

IAQM Odour Guidance

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IAQM Guidance

- IAQM has previously contributed to the EPUK Planning Guidance for Air Quality Assessment and prepared the methodology for assessment of significance;
- IAQM has prepared guidance on assessment of construction dust;
- Both have been widely used by the consultancy community;
- IAQM in its role as a professional institute wishes to promote good practice amongst its members;
- Committee recognised there was a gap relating to odour assessment and planning;
- No intention to duplicate or overlap with current guidance – particularly from Environment Agency

IAQM Guidance Preparation

- Introductory meeting (this one!)
- Formation of working groups to address particular issues with a lead author;
- Consultation with wider membership/further meeting
- Finalisation of guidance

What Guidance Exists?

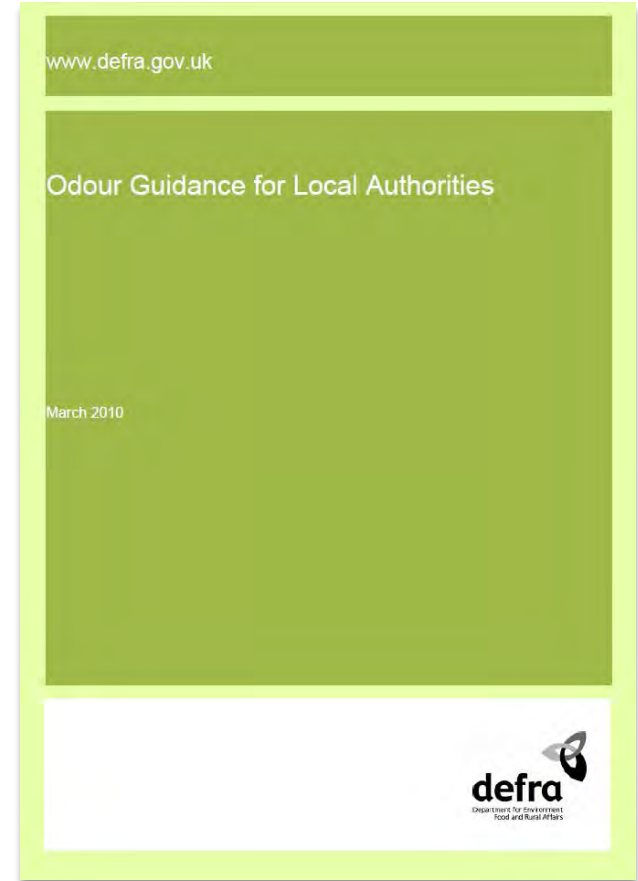
Environment Agency H4

- Applicable only to regulated processes
- Frequently questioned in its applicability to planning related odour issues
- Vague where it is providing advice on odour standards
- Mainly related to meeting permit conditions and not a “how to” guide



Defra Odour Guidance

- Main purpose is to “support local authorities in their regulatory roles”
- Does provide a very good background to the topic;
- Some limited information on assessment techniques but little specific guidance
- Other specific guidance available for kitchen odours and a Code of Practice relating to sewage works odours



Gaps in the current guidance

- No specific guidance relating to planning;
- Existing guidance does not provide detailed advice on assessment;
- Existing guidance is very much related to a specific context – i.e. permitting or statutory duties
- Existing guidance can be vague

Guidance – The Big Issues?

- Odour standards – what is significant impact?
- Odour measurements – how do we use these in our assessments?
- Odour modelling – exactly how do you approach this?
- Risk based assessment – defining a suitable and common approach?
- Odour management plans

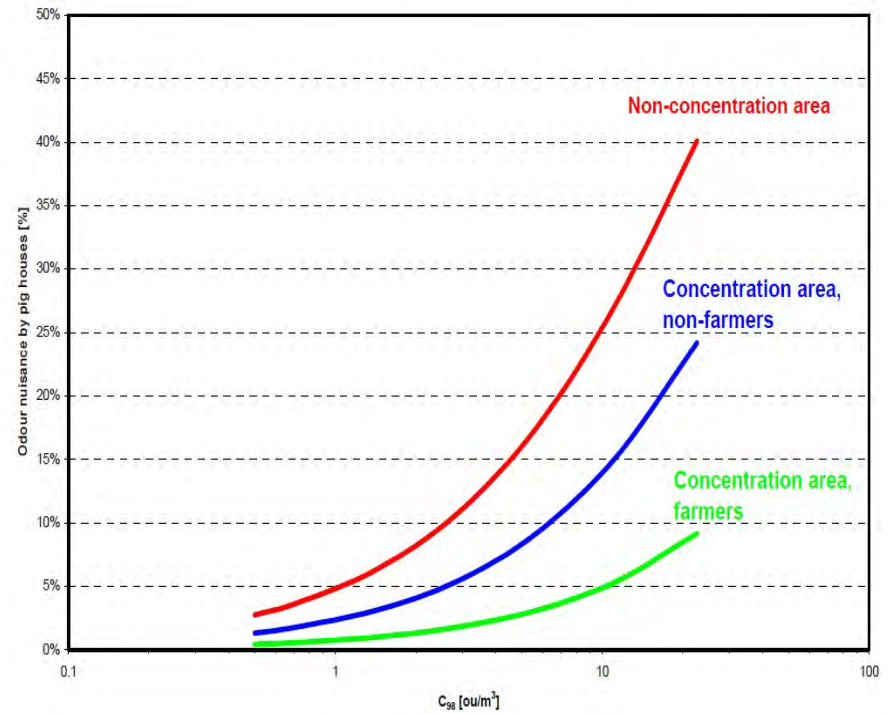
Odour Standards – What I think I know!

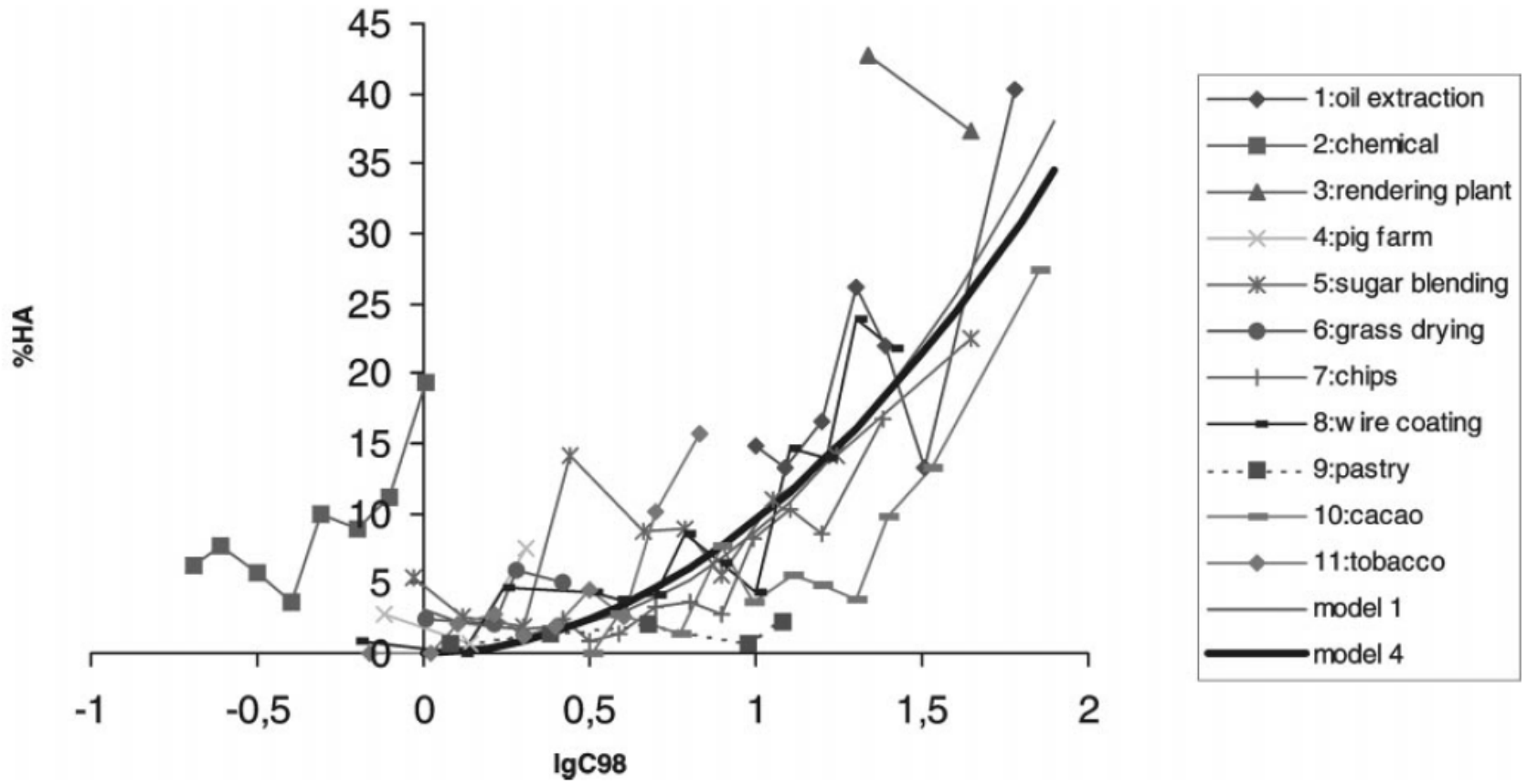
- Numerical Standards first applied in planning case at Newbiggin-by-the-Sea Inquiry – 1993 – said to be based on research at 200 sites in Holland, Inspector decided $5\text{ou}/\text{m}^3$ was reasonable and cautious – frequently incorrectly cited as $5\text{-}10\text{ou}/\text{m}^3$
- No details on the approach, the Complex1 model was used at the appeal but the research apparently used a Dutch LTDF model. No details on model inputs or set up.
- Important to note that the standard is based on the relationship between a modelled value and observed reaction to odour

Newbiggin	$2.5\text{ou}_E/\text{m}^3$	2002 H4 draft stated that original values were expressed as Dutch Odour Units – need to be halved to get ou_E/m^3
UKWIR	5	Below this level complaints are rare
H4 (Above this level indicates likelihood of unacceptable odour pollution)	6	Less offensive
	3	Moderately offensive
	1.5	Less offensive

Basis of H4 standards

- Based on Dutch study in 1999-2000 looking at odours from pig production
- $1.5 \text{ ou}_E/\text{m}^3$ based on the level where 10% of the general population was “annoyed”
- $3 \text{ ou}_E/\text{m}^3$ based on level where 10% of habituated population are annoyed
- $6 \text{ ou}_E/\text{m}^3$ based on this and other Dutch research where 10% annoyance level related to 10% annoyance (no population defined)

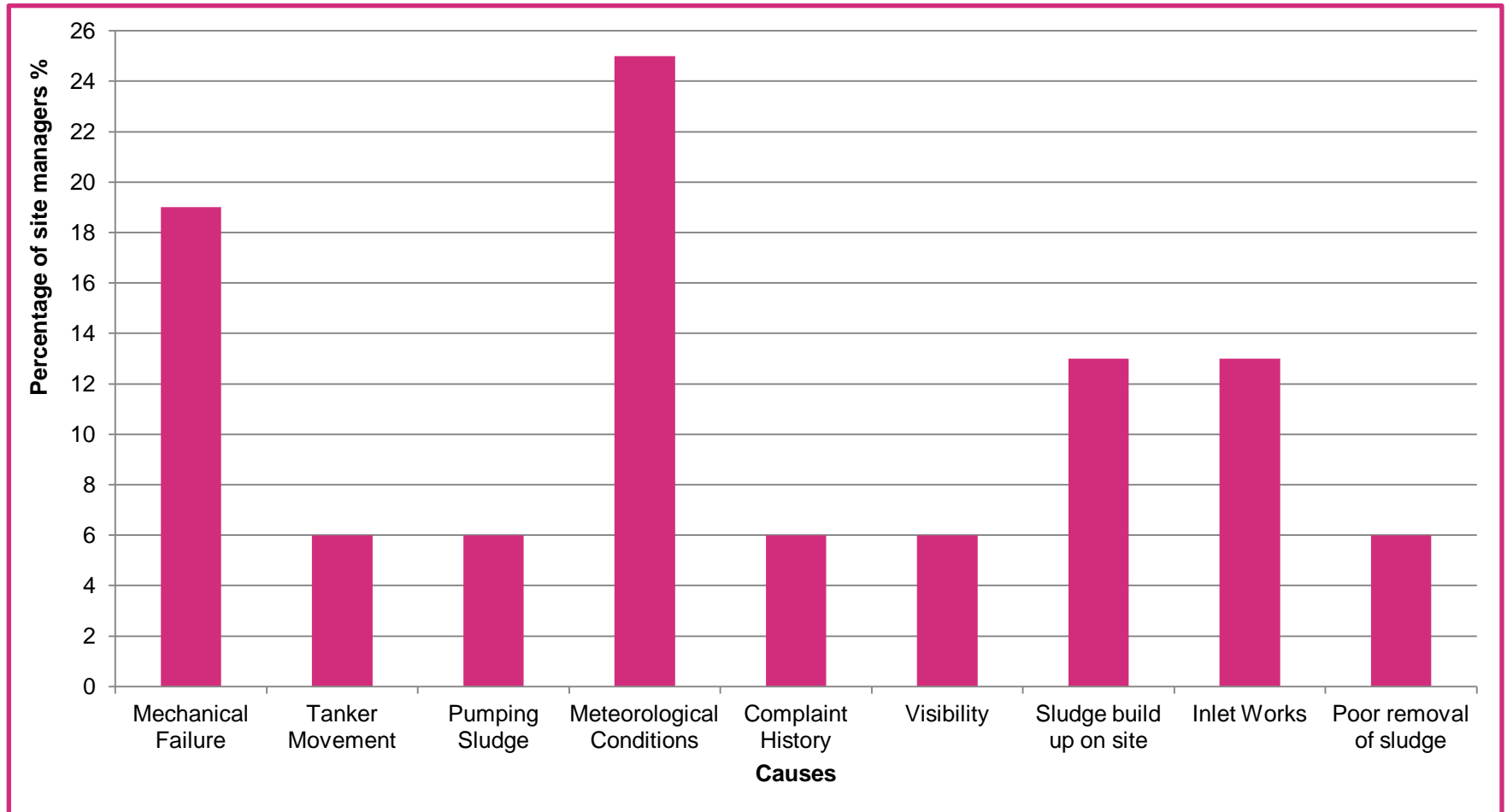




How well do standards perform?

STW	Total No. of complaints	No. of complaint years	No. of complaints at unique postcodes	Complaints within odour concentrations of $\geq 1.5 \text{ou}_E\text{m}^3$				
				No.	%	$>5 \text{ou}_E\text{m}^3$	$5-3 \text{ou}_E\text{m}^3$	$3-1.5 \text{ou}_E\text{m}^3$
Barrow	299	9	29	1	3%	-	-	1
Beckton	60	5	47	34	72%	7	8	19
Beverley	85	6	38	10	36%	-	3	7
Crossness	99	5	70	4	6%	1	-	3
Davyhulme	45	10	36	30	83%	16	4	10
Earlwood	51	5	33	30	91%	20	6	4
Frindsbury	5	3	5	0	0%	-	-	-
Frome	48	10	15	13	87%	11	-	2
Gillingham	31	10	12	0	0%	-	-	-
Gowerton	4	4	4	1	25%	-	1	-
Guildford	38	6	19	15	79%	6	3	6
Hogsmill	282	9	95	29	31%	2	7	20
Kendal	44	6	13	5	38%	1	1	3
Saltend	474	6	43	2	5%	-	1	2
Strongford	28	6	20	1	5%	1	-	-

And can modelling really assess odour problems?



And if it can – how do you interpret results?



No dimensions are to be scaled from this drawing. All dimensions are to be checked on site. Area measurements for indicative purposes only.
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Some obvious issues!

- Standards based on relationships between modelled result and observed community reaction;
- Variable experience in reaction to “same” odour levels
- Should model set-up therefore reflect the original modelling approach as model choice can influence results;
- Community reactions are based on different factors – annoyance, complaints etc,
- Modelling community has no consistent approach for assessment and consequently may be significant variation in results between two experts

Odour Measurements

- Not proposing a “how to guidance on odour measurement” but maybe a standard specification?
- How to handle variations between measurements?
- Whether seasonal variation is an important factor?



Other issues

- Guidance on how to undertake risk based assessments;
- Accounting for uncertainty – can lines be drawn on a map?
- Use of buffer zones?
- Minimum separation distances?
- Compilation of odour management plans?

Sealed Envelopes

- Connected with an MSc research project at Royal Holloway College regarding the examination of how presentation of data influences choices in modelling.
- Also looking for assistance – would you be prepared to undertake a short modelling assessment (odour or roads related) – designed to take a short amount of time and all data provided.
- If so – please contact me – michael.bull@arup.com