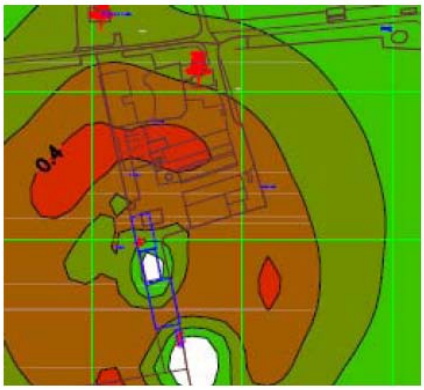
H & A Wason

Controlling Odour from Fishmeal Process

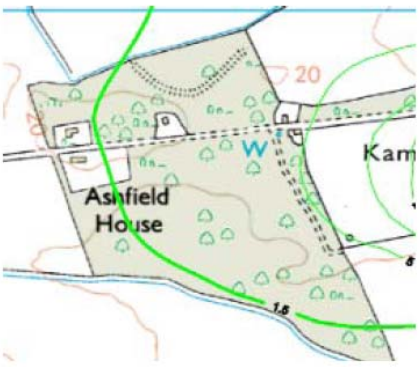
H & A Wason (Kamehill) Ltd operate a small fish meal processing plant at Kamehill in East Lothian Scotland. The process is located in a rural area with scattered isolated houses. The process has been the subject of sporadic odour complaint. Prior to the Airshe'd's involvement the operators had been prosecuted for conducting a prescribed process, without authorisation from the Scottish Environment Protection Agency (SEPA). The Airshed sought to rebuild a working relationship between the regulator and the operator, and to agree practical measures in order to comply with outstanding Notices and Sheriff Court instructions.

The process consists of three batch cookers where evaporated moisture is condensed and stored in bulk tanks along with the treated runoff liquor. The highly odorous non condensable gases from the cookers are passed to the steam raising boiler and used as primary air. The residual combustion gases are dispersed by a 12.5m stack. On completion of the batch cooking, the dry product is cooled and milled within process building. Both buildings are sealed to minimise fugitive releases. (See photo of smoke test to ensure the buildings are air tight). The buildings are kept under slight negative pressure. The foul air from the buildings is extracted to a bio-filter. The residual gases from the bio-filter are dispersed from two stacks terminating 10m above local ground level.

Initial odour tests conducted at the site confirmed odour condensate inlet concentrations of up to 500,000 OU_E/m^3 and building air ~10,000 OU_E/m^3. The combustion of the condensate achieved >95% abatement and a similar abatement value for the bio-filter treating the room air. These techniques therefore satisfy the BAT requirements of Secretary of State's Guidance PG6/19(05).



An odour impact assessment was conducted using ADMS 3.3 to determine if the process complied with SEPA's odour benchmarks. Two odour emission scenarios were assessed: no abatement and with abatement. The results from the dispersion model indicate that before the process upgrading, it is likely that there were 7 properties where residents had reasonable cause for annoyance due to odour. The odour predictions with current abatement indicates that odour is highly unlikely to exceed $1.5OU_E/m^3$ 98%ile at the nearest sensitive receptor, provided there are no significant fugitive emissions from the process.



A subsequent episode of odour complaints was attributed to failure of the bio-filter, due to the top section of the bark medium drying out. Remedial measures included improved irrigation of the bio-filter bed and refrigeration of raw material in warmer weather. Subsequent odour tests have confirmed that process emissions receive adequate abatement. Following these tests SEPA granted authorisation and the process is now operating in compliance with permit conditions.

The Airshed

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