IN THE APPEAL BEFORE THE MINISTER OF ENVIRONMENTAL AFFAIRS

REF: WML12/9/11/L1200/4/SUSPENSION

ENVIROSERV WASTE MANAGEMENT (PTY) LTD Appellant

and

THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS First Respondent

GORDON, MARK TREVOR N.O. Second Respondent

UPPER HIGHWAY AIR NPC Third Respondent

DEPARTMENT OF WATER AND SANITATION Fourth Defendant

ETHEKWINI MUNICIPALITY Fifth Respondent

THIRD RESPONDENT'S RESPONDING SUBMISSIONS

1.

On 12 June 2017, the Appellant, without consent or authority of the Department of Environmental Affairs ("the DEA") or the Minister, substituted its appeal with the "revised" appeal it now seeks to pursue. It alleges that this revised appeal is to replace *in toto* the original appeal. Any allegation contained therein or the annexures thereto not expressly admitted hereinafter, is denied by the Third Respondent ("UHA NPC").

2.

The original appeal was not timeously or properly prosecuted as required by

Regulation 4(1) and 4(2) of the National Appeal Regulations 2014 read together with Item 9 of the suspension decision in terms of s56 of the National Environmental Management: Waste Act 59 of 2008 ("NEMWA") dated 4 April 2017.

3.

The Appellant's first ("provisional") Notice of Appeal dated 10 April 2017 was delivered to the UHA NPC as representative of some of the interested and affected parties, on 13 April 2017, and was not accompanied by any supporting documents which were referred to in the appeal as required by Regulation 4(2)(b)(ii) and which was in terms of s43(4) of National Environmental Management Act 107 of 1998 ('NEMA"), mandatory. The inspection of documents tendered was also not in compliance with the case law relied upon or that of **CROWN CORK & SEAL CO. INC AND ANOTHER v RHEEM SOUTH AFRICA (PTY) LTD AND OTHERS 1980 (3) SA 1093 (W)**.

4.

The prescribed mechanism for lodging the appeal in terms of Regulation 4 is the submission of the appeal together with the supporting documents, including service of these on interested and affected parties.

5.

The accompanying documents were finally only delivered to the UHA NPC on 4 May 2017, outside the prescribed time period and accordingly the appeal was not timeously and properly noted as prescribed by Regulation 4(2) read together with s43(4) of NEMA.

6.

Moreover, the original appeal was never served on the Monitoring Committee for the Shongweni Landfill Site ("SLS") as required by the decision in terms of s56(2) of NEMA as communicated to the Appellant or the National Appeal Regulations as interested and affected parties.

7.

That appeal was also fatally defective as it never included any evidence challenging the Deputy Director General's decision in terms of s56 based on the possible or actual health impacts being suffered as a result of the Appellant's contraventions of its waste management license and NEMWA, despite the toxicological report and associated dispersion modelling reports being available.

8.

On 12 June 2017, the Appellant filed what it termed as a "revised appeal". That appeal was similarly not served on all interested and affected parties and was not served on the Monitoring Committee until later in June 2017.

9.

No condonation has been sought by the Appellant for the breaches aforesaid, even if the Minister was empowered to grant such condonation. The noting and prosecution of the appeal in the forementioned manner does also not constitute substantial compliance with s43 of NEMA or the National Appeal Regulations, and on this basis alone, the appeal has not served to suspend the operation of the decision in terms of s56 of the Act and should in any event be rejected.

10.

By order of the KwaZulu-Natal Local Division of the High Court, Durban, on 26 April 2017, the suspension decision was given effect to *pendente lite*.

11.

11.1 The Appellant, in terms of the "revised" appeal, at first blush, appears to concede that the suspension decision must remain in place. However, when reference is had to the Appellant's proposed varied conditions to be incorporated into annexure "A" to the suspension decision (read together with the annexures to the appeal - in particular RA.4), it is clear that the Appellant seeks to continue accepting, treating and disposing of waste contrary to the revised paragraph 1.1 of the Appellant's proposed varied suspension decision.

11.2 At paragraph 5.2 of the proposed varied annexure "A" (RA.2 to the appeal), the Appellant proposes that it must implement its Odour and Landfill Gas Monitoring plan. That plan includes the continued receipt and treatment of waste, including metallic containing wastes. There is accordingly, no suspension at all according to the Appellant's proposal, barring what prevailed pursuant to the compliance notice of 21 October 2016, being the prohibition against receipt of type 1 waste.

12.

12.1 The Appellant's refusal in paragraph 18 of the appeal to admit that it has contravened the law or its waste management license in the manner alleged in the suspension notice, despite its refusal to deal with the UHA NPC's

responding statement and annexures thereto (which also included its High Court papers containing direct evidence of health and odour impacts as well as challenges to the reliability of the toxicological and dispersion modelling reports), and despite the recent admissions (7 June 2017) by its expert appointed to conduct the toxicological review, that health and odour impacts are to be expected at the modelled concentration ranges per the Airshed report, is untenable and must be viewed in a negative light.

12.2 This refusal is also to be seen against the backdrop where the Appellant seeks to continue trading regardless of the absence of any scientific justification therefore and despite the remedial measures now being implemented only on pain of suspension of the license, were key mitigation measures which the Appellant knew according to its Environmental Control Impact Report on 2009 before tipping in Valley 2 started, had to be implemented. Gas extraction and destruction (not only recovery) was one such key mitigation measure as well as covering its leachate tanks. The Appellant had a license authorising gas extraction and destruction which it let lapse and now it has to retrofit the extraction system, a notoriously difficult task especially in light of the level of saturation of the waste pile.

13.

This refusal by the Appellant to acknowledge impacts caused by contraventions by it of its waste management license and NEMWA and NEMA, materially influences its ability and willingness to identify the continued impacts, accurately and reliably report thereon to the DEA as required and to implement the remedial measures necessary

to address the impacts it refuses to acknowledge.

14.

It comes as no surprise then that the appeal lacks the necessary supporting evidence justifying the appeal at all, or any variation of the suspension decision. Similarly, the Appellant seeks the Minister to commit to a review date of the suspension decision (i.e. commissioning of the ***trial*** flare) notwithstanding the fact that the only realistic remedial measures (capping and flare) would have only been commissioned and no data available on which to assess the success of those remedial measures at the time of the requested review.

15.

There is simply no logical or factual basis advanced for this proposed variation.

16.

The Appellant's entire appeal is factually bereft. Conclusions in the appeal are unsupported by evidence and where proof (absent any supporting data) is tendered by the Appellant, it is incomplete, misrepresented, or omitted in material respects.

17.

The suspension notice (including annexure "A" thereto) as presently formulated, provides that:

17.1 No permeate from the leachate treatment plant ("LTP") must be disposed of onto the waste site (the reference to "permeate" is clearly a reference to brine

generated by the LTP not clean permeate which may meet river quality standards capable of being irrigated onto capped valley 1 (paragraph 1.2 of annexure “A”);

17.2 No leachate or contaminated storm water is to be re-circulated into the waste body (paragraph 3.1 of annexure “A”);

17.3 Paragraph 1.1 of annexure “A” provides for the suspension of the acceptance, treatment and the disposal of all waste at the Shongweni landfill site (“SLS”).

18.

Given that the Appellant is required in paragraph 3.2 of annexure “A” to notify the DEA of how leachate and contaminated storm water will be dealt with, it is clear that no contaminated storm water (“csw”) and leachate is to be disposed of back into the waste face, whether recirculated or treated via lime dosing and ash blended (micro-encapsulated).

19.

The variation sought to allow the Appellant is to permit the Appellant to dispose of leachate which exceeds the treatment capacity of the LTP, excess csw in order to maintain the required freeboard, and brine generated by the LTP, back into the waste face by way of lime dosing and micro-encapsulation via blending the foresaid with ash or cement fines.

20.

At page 6 of the revised Envitech report, it is stated that:

> "*It has further been recognised that any disposal of leachate, contaminated storm water and leachate treatment residue in open trenches on the landfill could results in the emission of H2S.*"

21.

The proposed variations to the suspension notice accordingly will result in the emission of H2S and should not be permitted.

22.

At pages 52 and 83 of the revised Envitech report, it is recorded that Robinson (Phoenix Engineering) is of the view that brine from the leachate treatment plant being disposed of back to the site via microencapsulation has the potential to generate significant heat from hydration processes in both the ash and the cement, primarily from calcium and oxides. This increases the elevated landfill temperature which is also precluding the landfill from entering a methanogenic state.

23.

At paragraph 5 of annexure "RA.4" the Appellant identifies as one of the causes of the odour problem as the trenching activities associated with the treatment of contaminated storm water on site. The trenching of excess leachate, brine, and excess csw accordingly would only serve to exacerbate the causes of the odour generation and fugitive emissions, namely H2S emissions from trenching itself, elevated

temperatures arising from ash blending and hydration of metallic aluminium in the waste body.

24.

Doctor Jon McStay, the UHA NPC's environmental expert, engaged with WSP (a copy of his cv is attached), *inter alia*, points out that lime is another heat generating compound that can contribute to the Elevated Landfill Temperature syndrome – part of the problem and not the solution.

25.

Quite apart from the aforegoing, the proposed variation of the suspension decision is in breach of the Compliance Notice issued by the DEA on 31 October 2016 and which remains in force. All csw and leachate was to be removed from the SLS. On 7 April 2017, the DEA approved disposal not only at the listed disposal facilities as alleged by the Appellant, but any lawful disposal facility (annexure "RA.5" to the appeal).

26.

The objection to the compliance notice has not been determined and was in any event not based on the need for or effects of disposal of the excess leachate, brine or csw into the waste body. Accordingly, the Minister has no authority to vary the suspension decision in a manner which in any event would authorise the contravention of the compliance notice already in place and with which the Appellant is obliged to comply.

27.

The rationale (or lack thereof) for the continued acceptance of waste to adjust the pH

of the waste body, and the disposal of excess leachate, brine from the LTP and csw via microencapsulation in order to address the Appellant's inability to deal with the liquids generated on site at the site, are more fully canvassed hereinafter by reference to the UHA NPC's expert's submissions in response thereto (Dr. Jon McStay).

28.

The Appellant's expert has now, contrary to the Appellant, conceded health and odour impacts are caused by the SLS. These impacts constitute a contravention of the conditions of the Appellant's waste management license and the relevant sections of NEMWA referenced, *inter alia*, in the suspension decision of 4 April 2017. That being said suspension of the license by the Minister is justified in terms of s56 of NEMWA. Indeed, if those impacts continue, revocation of the license is the only solution.

29.

The UHA NPC has also addressed the Honourable Minister in respect of contraventions by the Appellant of, *inter alia*, the compliance notice of 21 October 2016, its waste management licenses as well as the relevant legislation which justify revocation of the license. The UHA NPC's rights in this regard are reserved.

30.

At paragraph 106 of the opposing affidavit delivered by the Appellant in the urgent application before the KwaZulu-Natal High Court, Durban and in a presentation on 7 June 2017 to the Monitoring Committee, supported by a slideshow prepared by Dr. Van Niekerk, circulated again on 12 June 2017 by the Appellant's "facilitator" of the Monitoring Committee (extracts from which are annexed hereto marked "**UHA1**") the

Appellant and Dr. Willie Van Niekerk confirmed, respectively, that:

30.1 Should health effects be reported in the range of 50ug/m3 to 150ug/m3, it cannot be dismissed as invalid observations;

30.2 Hydrogen sulphide in the modelled concentration range has the potential to cause adverse health effects, headaches and nausea most consistently reported. Effects are reversible;

30.3 Odour levels primarily due to hydrogen sulphide are well above the odour threshold, and it is likely that odour annoyance will be experienced by affected communities;

30.4 Dr. Van Niekerk accordingly concedes that aside from the health impacts associated with the modelled concentrations to be expected at the receptor locations in the community, odour annoyance will definitely occur over what the Appellant contends at paragraph 106.7 is “longer periods”. These odour annoyances it says are caused by H2S and mercaptans.

31

The Appellant and accordingly Van Niekerk notably shy away from ascribing any meaningful quantification to the term “over longer periods” when it is clear that such quantification must have been in the mind of Dr. Van Niekerk. The Appellant and its expert’s refusal to quantify the impacts which they have found, and which is referred to by them as “longer periods”, is telling.

32

That being said, it is now admitted that odour impacts and health impacts are associated with the SLS operations. This constitutes a violation of conditions 5.1.4 and 5.1.5 of the Appellant's waste management license and s16(1)(d) and s26(1)(d) of the National Environmental Management: Waste Act 59 of 2008 ("NEMWA") as set out in the suspension notice. The Appellant's refusal to acknowledge or admit this is untenable.

33

That serious concerns raised by the UHA NPC's original responding submissions (to which this should be seen as an addition as opposed to substitution) in relation to the reliability of the toxicological report of Infotox (the HHRA) and the associated dispersion modelling report of Airshed are repeated herein. The reports of Quentin Hurt of Skyside are annexed hereto marked "**UHA2**" and "**UHA3**".

34

Despite undertakings by Appellant that its experts would respond to both "**UHA2**" where it is apparent that the evidence of the mystery SO2 polluter is no more than the Appellant measuring temperature as opposed to SO2, and "**UHA3**", only a response was received on 10 July 2017 to "**UHA3**". Dr Van Niekerk and Burgers response is annexed hereto marked **"UHA3.a**" Hurt's response thereto is annexed hereto marked "**UHA4**".

35

The Appellant's refusal to respond to "**UHA2**" constitutes not only a breach of its

obligations imposed on it by the terms of reference governing its obligations to the Monitoring Committee, of which UHA NPC and its directors are members, but a breach of the undertakings given in that regard. A negative inference is to be drawn from the refusal to respond. The Appellant contends that the responses are outstanding as the experts are performing additional work in order to answer the concerns and criticisms raised. This is nonsensical when the reviews are based on the historical work performed and the conclusions reached on the basis of the documented investigations and “studies” conducted therein.

36

At the monitoring committee of 7 June 2017 Dr. Van Niekerk stated that his report had in fact been peer reviewed but could not answer by whom. The Appellant had to advise that it is yet to be peer reviewed. A peer review was demanded and is outstanding.

37

Moreover, in breach of the compliance notice Dr. Van Niekerk stated the following at the monitoring committee of 7 June 2017:

“We did not study the health status of the community. The health risk assessment is in principle a desk top study, it follows the source pathway, reception and consequence model”.

38

The HHRA is not a health impact study. It did not serve to interrogate or investigate the health complaints actually made by the community members. It cannot be used to

challenge the actual health impacts experienced and of which evidence has already been tendered by the UHA NPC in its opposing submissions already filed and which are incorporated in the UHA NPC's application papers, including supplementary affidavit of Hurt and confirmatories of the community members suffering from health and odour impacts. The UHA NPC prays that they be read as if specifically incorporated herein once more. Copies have already been delivered to the Appeal directorate.

39

The pollutants identified by the UHA NPC's air experts, WSP, in preliminary reports correlate with blood results from an affected community member, Petra Morum. A copy of her blood results are annexed once more as "**UHA5**".

40

Whilst the UHA NPC hoped to have its own reports finalised for submission with this responding statement, further H2S sampling campaigns are to be undertaken to verify measurements. Current findings indicate significant odour impacts in the vicinity of the landfill and the experts recommend and have been mandated to undertake further sampling with larger volume samples to verify and validate results.

41

The Appellant's experts now admit that its modelled concentration ranges are associated with the health impacts consistently reported and that the odour impacts are over long periods and are indeed caused by the SLS.

42

What is also evident from the Airshed reports, is that Airshed utilised the 98th percentile as opposed to the 100th percentile hourly average model outputs for benzene, toluene, styrene and trichloroethene, which fall below the WSP measurements over a twenty minute averaging period in the campaign referred to in the preliminary further report of Dr. Lisa Ramsay of WSP (attached hereto marked "**UHA6**" together with her CV as "**UHA7**").

43

Since the difference between upward and downward measurements in the campaign referred to in "**UHA6**" hereto indicated that the Appellant was the source of the pollutants, it is clear that the Airshed model is underestimating the impacts. The WSP further preliminary report, "**UHA6**" hereto, bring into question the dispersion modelling outputs in the Airshed report. By of way of example (further details are provided in the report). Benzene concentrations measured at Plantations over a 20 minute averaging period, during an odour event which is not considered to be a peak odour event, yielded significantly higher concentrations than the maximum 98th percentile hourly averaged modelled by Airshed for 4 Plantations receptors. The same applies to the other VOCs referenced in the report.

44

Hurt pointed out that if the modelled and measured data disagreed it could be because the measured emission data is wrong or because the simulation is defective. Either way the conclusions reached of any health-based decisions could be incorrect in this scenario.

45

The refusal by the Appellant and its experts to deal with these criticisms despite having them for almost 2 months and despite the approval of the DEA of the odour and gas management plan on 14 June 2017 (curtailed as it was) recording at item 7 thereof that additional sampling had been conducted by Envitech and Infotox and was completed (a copy of the approval is annexed hereto marked "**UHA8**") means there is no response thereto. Dr. Van Niekerk's response to Hurt that his replies (limited as they are) do not constitute a scientific engagement is disrespectful and a breach of the Code of Conduct applicable to his professional governing bodies and demonstrates a disregard of public health and public interest generally contrary to such codes.

46

Further, there is no odour assessment in the Airshed report. Cumulative odour impacts should be analysed at receptors for peak periods. There are statistical techniques for cumulative odour assessments e.g. odour activity values, and statistical techniques to convert a 100th percentile hourly average model output to shorter term peaks (e.g. 10 minutes) to compare with odour thresholds. This has not been done.

47

The Appellant has not submitted, in its appeal submissions, a positive statement that health and odour impacts are not being suffered by the community.

48

The suspension has been implemented per the suspension notice for the express purpose of the Appellant focusing on getting the odorous gases emanating from the

site under control and to ensure that the Appellant is brought into compliance with its license conditions and statutory obligations, in particular to prevent the occurrence of nuisance conditions or health hazards (condition 5.1.5 of the Appellant's waste management license).

49

Accordingly, for so long as the Appellant remains in contravention of the license and the aforesaid provisions of the Act, which are impacting or may impact upon the health of the community, as is already admitted both in respect of odour annoyance as well as health effects, no fixed date for review of the suspension decision is reasonable, certainly in circumstances where there is no factual basis established by the Appellant that as at the date of commissioning of the trial flare, the breaches by it of its license conditions and of the Act and accordingly of the consequences of the associated odour and health impacts will have ceased.

50

Without such evidence, there is no basis on which the Minister can commit to a fixed date on which the DEA should revise the suspension notice. This is particularly so where the Appellant's own annexures, in particular annexure "RA.4" to the appeal, do not support any such pre-determined review date. At paragraph 7.8 (page 8 of annexure "RA.4" to the appeal), the Appellant states that:

> "*It is necessary to install a test flare as the actual concentrations of H2S and methane in the landfill gas generated at Shongweni has yet to be verified.*

Once these parameters (quality and quantity) are properly understood, the final gas treatment option will be designed and implemented".

51

There will be no evidence available as at the date of commissioning of the trial flare, on which to ascertain whether or not the impacts associated with the fugitive gas emissions would be reduced or halted as required by the conditions of its license and indeed the suspension notice. Indeed Dr. McStay points out that:

(i) Partial capping and gas flaring is only a partial solution.

(ii) There is no H2S gas model for the site and it is doubtful that a reliable model could be generated.

(iii) The final barrier to achieving a stable, low odour, methanogenic condition in the landfill is the reduction of chemically bound oxygen within the soluble sulphates in the waste. Given the present conditions and the proposed rehabilitation it will take years to approach this condition, even after closure.

52

The reports of Dr. John McStay of WSP are annexed hereto as "**UHA9**" to "**UHA11**", the contents of which the Third Respondent prays be read as if specifically incorporated herein. These reports deal with material points raised by the Appellant in its letter by Schoonraad dated 31 October 2016 regarding the Appellant's investigation into odour generation at the SLS and the evaluation of possible mitigation measures,

portions of the Appellant's opposing affidavit in the urgent application and the Appellant's revised appeal.

53

These reports make it clear that the argument for continued receipt of wastes by the Appellant in order to allegedly adjust the pH of the waste body *in situ*, and thereby reduce H2S generation and / or fugitive H2S emissions, is completely without merit.

54

In the first instance, the Appellant misrepresents and has misrepresented the relationship between the pH and the H2S emissions. This was specifically dealt with in correspondence to the Appellant via the Monitoring committee on 12 June 2017. The Appellant produced the graph and has relied on it throughout (including in the original appeal) attached as annexure "**UHA12**" hereto, being the graph produced by Schoonraad, a Director of the Appellant. The graph covers the period October 2013 to January 2017 and is stated by him and the Appellant to depict the relationship between the pH and the H2S emissions.

55

The H2S emissions reflected in graph "**UHA12**" are those measured by the Appellant at the southern boundary, northern boundary and the contaminated storm water dam. The UHA NPC was provided with the actual H2S data of the Appellant, measured using the passive sampling techniques (Radiello sampling tubes). It has also provided these to the Minister in its submissions already made. The UHA NPC's complaint was that the actual figures for November 2016 to January 2017 were not included in the

graph, notwithstanding that the Appellant represented therein that with the increase in pH post-October 2016, the fugitive H2S emissions were reducing to the point where as at December 2016 and January 2017, there were no fugitive emissions. This was the whole point of the graph by the Appellant.

56

The UHA produced the correct graphs as they should have read with the data supplied by the Appellant inserted into those graphs. This is attached as "**UHA13**" and "**UHA14**" hereto. The Appellant has never correctly reflected the H2S for the periods November 2016 to January 2017 although it included the pH data for the period in issue.

57

The Appellant's answer to the deliberate misrepresentation by way of omission, is that the graphs prepared by the UHA NPC inserting the Appellant's data is simply a more current version of the Appellant's graph. This is completely incorrect.

58

The Appellant did not produce graphs "**UHA13**" and "**UHA14**", the UHA NPC did by inserting the monitoring figures which the Appellant gave it.

59

Secondly, the Appellant contends that the graphs were never intended to cover all of the parameters for the period, only to show a trend over time of some of the parameters. This is completely nonsensical considering that the purpose of the graph was to show the relationship between two parameters namely pH and H2S.

60

Accordingly, where the Appellant provides the pH information up until January 2017, the correlating H2S data should have also been included for the period in question in order to show whether or not the H2S, as alleged, was reducing when the pH increased as opposed to omitting the data which, by implication, was in service of proving the Appellant's false argument that the H2S was in fact decreasing, when this was in truth not the case.

61

The Appellant's argument that the Scentroid Scentinel monitors were installed on 22 December 2016 and this is why H2S was not inserted in the Schoonraad graph post November 2016 does not excuse it from having included the Radiello sampling results available or, for that matter, the H2S emissions data received from the Scentroid Scentinel monitors. The Appellant has provided no excuse whatsoever for the misrepresentation that the H2S was almost zero for December 2016 and January 2017 and substantially reduced for November 2016. This is the only portion of the graph relevant to its argument that as pH increased the H2S reduced.

62

The other points in the graph such as April 2016 compared with October 2016 did not bear out the relationship contended for by the Appellant, hence the inclusion of allegedly increasing pH post October 2016.

63

Similarly, the Appellant relies, at paragraph 22.3 of the appeal, on another graph to

demonstrate the relationship between pH and the H2S. However, despite a request and an undertaking to provide the associated H2S, *inter alia*, to corroborate the so-called “spike” in H2S as a result of the court order, the Appellant only provided to the Third Respondent data from 14 April 2017 to 8 May 2017 (despite it expressly alleging it had provided data from 14 April to 23 May 2017).

64

The Appellant stated that it was providing the data up until 23 May 2017 but did not provide that data. No response has been forthcoming as to when the full data from January 2017 to date will be provided or from 8 May 2017 to 23 May 2017 as represented.

65

An excel spreadsheet containing the data provided to the UHA NPC in pdf form is annexed hereto as “**UHA15**” for the convenience of the Minister. The graphic representation of the limited H2S provided over the period 14 April 2017 to 8 May 2017 prepared by the UHA NPC from the excel spreadsheet is delivered herewith as annexure “**UHA16**”.

66

As can be seen, the H2S emissions are high and that on average, the peak events prior to the court order were more prevalent than post the order, contrary to the allegations submitted by the Appellant. Again, more importantly, the Appellant has failed to provide any supporting data for the contentions contained in paragraph 22 together with its graph (the full period of the graph). Accordingly, the submissions

contained in paragraph 22 are not accompanied by any supporting evidence. They fall to be rejected *in toto*.

67

Similarly, the Appellant withdrew access by the DEA to its monitoring devices and accordingly, on 14 June 2017, the DEA had to make its approval of the pilot flare, conditional upon access being restored to those monitoring devices. This conduct is completely untenable.

68

There is also no supporting data concerning the pH of the site to date. Despite the recordal at page 12 of the revised Envitech report that leachate from valley 1 and valley 2 have each been sampled and analysed monthly with temperature and pH of valley 2 leachate being tested daily, none of this corroborating data has been furnished by the Appellant in support of its allegations.

69

The allegations contained in paragraph 22.6.2 of the appeal are contradicted by the Phoenix Engineering report. This is also contradicted by the recordal of the views of the Envitech specialist at a meeting of 28 March 2017, where such views were minuted by the Appellant as follows:

> "*The pH levels are not the only cause of the odour and the most practical solution to prevent the odours and emissions is landfill gas extraction and combustion.* (paragraph 2.9 of the minutes prepared by the Appellant and page

106 of the urgent application papers before the High Court- annexure "U**HA17**" hereto).

70

Dr. J. McStay of WSP provides the following responses, as per his reports annexed hereto to the material portions of paragraphs 19 to 22 of the appeal.

71

As can be seen from Dr. McStay's report in response to Schoonraad's letter prepared on 31 October 2016, it is noted, as suggested by the DEA, that the waste treatment methodology of using lime or similar reagents to increase pH was undertaken predominantly to increase the allowable monthly loading of heavy metals permitted for disposal under regulatory process known as "delisting" by virtue of reducing the potentially leachable components in the waste stream. It was not undertaken as a means of controlling the formation of odorous compounds in the landfill.

72

There is therefore no major change in the pH that coincides with the implementation of the New Waste Regulations in valley 2 other than the probable disposal of a large volume of alkaline waste between December 2014 and July 2015. Alternatively, a significant volume of historically disposed of alkaline waste becoming saturated around this time and contributing to a short-lived increase in pH. From the subsequent rise in hydrogen sulphide, the waste stream most likely to cause an increase in pH would be an industrial source of waste gypsum, commonly in pH range of 10 to 12.

73

Dr. McStay comments that the Appellant considers that sulphur / sulphate containing boiler ash is a potential source, however, he states that these compounds generally have low solubility and have been disposed of and blended with other wastes for many years without obvious impacts. The Appellant's proposal that by gradually increasing the pH of the leachate by the addition of lime-treated wastes will resolve the problem itself and the generation of hydrogen sulphide will reduce over time is not supported by figure 5 to the Schoonraad letter dated 31 October 2016 which indicates that the only means of significantly reducing the activity of sulphide reducing bacteria is to drive the pH to a highly acidic condition of pH < 4. At pH9 sulphide reducing bacteria are reduced but still active.

74

It is Dr. McStay's professional opinion that odour problems at the landfill are most likely to have arisen from a build-up of leachate in the landfill cells due to inadequate leachate removal and treatment together with saturation and bacterial breakdown of a significant volume of sulphide containing waste within the landfill. The triggering events appear to have commenced in early 2015 with odorous gases being generated in significant concentrations in early 2016. Given the nature of the waste acceptance and leachate management practices of the Appellant, the events are considered by Dr. McStay to have been foreseeable and manageable to experienced landfill practitioners.

75

Dr. McStay also points out that treating all waste streams with lime is considered

unnecessary and ineffective as the lime has to be actively mixed into the moist waste at depths within the landfill so that it can achieve some degree of mixing in order to have any influence on the pH of the leachate. Long term (post-closure) stabilization of the leachates may eventually be achieved using this method but it will have little immediate impact on the generation of H2S and the bulk of the landfill itself. This measure is best described by Dr. McStay as being “cosmetic” in order to continue with active waste disposal and cannot be regarded as an intentional remediation measure. It should be noted that remedial pH controls can be undertaken independently and *in situ* within the waste pile without any form of ongoing waste disposal. The Appellant has not proposed any *in situ* remedial measures within the waste body to increase pH and therefore cannot view this strategy as being critical in reducing H2S within the landfill itself. **To propose that continued waste disposal is an essential remedial measure in order to solve the odour problems is clearly absurd**.

76

Dr. McStay further points out, *inter alia*, that no mass balance calculations are presented by the Appellant to estimate the mass of lime that would be needed to ameliorate the pH condition but it is considered to be a very large volume of reagent. In such a large body of historic waste, it is more likely that the pH would remain buffered within the historic range of pH values until the source of soluble sulphates has been removed and the landfill can finally evolve to a methanogenic condition.

77

Dr. McStay states that despite the limited nature of the leachate sampling analysis, it was clearly apparent by mid-2015 that there was significant chemical trends emerging

in the leachate data that should have triggered further investigation and corrective actions. **He contends that this can only be considered an oversight and negligence on the part of a waste operator**. Indeed, as pointed out with reference to paragraph 78 of the Appellant's answering affidavit in the urgent application, escalated sampling and analytical frequency of the pH of the leachate would have facilitated an earlier understanding of the circumstances that continue to impact the Shongweni site. The 2015 external audit report specifically stated there was a problem with the chemistry of the waste body.

78

Dr. McStay points out that it is inconceivable that Dr. Schooraad was not aware of the history of the waste streams at valley 2 and the existence of large volumes of potentially reactive sulphurous compounds which would eventually be subject to the action of sulphide-reducing bacteria once the waste became wet. As Dr. Schoonraad demonstrated a thorough understanding of the generation of H2S by SRB in the landfill context in his letter, it is puzzling why the Appellant was so slow in addressing the obvious odour problem emerging at SLS as its technical staff clearly understood the potential sources and reactions taking place within the landfill.

79

Dr. McStay confirms that, from the Phoenix Engineering report, the impact of the new waste regulations had **no causative role** in the generation of odorous compounds, this is with reference to the pH from 2013 to mid-2015, further corroborated by the Phoenix Engineering report which reviewed the pH data set over both valleys for the period of approximately eighteen years.

80

Dr. McStay avers that in order to demonstrate the active role played by the addition of lime, it would be necessary to compare pH with parameters such as dissolved calcium and alkalinity which would be indicative of an active role in buffering leachate pH**. It is therefore unproven that further alkaline treatment of new waste has played any role in reducing H2S emissions. There are also no restrictions on the Appellant treating the existing waste to achieve the same objective of additional pH treatment. It can only be assumed that the Appellant has no confidence in the effectiveness of the remedial measure or is unwilling to bear the cost of remediation without maintaining its revenue from waste disposal.**

81

In the premises, it is clear that the Appellant has no basis for the variation sought and accordingly the appeal falls to be dismissed.

82

The DEA approval of 14 June 2017, post the revised appeal, directs the Appellant to cease all trenching activities associated with the leachate and contaminated storm water on the waste body and accordingly precludes any such variation of the suspension decision in any event.

83

The Appellant contends that it is necessary to be granted permission to dispose of the contaminated storm water and excess leachate and brine back into the waste face due to the fact that it only received approval for the disposal at the listed facilities on

24 March 2017, which delay led to the accumulation of abnormally high quantities of liquids on site and further that alternatives which were identified and recently approved, including the Southern Waste Water Treatment Works were no longer capable or willing to accept effluent for various reasons of their own including capacity or required authorisations.

84

The Appellant contends that it continues to explore various options in that regard but has not been successful to date and in the absence of any viable sustainable alternatives, in an effort to avoid major environmental incidents, the Appellant has been maintaining the required freeboard on the contaminated storm water dams by tankering liquids offsite and treating and stabilising contaminated storm water back onto valley 2.

85

As at 12 June 2012, date of the revised appeal, the Appellant again states at paragraph 19.2 that the current scenario is not sustainable and in the event that an implementable alternative is not found as soon as possible, the likelihood of environmental harm as a result of the spill of contaminated storm water on site or even into the river is significant.

86

The approval at “RA.5” to the appeal is in fact dated 7 April 2017 and is a revision to the initial approval dated 24 March 2017. The approval is for the Appellant to dispose of leachate and contaminated storm water at any lawful treatment and / or disposal

facility regardless of the fact that the Appellant has not listed the facility in terms of the approval granted on 24 March 2017.

87

The Appellant has failed to disclose any facts whatsoever with regard to which facilities, including those not listed, have been approached, why authority has not been given and what efforts it has made to “explore various options in this regard”.

88

Indeed, the Appellant recorded that in respect of at least four facilities, it was awaiting responses regarding acceptance of its csw / leachate. In one instance, the Appellant was referred to Oricol.

89

This is excluding the fact that the Appellant’s own facility at Holfontein landfill was able to take contaminated storm water and leachate. On 11 November 2016, the Appellant noted that it was still awaiting responses from two facilities, and DCLM had given a tentative approval for receipt and, Southern Waste Water Treatment Works had indicated they were prepared to consider requests subject to compliance and in respect of Holfontein, Aloes and Visserhoek, facilities of the Appellant, acceptance was possible.

90

The Appellant has failed to establish what further efforts were taken since 11 November 2016 and what responses were in fact received or to provide proof of such

responses.

91

That the Appellant cannot be trusted with regard to this or other submissions made by the Appellant is confirmed by, *inter alia*, the following insofar as leachate and contaminated storm water is concerned:

91.1 The Appellant contended, under oath, on 1 June 2017 in an application instituted before the High Court of South Africa: Gauteng Division, that any further rain would spark an immediate crisis and that even without rain, the levels of contaminated storm water dams and leachate storage tanks will continue to rise simply by virtue of the fact that the site generates leachate on an ongoing basis and the leachate dams will overflow into the contaminated storm water dams if they overflow. The Appellant contended that if the contaminated storm water dams become any fuller, either because of leachate flowing into them or because of more rain, they would overflow into the river system and the Appellant warned of an impending environmental disaster.

91.2 On 7 June 2017, the Operations Director of the Appellant contended at the monitoring committee of 7 June 2017, that the leachate treatment plant was running at design capacity, brine was being transported offsite, that the Appellant was working on it improving efficiency of the LTP, and that leachate and csw was being tankered offsite and the dam and tank levels remained at freeboard levels <u>even after rain</u>.

91.3 When the Appellant was called upon on 12 June 2017 in terms of the provisions of the monitoring committee terms of reference to explain the discrepancy between the two statements, the Appellant responded that the statements made by the Operations Director were factually correct at the time that they were made and that the status *quo* of the liquid waste on 1 June 2017 when the affidavit was deposed to was materially different to the status *quo* which existed on 7 June 2017 because of the work which had been undertaken at the site during the period between those dates.

91.4 The Appellant contended that the management and levels of the Appellant's liquids on site is a moving target as the volumes increasing or decreasing depending on issues such as weather, the volumes of liquid produced by the site and the Appellant's ability to treat and remove liquids. The Appellant further contended that because of the unusually high rainfall between the period 13 and 16 May 2017, at the time the affidavit was deposed to on 1 June 2017, the critical levels and potential risks described therein were the reality which the site faced as at 1 June 2017, however, due to the fact that the rain had subsequently abated, and as a result of extensive efforts on its part to remove as much of the liquid waste as possible and lawfully dispose of it offsite by 7 June 2017, the situation was as described by Mr Vermeulen, namely that dam and tank levels remained at freeboard levels after rain.

91.5 The presentations subsequently circulated however again presented conflicting slides. Both referenced day 90 of 180 of the remedial plan and one slide stated dam and tank levels were maintained even after rains and the other stated they

were at critical levels because of the rain. Copies of the conflicting slides are annexed hereto marked "**UHA18**" and "**UHA19**".

91.6 No evidence or figures are provided by the Appellant to UHA NPC for the period 1 June 2017 to 7 June 2017 to demonstrate the correctness of this allegation and in any event, appears to be flatly contradicted by the allegations contained in paragraph 19.2 of the revised appeal which was signed on 12 June 2017.

92

Despite the Appellant in its report of 11 November 2016 to the DEA advising that Aloes and Visserhoek were capable of taking contaminated storm water and leachate, on 10 July 2017, the Appellant now advises that the facilities at those sites are engineered primarily to only cope with liquid arising from their own operations and accordingly it did not want to impact upon the liquid management plans and co-disposal ratios of those facilities.

93

In terms of paragraphs 5.2 and 5.3 of the proposed varied suspension notice, the Appellant seeks to vary the notice to the effect that it only to take reasonable measures to prevent the occurrence of nuisance conditions including malodours or health hazards, a dilution of the condition imposed in paragraph 5.1.5 of the license condition which is that the Appellant must prevent the occurrence of nuisance conditions or health hazards, which is also the condition appearing at paragraph 4.3 of the initial suspension decision.

94

The introduction of the condition at paragraph 5.2 of the Appellant's proposed suspension notice has been dealt with above and is inimical to the very purpose and terms of the original suspension, which is to cease the acceptance, treatment and disposal of waste on site. The introduction of paragraph 5.2 as a variation to the suspension decision, accordingly negates the entire suspension decision by permitting the receipt and treatment of new wastes including metal-containing wastes as a proposed remedial measure. The conditions accordingly at paragraphs 5.2 and 5.3 in substitution of those set out at paragraphs 4.2 and 4.3 are unacceptable.

95

The justification for the variation as set out in the Notice of Appeal is premised on a misrepresentation as to the true state of affairs, insufficient and incomplete data and / or incorrect scientific premises.

96

The appeal falls to be dismissed.

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C A NEL

MACGREGOR ERASMUS ATTORNEYS

DURBAN

12 JULY 2017