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TO;` E.P.A
Headquaters
P.O Box 3000
Johnstown Castle

FROM; James Rountree
Sellar,
Nobber,
Co. Meath

14/12/07

RE; Poolbeg Incinerator Licence Application

Reference No WO 232-01

Dear Sir/Madam

Please find enclosed submission containing observations for consideration also please find enclosed cheque €190.00 + €10-00 note.

TOTAL €200-00

Yours,

[redacted]

JAMES ROUNTREE

SUBMISSION

RE; POOLBEG INCINERATOR

I am a dairy farmer from North County Meath with no qualifications or expertise in any field. I am putting forward concerns as a member of the public for your consideration relating to environmental responsibility of the state and the incinerator company to the farming community. Also personal observations relevant to the consideration of particulate matter emissions and air quality. Please note comments in my earlier submission to Bord Pleanala about Chromium and Cadmium monitoring. Sentinel monitoring of birds and animals for toxins, etc, also, the licence must contain a direct reference to the formation of Dixon-like compounds, filtration failure, and their release.

1. In the unlikely event of a serious toxic emission release, there is a grey area of who is responsible when authorities restrict farmers on the basis of environmental concerns without the evidence of a conclusive test. It appears that this is deliberately dismissed as a civil matter. And if it ever arises it will be a horrendous sting for the affected member of the farming community, where the principal parties disown all responsibility and the restricted farmer is faced down. Restricted insurance will be operative here. Please refer to my comments to Bord Pleanala.
2. There is serious contention between all parties and resistance to the idea of testing for PM 2.5. PM 1and PM 0.1 ultrafine dust. Please note that I mentioned the Owens System Jet Dust Collector to Bord Pleanala for collecting dust samples in ambient air. The reference to this is from the book "The Smoke Problem of Great Cities" by Sir Napier Shaw and J.S. Owens published by Constable 1925, available as a rare book reprint at www.umi.com I believe this book disappeared from public access in the lead up to the British Clean Air Act 1956 during the 1950s in a political quid pro quo with industry and I think historians need to look closely at this because of the important lessons that can be learned for future reference. Now, that is as far as I want to go on the subject of those events.
3. Relevant to particulate matter emissions, we need to look throughout industry at all processes where dust; particularly fine dust is removed from the process. I believe there are excellent measures in the electronics industry and they could teach us a lot.

There are natural sources of airborne dust in the PM10 to PM 0.1 range. Desert and volcanic dust that turns the midday sun red. (Particle size greater thanPM1 ! will have a foggy grey effect) Associated respiratory problems require suitable dust masks. Also motor vehicle precautions are needed too.

e.g. Russian fuel filter paper elements are thought to be the highest standard in the world. The old-fashioned oil bath air filter is considered more effective from a volume of dust consideration and (most importantly for us) from a very fine dust perspective. And the oil centrifuge is the best engine oil filter.

I am only a farmer and not a scientist, but I am very curious about the possibility that we are overlooking something here that would be of benefit in monitoring city air quality on a continuous basis. What kind of result would we get if an oil bath air filter and a centrifuge were operated in combination 24hours/day and 365 days/year. Obviously, there would be pollutants dissolved in the oil and a caked deposit on the centrifuge wall. And what would the analysis show? It would certainly make everyone more appreciative of air quality. Now that I have said this (for what it's worth), can someone else suggest another apparatus and maybe we should have a citizen's city air pollution testing competition for a simple, practical 365-day test with I the ultimate goal of being able collect a good sample down to PM 0.1

The public would prefer to have a continually running environmental check on air quality. Spot checks are staccato information. There is nothing wrong with them but there is limitation, which should not be bolstered by arrogances. I am a concerned citizen and I want to be constructive about this

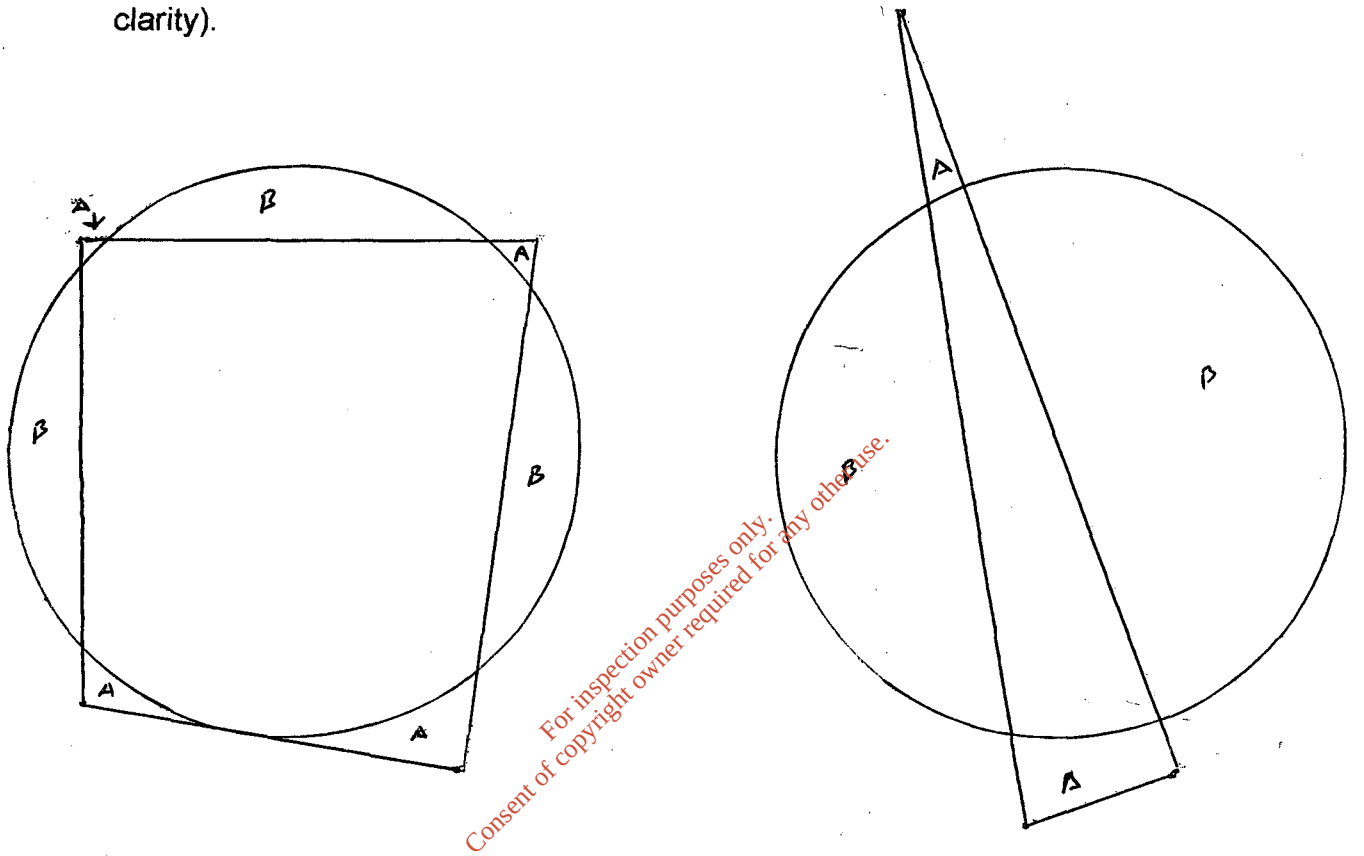
4. Finally I want to mention a suggested rule of thumb for estimating particle surface area for grided microscope photographs from glass slides. e.g. from the Owens System. This method really belongs in the bad old days of the Slide Rule and any consistent error needs to be spotted and corrected.

There is no reference for this. Basically the idea is to find the circle that can be put (altered) into the shape of the 2D outline image of the particle (as if it were a piece of string). Statistically we can expect that if the dust speck is rotated 90 degrees that we will have the same outline. This not true of ten specks but it true of 1000. We are presuming or anticipating that we are dealing with a statistically composite image. The corresponding sphere to this circle has the required surface area.

Fibres and flaky specks are difficulty cases. Surface tension and gravity may cause a speck of liquid dust to flattened somewhat on a glass surface. Activated carbon specks are a different case and must be observed and reported separately.

Indicative and comparative surface area estimates can be generated and this simple estimate should be evaluated for what role it could play in providing more information about fine dust samples. Empirical figures will only come from a 3D electron microscope and computer examination.

NOTE – Microscope Perspective. The texture of the particle surface cannot be considered dure to the limitation of light. Only the general shape. This is a resolution limitation. There is a fine haze starting at 0.6 microns progressing to total invisibility in UV Photographs beyond 0.01 micron, where any particles would be dark matter that could only seen by an electron.micrscope. (Surface area estimation does help confirm measurement and so does coloured light testing except at the UV end of the scale, and the microscope operator's vision is critical and enlargement of photographs contributes nothing to clarity).



RATIO A : B should be 1 : 3 or more.
(Not to scale)

5. This now leads on to a very interesting question;- Is there a relationship between the burden of pollutants carried by particulate matter emissions and what is absorbed by the injected activated carbon in the incinerator scrubbing process on a surface area basis? If there is, are we condemned to living with a proportion of unscrubbable pollution? Are we going to check this with an electron microscope? Or will this question be dismissed as being too difficult to peruse? PERUSE Public confidence is an issue. As the particle size reduces, the distribution and consequent potency of pollutants increases even though the volume is apparently less relevant.

Please note these observations for consideration in the monitoring and licence considerations for the Poolbeg Incinerator.

Yours faithfully

[redacted]

JAMES ROUNTREE