Permitting Decisions- Variation

We have decided to grant the variation for Hibernia Way Speciality Chemical Manufacturer operated by M & I Materials Limited.

The variation number is EPR/BL9640IM/V009.

The variation is for process changes to allow increased and varied production:

- Addition of new reactor, T39, to Line 3 to increase production capacity.
- Addition of new distillation column, T40, to Line 1 to increase the range of products.
- Relocation of 12m^3 stainless steel carboxylic acid storage tank, T30, from its location which will be taken by new reactor, T39, to an external location within a new purpose-built epoxy coated chemical resistant concrete bund.
- Addition of new acid loading system which will reside adjacent to the Line 3 reactors and will ensure that Line 3 will have its own dedicated loading system. This will decouple the dependence of Line 3 loading on Lines 1 and 2 operational timings.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document provides a record of the decision-making process. It

- highlights key issues in the determination
- summarises the decision making process in the decision considerations section to show how the main relevant factors have been taken into account
- shows how we have considered the consultation responses

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit and the variation notice.

Key issues of the decision

Gaseous Discharges:

The applicant submitted an air dispersion modelling report which proposed there was no potential adverse impact on sensitive human receptors from the discharge of volatile organic compounds (VOCs) from the permitted process (including proposed process changes). There are no environmental standards against which impact from VOCs on habitats sites are assessed. We sent a Stage 1 Habitats Assessment to Natural England for information confirming this.

The applicant used an historical analysis of speciated VOCs which they proposed continued to best represent discharges from site to carry out the air dispersion modelling. They modelled a maximum of two process lines in operation at the same time as all three process lines cannot be operated simultaneously.

	Amount in Exhaust Gas	
VOC	Conc (µg/m^3)	Proportion (%)
Acetic Acid	7.14	6.6
Heptanoic Acid	60.78	56.4
Isobutyric Acid	2.13	2.0
Isocaproic Acid	8.57	7.9
Isovaleric Acid	3.68	3.4
n-butyric Acid	4.68	4.3
n-caproic Acid	6.75	6.3
n-valeric Acid	7.20	6.7
Propionic Acid	6.93	6.4
TOTAL	107.85	100.0

They assessed potential impact against the short-term and long-term environmental standards for acetic acid as that compound is the only one of their speciated VOCs with approved environmental standards in our guidance.

There were two issues which this assessment process:

- acetic acid comprised only 6.6% of the speciated VOCs.
- the assessment considered only the impact of that 6.6% of the discharge due to acetic acid rather than assessing the impact of 100% of the emissions assumed to be acetic acid.

Both these issues were raised by UKHSA in their response to the consultation on this application.

The speciation of the VOCs provided by M&I Materials demonstrated that only 6.6% of the total VOCs was composed of acetic acid. Of the remaining VOCs, heptanoic acid composed 56.4% of the total and its potential impact was not being assessed as it had no current environmental assessment level.

We considered whether assessing the VOC release at 100% acetic acid fully addressed the impact of heptanoic acid and decided it did not.

The hazard risk phrases for acetic acid are:

- H226 Flammable liquid and vapour.
- H314 Severe skin burns and eye damage.

- H318 Causes serious eye damage.

The hazard risk phrases for heptanoic acid are:

- H314 Severe skin burns and eye damage.
- H318 Causes serious eye damage
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.

Assuming acetic acid as comprising 100% of the VOC emissions and assessing against that would not address the inhalation risks that might be present from releasing heptanoic acid.

We therefore considered other compounds which might have similar inhalation risks as heptanoic acid, and which had current approved environmental assessment levels within the Environment Agency risk assessment guidance:

- Acrylic Acid H226, H302, H312, H314, H318, H332, H335, H410

  Short term EAL = 6,000 µg/m^3 Long term EAL = 300 µg/m^3

and

- Acetaldehyde H224, H319, H335, H351

  Short term EAL = 9,200 µg/m^3 Long term EAL = 370 µg/m^3

and

- Ammonia H280, H314, H331, H410

  Short term EAL = 2,500 µg/m^3 Long term EAL = 180 µg/m^3.

Of these, only acrylic acid has similar chemical structure to heptanoic acid and its environmental assessment levels were higher than those for acetic acid against which releases had previously been assessed.

We also assessed hazard risk phrases of the other speciated VOCs in the emission from the site:

- Isobutyric acid (2.0% of total VOVs) H226, H302, H311, H314, H318.
- Isocaproic acid (7.9% of total VOCs) H311, H314, H318.
- Isovaleric acid (3.4% of total VOCs) H227, H315, H319.
- N-butyric acid (4.3% of total VOCs) H227, H302, H314, H335, H318.
- N-caproic acid (6.3% of total VOCs) H311, H314.
- N-valeric acid (6.7% of total VOCs) H314, H318, H412.
- Propionic acid (6.4% of total VOCs) H226, H314, H318, H335.

We proposed that, on the data available, acrylic acid would be the most appropriate surrogate proxy to use for the assessment of potential impacts of heptanoic acid and the other speciated VOCs on human health.

We sought further information from the European Chemicals Agency (ECHA) database on heptanoic acid (Registration Dossier - ECHA (europa.eu)) to determine if there were any derived no effect levels (DNEL) relating to heptanoic acid that could be used to derive environmental assessment levels.

In relation to ‘general population – hazard via inhalation route’ there is a DNEL for heptanoic acid for long term exposure of 8.7 mg/m^3 (8,700 µg/m^3). This DNEL is significantly higher than the

environmental assessment levels for the species being considered as proxy substitutes for heptanoic acid.

In the case of acute/short term exposure, no data are given for hazard assessment as ECHA states “hazard unknown but no further hazard information necessary as no exposure expected”.

There was insufficient evidence that the published ECHA DNEL had been derived using toxicological studies that fully implement the protocols that we would feel are necessary to allow a full audit of the correct applicability of the data. We therefore did not propose to use these data for further assessment of the potential risks from heptanoic acid.

The applicant then derived environmental assessment levels (EALs) for heptanoic acid which was the largest VOC component of the discharge and proposed to use these to assess impact assuming all gaseous discharges were heptanoic acid. They did not use our current approved methodology for deriving EALs and instead used an approach based on Protective Action Criteria (PAC) defined by the US Department of Energy.

They proposed as environmental assessment levels for heptanoic acid:

- Short term (1-hour) EAL = 2,100 µg/m^3 Long term (annual average) EAL = 70 µg/m^3

M&I Materials stated that the PAC are the only inhalation exposure criteria available for the specific pollutant and therefore considered suitable for assessment in lieu of other information.

They further stated that the EALs were derived in the following manner:

- The Protective Action Criteria (PAC) for heptanoic acid was defined by the US Department of Energy as 21,000µg/m^3 (https://edms3.energy.gov/pac/Search/Reports/1460).
- IPPC H1 indicated that a short term EAL could be derived by dividing a 1-hour exposure limit by 10. This resulted in a 1-hour mean EAL of 2,100µg/m^3.
- Where a 1-hour exposure limit has not been defined, IPPC H1 indicates that this can be derived by multiplying the 8-hour exposure limit by three. Applying this relationship in reverse provided an 8-hour exposure limit of 7,000µg/m^3.
- IPPC H1 indicated that a long term EAL can be derived by dividing an 8-hour exposure limit by 100. This resulted in an annual mean EAL of 70µg/m^3.

These environmental assessment levels proposed by M&I Materials are lower than:

- Those defined for acetic acid (6.6% of total VOCs) in our current guidance (Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk)).
- Those previously defined for propionic acid (6.4% of total VOCs) in our withdrawn guidance (H1 Environmental Assessment and Appraisal of BAT Updated, July 2003 (sepa.org.uk)).
- Those defined for acrylic acid, our proposal for the most appropriate surrogate proxy for heptanoic acid (56.4% of total VOCs) from those species with defined EALs in our current guidance, namely acrylic acid.
- The DNEL in ECHA for long term exposure hazard from heptanoic acid to the general public via the inhalation route.

We acknowledged that the methodology proposed by the operator was not aligned with the Environment Agency’s guidance on derivation of EALs (reference is made to the Environment Agency’s web guidance Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk), Ref. 1), as the proposed EALs were derived according to a methodology that has been now withdrawn.

However, our guidance still includes the principle of referring to proxy components with established EALs, which have similar or worse risk profiles to the chemical species that are expected to be released.

According to this principle, we had identified acrylic acid as the most appropriate surrogate proxy to use for assessment of potential impacts of heptanoic acid and other speciated VOCs on human health. However, EALs derived by the applicant were tighter than those for acrylic acid.

We were minded to accept the environmental assessment levels proposed by the Operator for heptanoic acid, the predominant compound (56.4% of total) of the speciated VOCs and determine potential gaseous impact on that basis.

We approached UKHSA for consultation on their approval of these derived EALs.

UKHSA did not formally respond to the substance of the consultation request but raised further questions on the applicability of heptanoic acid as the proxy surrogate and the potential for assessment of the impact of all speciated VOCs individually.

Because UKHSA did not formally respond to the proposal to accept the operator's derived EALs and because we therefore decided to follow an alternative approach that did not involve these derived EALs, we have not audited the methodology proposed by the operator in deriving the EALs for heptanoic acid.

Following further review of the hazard risk phrases, we adopted an alternative approach which took into account the UKHSA concerns.

1. There were a range of hazard phrases for each of the speciated VOCs with only some shared amongst chemical species. This could have led to concern that the most significant potential risks were not being considered if the speciated VOC emissions were assessed as 100% of a particular species which may not exhibit all the risk phrases of the other speciated VOCs.

   We noted that, of the chemicals for which we currently publish approved EALs:

   - Acrylic acid was an adequate substitute for heptanoic acid, iso-valeric acid, n-butyric acid, n-valeric acid and propionic acid as all these substances carry the same or less hazardous risk phrases. However, acrylic acid is not as good a substitute for iso-butyric acid, iso-caproic acid and n-caproic acid as they carry H311 - toxic in contact with skin.
   - A better proxy for these latter substances would be vinyl chloride for which there are approved recently derived EALs using the hazard characterisation method for determining Tolerable Concentration in Air (TCA). Hazard phrases for vinyl chloride are H225, H301, H311, H331, H370 – significantly more hazardous than any of the speciated VOCs and carrying the equivalent skin toxicity hazard phrase for iso-butyric acid, iso-caproic acid and n-caproic acid.
   - To assess the risks of the speciated VOCs by inclusion of the risk phrase, H311, would be a conservative worst-case scenario as it is unproven that the gaseous release of these VOCs would necessarily result in any significant impact due to skin contact.
   - Acetic acid had its own agreed EALs within the Environment Agency guidance.

2. We categorised the speciated VOCs into three groupings based on their risk phrases and the most similar surrogate chemical with similar risk phrases that currently had approved EALs in Environment Agency guidance. This meant that no new derived EALs were required. The Process Contributions (PCs) for each group were combined to assess overall potential impact. This methodology mirrors our approach when we use benzene as the surrogate for speciated VOCs without EALs of their own.
   i. Group 1:

Acetic acid.
Risk phrases = H226 (flammable liquid and vapour), H314 (severe skin burns and eye damage), H318 (causes serious eye damage).

EAL: Long term (annual) = 250 µg/m^3; Short term (1-hour) = 3,700 µg/m^3.

ii. Group 2:

Acrylic acid.
EAL: Long term (annual) = 300 µg/m^3; Short term (1-hour) = 6,000 µg/m^3.
Risk phrases = H226 (flammable liquid and vapour), H302 (harmful if swallowed), H312 (harmful in contact with skin). H314 (causes severe skin burns and eye damage), H318, H332 (harmful if inhaled), H335 (may cause respiratory irritation), H410 (very toxic to aquatic life with long lasting effects).
Use as surrogate for:

- Heptanoic acid — Risk phrases = H314, H318, H332, H335
- Iso-valeric acid — Risk phrases = H227 (combustible liquid), H314, H318.
- N-butyric acid — Risk phrases = H227, H302, H314, H318, H335.
- N-valeric acid — Risk phrases = H314, H318, H412.
- Propionic acid — Risk phrases = H226, H314, H318, H335.

iii. Group 3:

Vinyl chloride.
EAL: Long term (annual) = 10 µg/m^3; Short term (24-hour) = 1,300 µg/m^3.
Short Term (1-hour) = 2,203 µg/m^3.
Risk phrases = H225 (highly flammable liquid and vapour), H301 (toxic if swallowed), H311 (toxic in contact with skin), H331 (toxic if inhaled), H370 (causes damage to organs).
Use as surrogate for:

- Iso-butyric acid — Risk phrases = H226, H302, H311, H314, H318.
- Iso-caproic acid — Risk phrases = H311, H314, H318.
- N-caproic acid — Risk phrases = H311, H314.

3. We assessed significance of each VOC group defined above using the process contribution (PC) calculated by M&I Materials for acetic acid and carrying out a pro-rata calculation to determine the PC for each VOC group based on the relative proportions of the VOCs in each group compared with that of acetic acid.

4. The assessments of PC and Predicted Environmental Concentration (PEC) against the relevant EALs indicated that the predicted emissions from the M&I Materials would not risk significant impact. The maximum PEC is 4.4% of the long-term EAL so we could be confident that there is no risk of exceeding the long-term EAL even when using the worst case, vinyl chloride, surrogate substitute. In the case of the speciated VOCs, we have taken the background concentrations to be zero. We have reviewed current permits in the surrounding area and consider this to be valid.

Receptor	Speciated VOC or Surrogate Chemical	Concentration ($\mu g/m^3$)	Relative Percentage (%)	PC Long Term	EAL Long Term	% PC/EAL	Is % PC/EAL <1%	PC Short Term	EAL Short Term	% PC/EAL	Is % PC/EAL <10%	Background Concentration ($\mu g/m^3$)	PEC ($\mu g/m^3$) Long Term	% PEC/EAL Long Term	Is % PEC/EAL <70%
R2	Acetic Acid	7.14	6.6	0.18	250	0.07	YES	22.70	3,700	0.61	YES	0	0.18	0.07	YES
	Acrylic Acid Surrogates	83.27	77.2	2.11	300	0.70	YES	265.50	6,000	4.43	YES	0	2.11	0.70	YES
	Vinyl Chloride Surrogates	17.45	16.2	0.44	10	4.40	NO	55.72	2,203	2.53	YES	0	0.44	4.40	YES
R3	Acetic Acid	7.14	6.6	0.08	250	0.03	YES	20.67	3,700	0.56	YES	0	0.08	0.03	YES
	Acrylic Acid Surrogates	83.27	77.2	0.94	300	0.31	YES	241.78	6,000	4.03	YES	0	0.94	0.31	YES
	Vinyl Chloride Surrogates	17.45	16.2	0.19	10	1.90	NO	50.74	2,203	2.30	YES	0	0.19	1.90	YES
R4	Acetic Acid	7.14	6.6	0.09	250	0.04	YES	9.48	3,700	0.26	YES	0	0.09	0.04	YES
	Acrylic Acid Surrogates	83.27	77.2	1.05	300	0.35	YES	110.89	6,000	1.85	YES	0	1.05	0.35	YES
	Vinyl Chloride Surrogates	17.45	16.2	0.22	10	2.21	NO	23.27	2,203	1.06	YES	0	0.22	2.21	YES

Based on this approach, we have assessed there will be no significant adverse impact from the gaseous releases on human health receptors.

We have included an improvement condition in the varied permit requiring the operator to carry out sufficient analyses of its gaseous emissions following implementation of the process changes and use these data to verify the conclusions of the risk assessment for gaseous releases submitted in the permit variation application.

Should the results of the gaseous analyses show that release concentrations are greater than expected or the range of speciated VOCs is different than expected increasing any environmental risk, the operator must propose process improvements or use of additional abatement systems to reduce that risk to acceptable limits.

Discharges to Sewer.

The installation currently generates effluent which is discharged to sewer. Currently, the maximum daily volume of effluent produced when Lines 1-3 are in operation with 13.5-hour batch time is approximately 7.5m^3 of process effluent per day. Following the changes permitted in this permit variation, this maximum effluent volume would increase to about 9.4m^3 per day.

The wastewater generated by the installation is a consequence of its synthetic ester production processes. Water formed in the reaction vessel during the esterification process boils off, together with some fatty acid. This is passed through the condenser and is separated in a tank under gravity with the acid being returned to the reactor and wastewater being passed via a holding tank where it is neutralised through a limestone bed to give a ten-fold reduction in acid value which is monitored regularly before release to the onsite foul drain. There are no other processes that give rise to effluent generated by the activity such as washdown of equipment etc.

The overall site has a trade effluent discharge consent from United Utilities (Consent Ref 694TLS26M039) that limits total site wide releases to 20m^3 per day. Process effluent from the regulated installation joins the wider site combined drainage before discharge via the consented release point to public sewer. The introduction of a third reactor under this variation will result in an approximately 25% increase in emissions of process effluent from the regulated installation (EPR/BL9640IM/V009) that contributes to the overall site discharge. Trade effluent from the installation would therefore equate to around 47% of the total permissible daily volume for the site.

The site effluent is discharged from M&I Materials to the United Utilities Waste Water Treatment Plant at Rivers Lane Davyhulme M41 7JB where it undergoes further treatment:

- physical screening of the inlet.
- both primary and secondary dosing units to remove phosphorous.
- settlement tanks, activated sludge plants and a mechanically aerated oxidation sludge treatment

(sludges pumped from the settlement tanks are treated via screens, blending tanks, drum thickeners and anaerobic digesters before dewatering and centrifuge to generate sludge cake).

Following these treatment stages, treated sewage is discharged by United Utilities into the Manchester Ship Canal under the terms of their own environmental permit.

The operator has used their raw materials inventory and analyses of effluents to assess the components within the effluent discharge as:

- Pentaerythritol — A polyol — Non-hazardous.
- 2,2-dimethylpropane-1,3-diol — A polyol — Hazard risk H318.
- N-heptanoic acid — Fatty acid — Hazard risk H332, H314, H318, H335.
- 2 ethyl hexanoic acid — Fatty acid — Hazard risk H361d.
- Pelargonic acid — Fatty acid — Hazard risk H315, H319, H412.

Of these, the most potentially hazardous to ecological receptors is the pelargonic acid with its H412 risk phrase – harmful to aquatic life.

Of the chemical inventory reviewed no substances could be screened using the Environment Agency's H1 screening method as no environmental quality standards (EQS) are available for these. The effluent's chemical constituents detailed above do not feature on the EA priority substance or environmental assessment level database. In addition, all these substances, including the pelargonic acid, are already discharged from the M&I Materials site to the United Utilities treatment plant under the existing permitted operation.

The operator proposed justification that the substances released to sewer would not be of significant concern for the receiving waters. They carried out a qualitative assessment of impact from discharge of its site effluent to appraise potential risks.

The two polyols and the fatty acids described are not substances of concern so would be considered only as an issue with respect to their chemical oxygen demand (COD) and biochemical oxygen demand (BOD) - which we do not consider for emissions to waste water treatment works with biotreatment.

Pelargonic acid is of concern as it carries the H412 risk phrase but chemical data record systems such as Chemspider and material safety data sheets for pelargonic acid (such as that published by Sigma Aldrich) also states that pelargonic acid is readily biodegradable and predicts pelargonic acid to be readily biodegradable. A review of predicted environmental properties (on Chemspider) has pelargonic acid as more easily removed in wastewater treatment than glucose or fructose. It is considered unlikely that the fatty acids, including pelargonic acid, would reach the receiving waters (Manchester Ship Canal) in any significant concentration.

All fatty acids are mildly acidic and will impact on pH. As discussed earlier, the effluent is neutralised on site in a limestone bed to remove remaining acid. Any remaining acidity post the limestone bed stage would buffer readily when mixed with combined flows from the rest of the site and within the sewer network beyond the site and ultimately at the wastewater treatment works. Any mildly acidic conditions would be overcome by the mass of effluent at the works and that would dominate the wastewater characteristics. The fatty acids would be metabolised or degraded during biological, chemical and/or oxygenation processes at the United Utilities treatment works and potential for their discharge to surface waters post-treatment at that plant would be insignificant.

This hypothesis is supported by the fact that the types of fatty acids potentially discharged are commonly used in a range of industrial applications including the production of plastic products, water treatment chemicals, cosmetics and personal care products and that their MSDS highlights biological treatment for any materials recovered following a spill.

The operator further noted that the dry weather flow limits for the waste water treatment works is 340,000m^3. At maximum discharge the overall contribution from the entire M&I Materials site is less than 0.0001% of the outfall release to the local receiving water.

The presence of fatty acids within the effluent is not considered to pose a significant risk given that it is likely the fatty acids would be absorbed and at least partially biodegraded within the sewer system and remaining levels of fatty acids absorbed and biodegraded within the United Utilities waste water treatment works.

We have included an improvement condition in the varied permit requiring the operator to carry out sufficient analyses of its discharge to sewer to ensure they are able to define with confidence the expected amounts of fatty acids within the discharge (both their composition and speciation) following implementation of the process changes. The operator must propose a mechanism to determine quantitatively the expected impact of these discharges to sewer and use the quantitative data to verify the conclusions of the qualitative risk assessment for releases to sewer submitted in the permit variation application.

Should the results of the liquid effluent analyses show that release concentrations are greater than expected or the range of speciated VOCs is different than expected increasing any environmental risk, the operator must propose process improvements or use of additional abatement systems to reduce that risk to acceptable limits.

Decision considerations

Confidential information

A claim for commercial or industrial confidentiality has been made.

We have accepted the claim for confidentiality.

We have excluded details on the chemical processing and chemicals used.

We consider that the inclusion of the relevant information on the public register would prejudice the applicant's interests to an unreasonable degree.

The decision was taken in accordance with our guidance on confidentiality.

Identifying confidential information

We have not identified information provided as part of the application that we consider to be confidential.

The decision was taken in accordance with our guidance on confidentiality.

Consultation

The consultation requirements were identified in accordance with the Environmental Permitting (England and Wales) Regulations (2016) and our public participation statement.

The application was publicised on the GOV.UK website.

We consulted the following organisations:

- Trafford Council Environmental Health Department.
- Trafford Council Planning Department.
- United Kingdom Health Security Agency (UKHSA).
- Health and Safety Executive.
- Food Standards Agency.

The comments and our responses are summarised in the consultation responses section.

Originally the consultation was sent to Cheshire East Environmental Health and Planning Departments. That Council responded that the M&I Materials Limited facility did not lie within the administrative boundary of Cheshire East Council nor on the boundary and they had no comments to make.

The consultation was then sent to Trafford Council Environmental Health and Planning Departments.

The site

The operator has provided a plan which we consider to be satisfactory.

This shows the extent of the site of the facility including the discharge points.

The plan is included in the permit.

Nature conservation, landscape, heritage and protected species and habitat designations

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation, landscape, heritage and protected

species and habitat designations. The application is within our screening distances for these designations.

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the nature conservation screening report as part of the permitting process.

We consider that the application will not affect any site of nature conservation, landscape and heritage, and/or protected species or habitats identified.

We have not consulted Natural England.

The decision was taken in accordance with our guidance.

Environmental risk

We have reviewed the operator's assessment of the environmental risk from the facility.

The operator’s risk assessment is satisfactory.

General operating techniques

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.

The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.

Operating techniques for emissions that do not screen out as insignificant

Emissions of Volatile organic compounds (VOCs) cannot be screened out as insignificant. We have assessed whether the proposed techniques are Best Available Techniques (BAT).

We have assessed the potential impacts of these releases and these are acceptable. See Key Issues section for further details.

The proposed techniques/ emission levels for emissions that do not screen out as insignificant are in line with the techniques and benchmark levels contained in the technical guidance and we consider them to represent appropriate techniques for the facility. The permit conditions enable compliance with relevant BAT reference documents (BREFs).

National Air Pollution Control Programme

We have considered the National Air Pollution Control Programme as required by the National Emissions Ceilings Regulations 2018. By setting emission limit values in line with technical guidance we are minimising emissions to air. This will aid the delivery of national air quality targets. We do not consider that we need to include any additional conditions in this permit.

Improvement programme

Based on the information on the application, we consider that we need to include an improvement programme.

We have included an improvement programme to ensure that the operator carries out new analyses of gaseous and liquid emissions following implementation of the process changes and uses these to verify the emission data and conclusions on impact on receptors that are predicted in the application. Should process changes or abatement systems be required to control and minimise environmental risk, the operator must propose these with timescales for implementation.

See Key Issues section for further details.

Emission limits

No emission limits have been added, amended or deleted as a result of this variation.

Monitoring

Monitoring has not changed as a result of this variation.

Reporting

Reporting has not changed as a result of this variation.

Management system

We are not aware of any reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.

The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.

Growth duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit variation.

Paragraph 1.3 of the guidance says:

“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

Consultation Responses

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public and the way in which we have considered these in the determination process.

Responses from organisations listed in the consultation section

Response received from United Kingdom Health Security Agency (UKHSA).

Brief summary of issues raised:

The initial consultation response from UKHSA raised the following points:

- The air quality assessment failed to adequately justify the selection of acetic acid as a proxy for evaluating their emissions to air. They recommended that the justification for choosing acetic acid as a proxy for their volatile emissions to air is improved.
- The air quality assessment assumed only a proportion of emissions are acetic acid. This only constituted a small proportion of the overall volatile emissions, and therefore left the impact from the bulk emissions unevaluated. They recommend that the applicant either justified the use of acetic acid as a proxy for all emissions and assumed 100 % of their volatile emissions are acetic acid, or considered the potential toxicity of the other speciated substances in their evaluation of impacts.
- They recommended that the impacts of any of the proposed variations on the accident management plan are considered and that the applicant has appropriate accident prevention and response plans to mitigate the potential for public health impacts from an emergency.

Summary of actions taken:

- Our assessment of the impact of the gaseous releases has grouped the speciated VOCs into three groups to be assessed as acetic acid, acrylic acid and vinyl chloride. Acetic acid is no longer used as a proxy for any other speciated VOC.
- The grouping of the VOCs into the three assessment groups means that 100% of the emissions are now assessed not only the proportion that was due to acetic acid.
- The site has an environmental management system and risk assessments/accident management plans to ensure the newly permitted activities operate without impact on public health.