVIEWER immediately before interview starts:

Initials of Interviewer:_____ Date:_____

Location of interview:_____ Time:_____

Introduction. Hello, my name is _____. I am a Master student at Wits, and I am doing a class project that includes some surveys of housing preferences. Think about where you live, and where you would like to live and answer to the best of your ability.

Thanks for agreeing to talk to us. Please be assured that this is a confidential interview and if you feel uncomfortable, we can stop anytime. Can you do the interview in English, (y/n) ____ or would you prefer another language (what??)_____

How long have you lived in your current house?_____

Do you own or rent your house?_____

If you own, do you have a bond (loan) on your house? (Y/N)_____

If you rent, would you consider getting a bond to buy a home (Y/N)_____

Where do you want to be living in 5 years?_____

Let me begin by asking you some questions about what you consider an Ideal Housing Situation. Please rank each item on a 1-5 scale in terms of their importance to you, where 1 is most important, 3 is of middle importance and 5 is the least important, or not important. Think of the ideal situation when answering.

Food shopping	**1**	**2**	**3**	**4**	**5**
Joburg CBD*o	**1**	**2**	**3**	**4**	**5**
Other work place (where?)_____	**1**	**2**	**3**	**4**	**5**
Creche	**1**	**2**	**3**	**4**	**5**
Kid's primary and secondary schools	**1**	**2**	**3**	**4**	**5**
Technikon and University	**1**	**2**	**3**	**4**	**5**
Hospital/Clinic	**1**	**2**	**3**	**4**	**5**
Access to Extended Family**	**1**	**2**	**3**	**4**	**5**
A vegetable garden	**1**	**2**	**3**	**4**	**5**
Access to public transportation	**1**	**2**	**3**	**4**	**5**
Avoiding Environmental Pollution	**1**	**2**	**3**	**4**	**5**
Full utilities (water, electricity, and sewer)	**1**	**2**	**3**	**4**	**5**
Get housing subsidy	**1**	**2**	**3**	**4**	**5**
House value going up (appreciation)	**1**	**2**	**3**	**4**	**5**
Safety_____	**1**	**2**	**3**	**4**	**5**
House size	**1**	**2**	**3**	**4**	**5**
Recreation areas	**1**	**2**	**3**	**4**	**5**
Other (what?)_____	**1**	**2**	**3**	**4**	**5**

Of the previous list, which are the three most important? ***Would you like me to read them to you again?***

1._____
2._____
3._____

Your answers are appreciated, thank you. Let me now change to ask you questions about your Current Housing Situation, and its location and if you are satisfied or dissatisfied with it. Please rank each item on a 1-5 scale, where 1 is most satisfied, 3 is middle satisfaction and 5 is not satisfied. For the house you live in now:

Food shopping	**1**	**2**	**3**	**4**	**5**
Joburg CBD*o	**1**	**2**	**3**	**4**	**5**
Other work place (where?)_____	**1**	**2**	**3**	**4**	**5**
Creche	**1**	**2**	**3**	**4**	**5**
Kid's primary and secondary schools	**1**	**2**	**3**	**4**	**5**
Technikon and University	**1**	**2**	**3**	**4**	**5**
Hospital/Clinic	**1**	**2**	**3**	**4**	**5**
Access to Extended Family**	**1**	**2**	**3**	**4**	**5**
A vegetable garden	**1**	**2**	**3**	**4**	**5**
Access to public transportation	**1**	**2**	**3**	**4**	**5**
Avoiding Environmental Pollution	**1**	**2**	**3**	**4**	**5**
Full utilities (water, electricity, and sewer)	**1**	**2**	**3**	**4**	**5**
Get housing subsidy	**1**	**2**	**3**	**4**	**5**
House value going up (appreciation)	**1**	**2**	**3**	**4**	**5**
Safety_____	**1**	**2**	**3**	**4**	**5**
Other (what?)_____	**1**	**2**	**3**	**4**	**5**
House quality	**1**	**2**	**3**	**4**	**5**
House size	**1**	**2**	**3**	**4**	**5**
Overall satisfaction	**1**	**2**	**3**	**4**	**5**

What is the best thing about where you live now, _____

What is the worst thing about where you live? _____

If you were to get a new home what would the most important reason for that? _____

Let's now talk about a new house you would like to live in and some of the features in this new unit. Assume each new home has 4-5 rooms (at least 2 bedrooms), one bath, with sewer, water and electricity and one parking space. Using a similar 1-5 scale where 1 is essential, 2-4 are lower degrees of importance, and 5 means you don't care about this item. Please rank each item.

House floor made of Concrete	**1**	**2**	**3**	**4**	**5**
Wired for internet	**1**	**2**	**3**	**4**	**5**
More inside space/extra room	**1**	**2**	**3**	**4**	**5**
Bigger stand/outside space	**1**	**2**	**3**	**4**	**5**
Nice outside views	**1**	**2**	**3**	**4**	**5**
Having a vegetable garden	**1**	**2**	**3**	**4**	**5**
Space to garden on the roof	**1**	**2**	**3**	**4**	**5**
Basic/simple kitchen	**1**	**2**	**3**	**4**	**5**
Upgraded kitchen (stove, etc)	**1**	**2**	**3**	**4**	**5**
Balcony	**1**	**2**	**3**	**4**	**5**
Place for braai	**1**	**2**	**3**	**4**	**5**
Playground for kids	**1**	**2**	**3**	**4**	**5**
House on ground	**1**	**2**	**3**	**4**	**5**
Flat* on 2nd floor**	**1**	**2**	**3**	**4**	**5**
Solar hot water heater	**1**	**2**	**3**	**4**	**5**
House value goes up (Appreciation)	**1**	**2**	**3**	**4**	**5**
Other what??_____	**1**	**2**	**3**	**4**	**5**
Other what??_____					

Sorry. Now we will change the subject again.

Now let me ask you a few questions about taking chances and risk. I am going to mention a few items, and I would like you to tell me how important it would be to avoid these things. We will use the same 1-5 scale, where 1 means you are really concerned about it, 3 means you are somewhat concerned, and 5 means you are not worried about it.

Getting HIV/AIDS, dying in 10 years	**1**	**2**	**3**	**4**	**5**
Riding in a Taxi, maybe having accident	**1**	**2**	**3**	**4**	**5**
Getting Tuberculosis (TB), being weak and sick	**1**	**2**	**3**	**4**	**5**
Dolomite soils/house collapsing in hole	**1**	**2**	**3**	**4**	**5**
Driving on bald tyres and having a car smash	**1**	**2**	**3**	**4**	**5**
Breathing problems from blowing mine dust	**1**	**2**	**3**	**4**	**5**
Radon**and small***** cancer risk in 20 years**	**1**	**2**	**3**	**4**	**5**
Getting very sick from contaminated water	**1**	**2**	**3**	**4**	**5**
Smoking cigarettes and cancer risk in 20 years	**1**	**2**	**3**	**4**	**5**

Which are the three risk activities that most concern you?

1_____

2._____

3._____

Now let's talk about getting to work and shopping. Concerning, transportation, and asking about the head of household:
Do you own a car?_____

How did you get to work yesterday (or the last time you went) (tick one): Walked____

Taxi___ Bus___ Train___ own car____ other's car____ bicycle_____

How long did it take you to go to work one way (minutes): _____(time)

How much do you pay one way to get to work?_____

Scenarios

Thanks again for answering our questions. The next section asks some what-if questions. Let's suppose you are looking for a new home in a different location. You need to find a home quickly and have been looking for some time. You are looking for a four room house with registered ownership, with water, sewer and electricity, a place to park a car, and you find one that meets your space and location needs. If the neighborhood is also what you are looking for, what is the most you would be willing to offer (total price) to buy the home? (in Rands) _____******

Would you need a government subsidy to buy this? (y/n)___

Now I am going to give you several different scenarios. These scenarios are "what if" situations. Each one is completely independent of the others. In other words, the conditions in one description do not exist in any of the other descriptions. For each scenario, imagine we are talking about the house I just described to you moment ago and you just gave a price on. Everything about the home and the area it is located in is the same as for your home except for the additional factors we name in the scenario.

After I have read you each scenario I will ask you a few questions about it. OK?___

Scenario A. The house is located about a one-hour taxi ride from the Johannesburg Central Business District. The area is a new development, and is just beginning to have schools and shopping put in. There are very few trees there. The house has four rooms, and sits on a small stand, and can be expanded as needed. Except for this one factor the rest of the neighborhood is like yours, and the house is very similar to your house.

Using the 1-5 scale where 1 is very likely, and 5 is very unlikely, how likely is it that you would make an offer on this home?

Likely **Unlikely**

Would

1 2 3 4 5

What is the **most** you would be willing to pay for the home?_____

Scenario B. The home is located within a kilometre of Main Reef Road, between Soweto and the Johannesburg Central Business District. The travel time to the CBD by taxi is 10 minutes. The house is new, and has other new homes around it. Schools and shopping are nearby. A vegetable garden on the ground is not possible, and the 4-room unit is on the second floor of a 3-storey building. Except for this, the home and neighborhood are just like the one you are looking for.

Using the 1-5 scale where 1 is very likely, and 5 is very unlikely, how likely is it that you would make an offer on this home?

Likely Would **Unlikely**

1 2 3 4 5

What is the **most** you would be willing to pay for the home?_____

Scenario C . The home is located on former mining lands, close to the Johannesburg Central Business District. Schools and shopping are nearby. The travel time to the CBD by taxi is 10 minutes. The mine tailings have been taken away, but the land has a small amount of leftover chemicals under it, including radon****. The site has been cleaned to where the levels are the same as other property elsewhere. The government is satisfied that the property is suitable for housing. There is a small***** risk of having health problems in 20 years. Vegetable gardening on the ground is not possible, and the 4-room unit is on the second floor of a 3-storey building. Except for this, the home and neighborhood are just like the one you are looking for.

Using the 1-5 scale where 1 is very likely, and 5 is very unlikely, how likely is it that you would make an offer on this home?

Likely **Unlikely**
Would

1 2 3 4 5

What is the **most** you would be willing to pay for the home?_____

Scenario D. The home is located on former mining lands close to the Johannesburg Central Business District. The travel time to the CBD by taxi is 10 minutes. Schools and shopping are nearby. The house is located next to an existing mine dump that is 30 meters high. Sometimes the wind blows the dust onto the neighborhood where the house is located. There is a risk of having health problems. Vegetable gardening on the ground is not possible, and the 4-room unit is on the second floor of a 3-storey building. Except for this, the home and neighborhood are just like the one you are looking for.

Using the 1-5 scale where 1 is very likely, and 5 is very unlikely, how likely is it that you would make an offer on this home?

Likely **Unlikely**
Would

1 2 3 4 5

What is the **most** you would be willing to pay for the home?_____

Demographics of household composition. ***We are almost done, now we have just a few final questions about you:***

Which best describes your current house: (check one) informal house___
RDP house __ , Formal private sector house____, Other (what)_____

Your Age: (tick one) 20-29___ 30-39___ 40-49___ 50-59___ 60-69___ 70+___

Education: (tick one) Less than grade 8___, Some High school (standard 8)___
High School grad Matric)___ some college____ college grad____ post grad_____

Did you attend secondary school in a rural area (Y/N)_____

How many persons lived full time in your house last week: (number) __
Of these, how many kids under 18 years_____

How many employed (full and part time?) people were living in your household ____

Is household head married?_____

Recent monthly income (for entire household, tick one)

Less than Rand 2500 ____
2501-3500 ____
3501-4500 ____
4501-5500 ____
5501-6500 ____
6501-7500 ____
more than R7500 ____

Gender of household head (M/F)___ ,

Mother tongue spoken at home _____

(If own) Value of your present house _____,(or) Monthly Rental paid _____

Thank you very much for your time!

If asked, you may elaborate as follows:

**** CBD means town***

***** extended family means relatives, family***

****** flat means a one storey home in an apartment building, not on ground***

******* radon means a radioactive gas formed by the decay of uranium***

********small risk means one cancer death out of 1,000 persons, in 20 years***
********* If respondent cannot provide an answer in Rands, then review prior answers from the first part of page 1, and restate their housing situation. Refer to their response to where they would be living in 5 years, and ask about how much they could afford, in a range.***

Appendix 2: Research Questions for Document Analysis

The main research question of this study was:

What are actual barriers which inhibit access to former mining lands (dumps) for the construction of low-income housing?

The following will be the sub-questions:

- What difficulties are likely to discourage potential low income housing beneficiaries from preferring housing on former mining lands?
- What health risks or dangers are posed by housing on former mining lands?
- What are best possible ways of improving access to well-located former mining lands for low-income housing delivery?
- What is the best use of this land from the owner's perspective?

Appendix 3: Additional Survey results

Appendix 3.1. Languages spoken in South of Johannesburg in percentage.

Language	#	% of total
Afrikaans	106191	6%
English	193509	11%
IsiNdebele	6951	0%
IsiXhosa	163431	9%
IsiZulu	580338	32%
Sepedi	81129	4%
Sesotho	295890	16%
Setswana	198417	11%
SiSwati	16236	1%
Tshivenda	50589	3%
Xitsonga	113445	6%
Other	13113	1%
TOTAL POPULATION OF JOHANNESBURG SOUTH	**1819239**	**100%**

Source: Statssa Census 2001: http://www.statssa.gov.za/census2001/atlas_ward/index.html

Appendix 3.2. Worst thing about current place of residence (black township)

best thing about current location			
item	no	% valid	% of total
central place	3	1.60%	1.40%
close to work place	9	4.80%	4.20%
community	2	1.10%	0.90%
development	3	1.60%	1.40%
family	7	3.80%	3.20%
food	4	2.20%	1.90%
friends	5	2.70%	2.30%
full utilities	8	4.30%	3.70%
hospital	6	3.20%	2.80%
humanity	4	2.20%	1.90%
CBD	3	1.60%	1.40%
people	5	2.70%	2.30%
privacy	3	1.60%	1.40%
transport	18	9.70%	8.30%
safety	16	8.60%	7.40%
quiet place	4	2.20%	1.90%
schools	4	2.20%	1.90%
0ther	82	44.10%	38.00%
subtotal	186	100.00%	86.10%
NA	30		13.90%
Total	216		100.00%

Source: Simons et al, 2005

Appendix 3.3. Reason to move from the current place of residence

reason to move

reason	no	% valid	% of total
need a bigger space	27	13.40%	12.50%
affordability of necessities	2	1.00%	0.90%
pollution	3	1.50%	1.40%
change of environment	2	1.00%	0.90%
comfortability	2	1.00%	0.90%
crime	8	4.00%	3.70%
need a bigger house	16	7.90%	7.40%
0wnership	23	11.40%	10.60%
closer to work	11	5.40%	5.10%
big family	2	1.00%	0.90%
living with family	2	1.00%	0.90%
safety	18	8.90%	8.30%
privacy	2	1.00%	0.90%
other	84	41.60%	38.90%
subtotal	202	100.00%	93.50%
NA	14		6.50%
	216		100.00%

Source: Simons et al, 2005

Appendix 3.4: Language used in conducting the surveys

Language	Number	%
English	139	64.4%
Afrikaans	1	0.5%
Isizulu	34	15.7%
Sepedi	5	2.3%
Sesotho	27	12.5%
Setswana	5	2.3%
Isixhosa	3	1.4%
Xitsonga	2	0.9%
TOTAL	**216**	**100.00%**

Source: Simons et al, 2005

Appendix 3.5: Age of respondents

Age category	NO. of respondents	%
Age 20-29	44	20.37%
Age 30-39	65	30.09%
Age 40-49	67	31.02%
Age 50-59	19	8.80%
Age 60-69	14	6.48%
Age 70+	3	1.39%
N/A	4	1.85%
TOTAL	**216**	**100%**

Source: Simons et al, 2005

Appendix 3.6: Educational levels of respondents

Grade	Number	Total %
Less than grade 8	34	15.8%
Some High School (std. 8)	39	18.1%
High school (Matric)	55	25.6%
Some College	22	10.2%
College graduates	47	22.9%
Post graduates	18	8.4%
TOTAL	**215**	**100%**

Source: Simons et al, 2005

Appendix 3.7: Income for respondents

Income	NO. of interviewees	%
Less than R2500	55	25.7%
R2501-R3500	42	19.9%
R3501-R4500	14	6.5%
R4501-R5500	20	9.4%
R5501-R6500	13	6.1%
R6501-R7500	64	29.9%
More than R7500	64	29.9%
TOTAL	**214**	**100%**

Source: Simons et al, 2005

Appendix 3.8: Scenarios A to D.

Appendix 3.8.(a): Scenario A: The home is far away (one hour taxi ride) from Johannesburg

CBD.

Bids	Number of bids
Invalid bids	9
Premium bids	14
Total bids	**186 = 94.9%**
Average bid	-28.1%
Top ½ bid	2.8%
Top ¼ bid	4.9%
No bid	10
Total Valid bids	196
GRAND TOTAL	205

Source: Simons et al, 2005

Appendix 3.8. (b): Scenario B: Flats situated closer to the CBD (10 minutes taxi ride from the CBD).

Bids	Number of bids
Invalid bids	16
Premium bids	17
Total bids	**165 = 87.3%**
Average bid	33.7%
Top ½ bid	-6.1%
Top ¼ bid	6.1%
No bid	25
Total Valid bids	189
GRAND TOTAL	205

Source: Simons et al, 2005

Appendix 3.8 (c): Scenario C: The home is closer to the CBD (10 minutes taxi ride from the CBD), but situated on Radon contaminated land.

Bids	Number of bids
Invalid bids	12
Premium bids	0
Total bids	**141 = 73.1%**
Average bid	-53.9%
Top ½ bid	-31.4%
Top ¼ bid	-20.5%
No bid	52
Total Valid bids	193
GRAND TOTAL	205

Source: Simons et al, 2005

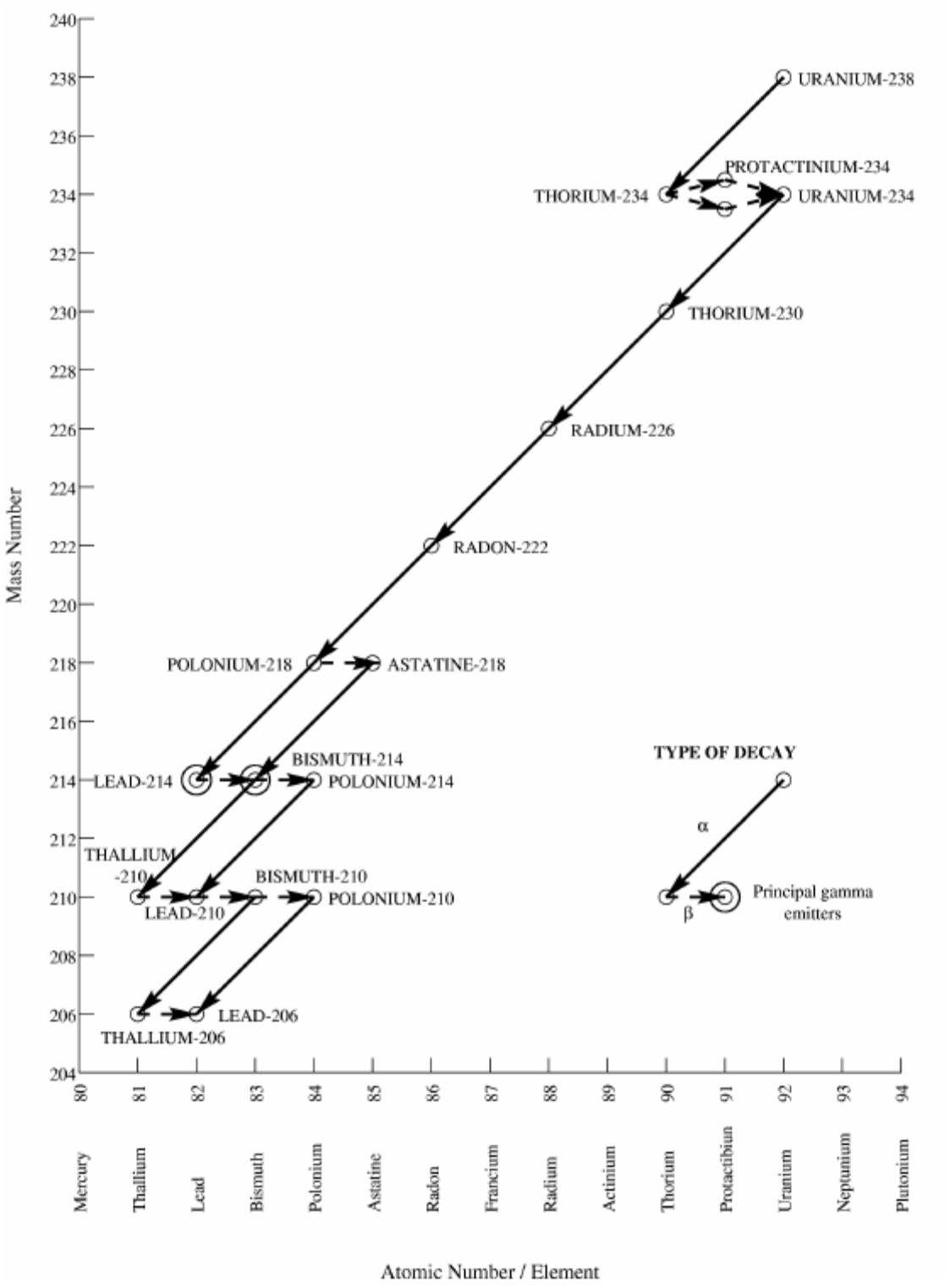
Appendix 3.8(d): Scenario D: the home is located on contaminated land, closer to Johannesburg CBD (10 minutes taxi ride from the CBD), with blowing mine dust.

Bids	Number of bids
Invalid bids	7
Premium bids	0
Total bids	**136 = 68.7%**
Average bid	-68%
Top ½ bid	-50%
Top ¼ bid	-36%
No bid	62
Total Valid bids	198
GRAND TOTAL	205

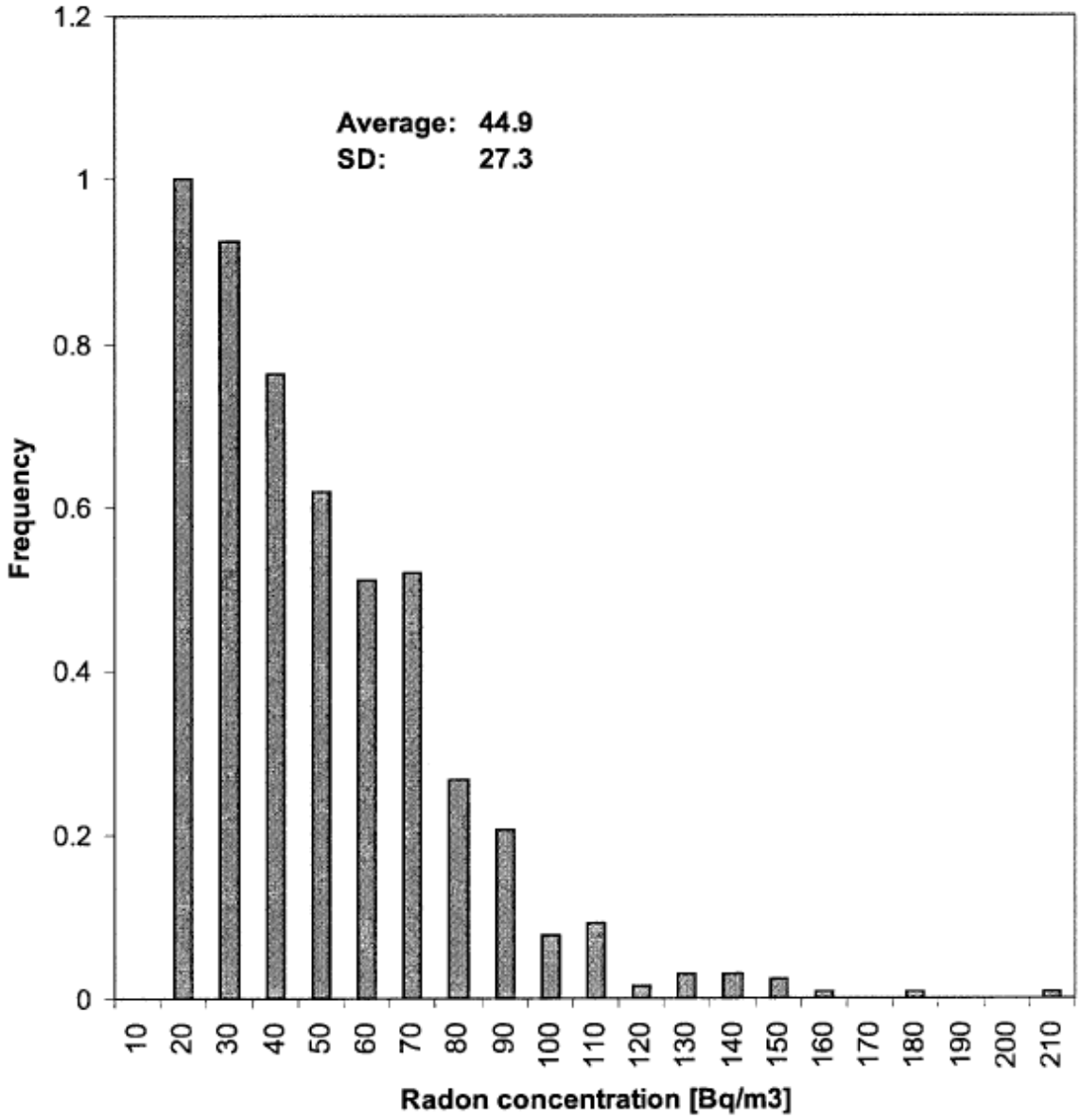
Simons et al, 2005

Appendix 4: Uranium decay and radon concentrations.

Appendix 4.1: Series of uranium decay. (Source: NNR, 2005)



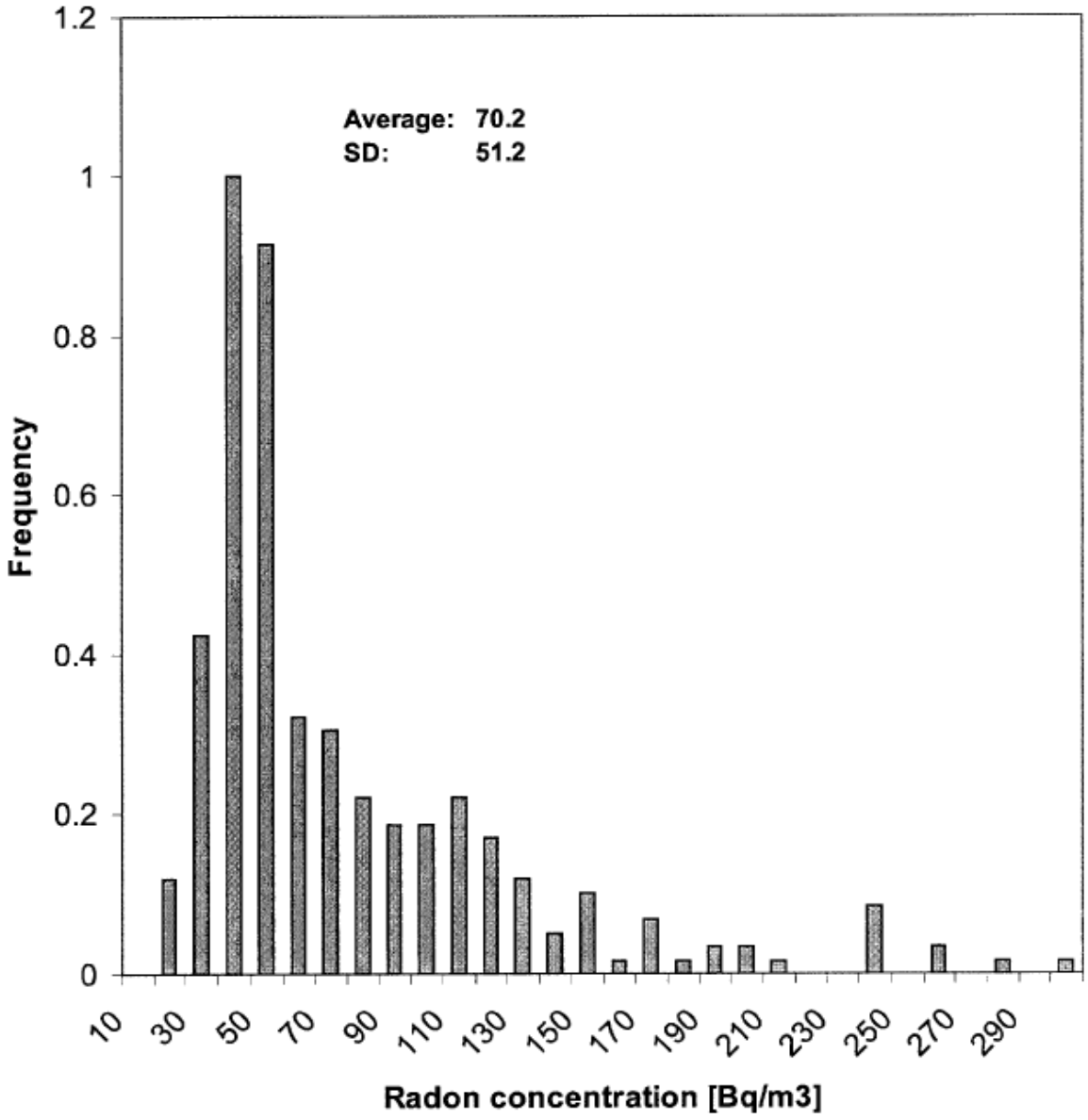
Appendix 4.2: Distribution of radon in mining areas



SOURCE: NNR, 2005

The mean of distribution is 44.9 which is lower than that for non-mining areas, while the Standard Deviation (SD) is 27.3.

Appendix 4.3: Distribution of radon in non-mining areas



SOURCE: NNR, 2005

The mean distribution is 70.2 which is higher than that for mining areas, while the Standard Deviation (SD) is 51.2.

Appendix 5: List of people contacted by project leaders for the survey project

Barker, Andrew. Barker Development Consultants

Bennett, Richard. IPROP

Briel, Amelia. Gauteng Department of Agriculture, Conservation and Environment

Jones, Richard. Planning Consultant.

Lesejane, Nketu. Gauteng Department of Agriculture, Conservation and Environment

Lesufi Nikisi. Chamber of Mines Of South Africa

Moodley, Kribbs. PDNA

Zituta, Zama. National Nuclear Regulator.