Christchurch

Water Recycling Centre (WRC)

Site ID: 13066

(Including, Christchurch Treatment Centre)

Odour Management Plan

(Version 14)

No changes or modifications are to be made to this Odour Management Plan without informing the Regional Process Scientist (Odour Management Co-ordinator).

Relevant Documentation:

ENVS120 15: Odour Policy.
TRTWG669: Odour impact and odour risk assessment procedure for existing WRCs/STC/SPS, proposed new expansion/development of a site and potential encroachment around/near a site.

Revised by:	Date	Reviewd by:	Date
Jim Humphries	January 2024	Richard Batchelor/Helen Smith	January 2024

Contents

1.0 Introduction

(See chapter 4 for Christchurch Treatment Centre (TC) permit area).

Odour from the majority of sewage treatment works (called water recycling centres in Wessex Water) is regulated by local authority Environmental Health Practitioners under the statutory nuisance provisions of the Environmental Protection Act 1990.

"A statutory nuisance is defined as a premises which are deemed to be detrimental to health or a nuisance, or are emitting dust, steam, smells, effluvia or noise with this effect. Every Local authority has to inspect the area it covers to check for statutory nuisances, if a complaint of statutory nuisance is made by a resident then the local authority must investigate. If a statutory nuisance is deemed to exist, then a notice will be served requiring the abatement of the nuisance and this notice shall include a list of steps that should be taken to reduce the nuisance."

Under the statutory nuisance regime there is a defence available in the event of either an appeal against an abatement notice, or prosecution for having contravened, or failed to comply with, an abatement notice, for statutory nuisance on industrial, trade or business premises, of having used "best practicable means" to abate the nuisance.

The interpretation of "best practicable means" is described at section 79(9) of the Environmental Protection Act 1990:

a) "practicable" means reasonably practicably having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to the financial implications:
b) the means to be employed include the design, installation, maintenance and manner and periods of operation of plant and machinery, and the design, construction and maintenance of buildings and structures:
c) the test is to apply only so far as compatible with any duty imposed by law;
d) the test is to apply only so far as compatible with safety and safe working conditions, and with the exigencies of any emergency or unforeseeable circumstances:

Wessex Water has adopted the following Odour Policy (ENVS120/15)

Wessex Water shall ensure that new assets are assessed for odour risk and shall be designed and operated to minimise risk of causing odour nuisance to receptors in consultation with planning authorities and environmental regulators.

Existing assets with the potential to generate odours must comply with either generic or site-specific odour management plans to limit risk of causing an odour nuisance.

There are two types of odour management plan within Wessex Water to demonstrate "best practicable means" is being applied:

Generic odour management plan: Applicable to all sites which do not have a history of odour problems.

Site specific odour management plan: Applicable to the following:

- Sites that have an environmental permit and BAT compliance is applicable.
- Sites that have a large source odour potential where there is the high potential for odour complaints to be received.
- Sites that have received an odour abatement order.
- Sites that have planning restrictions applicable to odour where specific operational measures have to be applied.
- A review of the history of odour complaints requires additional mitigation/management above that stated in a generic odour management to prevent further odour complaints being received.

The type of odour management plan given to a site is reviewed on an annual basis on the production of the Odour Management Co-ordinator's annual odour report which is compiled from Wessex Water odour complaint data. A change in type of odour management plan given to a site may occur if there has been a change in the number of odour complaints received by Wessex Water for the site or the process on site has been changed.

Site specific odour management plan sites are placed into one of three categories depending on a number of factors. The specific category for a site is reassessed on a yearly basis.

- **Category 1**:

- All sites that are subject to Environmental Permitting Regulations and associated BAT requirements.
- All sites that have received an odour abatement order.
- Sites that have a history of odour complaints (>20 complaints per year or previous complaint history deems it necessary)

There must be a review of the odour management plan at a minimum twice a year, which includes a meeting to discuss odour complaints received. Site Manager/Area Scientist must minute the site meeting. At a minimum a boundary sniff test/H_2S survey must completed once a year.

- **Category 2**:

- Sites that have a history of odour complaints (>10 but <20 complaints per year or previous complaint history deems it necessary).

There must be a review of the odour management plan at a minimum once a year, which includes a meeting to discuss odour complaints received. Site Manager/Area Scientist must minute the meeting. At a minimum a boundary sniff test/H_2S survey must completed once a year.

- **Category 3**:

- Sites that have less then <10 complaints per year but previous complaint history requires more than a generic odour management plan to be in place.
- Site has Odour Control Units (OCUs) on site extracting via a fan from wastewater or sludge assets.
- Planning restrictions applicable to odour where specific operational measures have to be applied.

- Sites that have a large odour source potential. (For example "*large STW, material usage hundreds of thousands of tonnes/m^3 per year, area sources of thousands of m^2. The compounds involved are very odorous having very low Odour Detection Thresholds." extract* from IAQM Guidance on the assessment of odour for planning)

There must be a review of the odour management plan at a minimum once a year.

This site has been categorised as category 1 (Due to having an EA permit area)

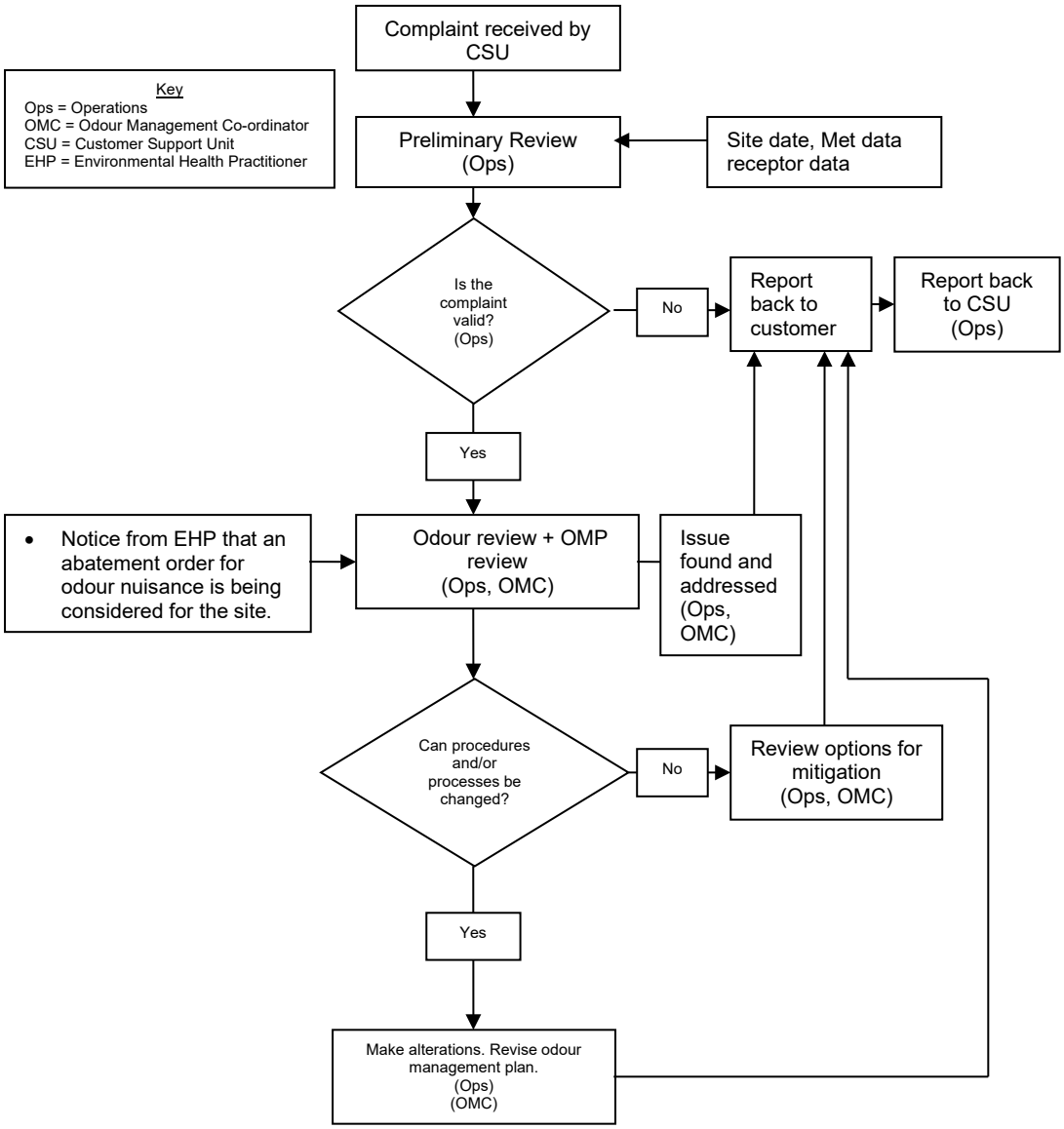
A review of a site's odour management will occur if:

- Notice is received from an Environmental Health Practitioner that an abatement order for odour nuisance is being considered for the site or an EA Officer has been in contact due to the area of the site being covered by an EA Environmental Permit.
- More than 2 odour complaints for the site per month are recorded on the Ops Contact Reporting system
- More than 9 odour complaints for the site in a rolling year are recorded on the Ops Contact Reporting system.
- If the is a requirement as part of an EA Environmental Permit.

This site has EA Environmental Permit area: Christchurch Treatment Centre (TC): Please see chapter 4.

A full update of the OMP should be completed every year due to having a permit area.

Figure 1.0.1: The good practice approach for dealing with odour nuisance at WRCs



2.0 Background

There are four steps generally required to create an odour nuisance. These are:

1) The formation of odorous compounds
2) The transport of odorous compounds in the liquid phase
3) The transfer of odours to the atmosphere
4) The transport of odours to potential complainants.

The most common reason for the formation odours at a Water Recycling Centre (WRC) is due to the formation of septicity. Septicity occurs as a result of the action of micro-organisms on a sewage, effluent or sludge (see Odour Control Operation Manual: TRTMAN007 section 2.1.1.1).

Dissolved sulphide, which forms when septic conditions occur, produces hydrogen sulphide (H_2S) gas. H_2S is a colourless gas which is highly odorous and smell like rotten eggs. It can be smelt at very low concentrations. H_2S is often the compound most responsible for odour nuisance from a WRC/BC. The amount of sulphide which stays in solution and the amount which is released as H_2S gas are primarily determined by:

- The pH of the effluent or sludge: the lower the pH the more H_2S which will be formed
- The amount of turbulence: the greater the degree of turbulence the more H_2S (and other gases) will be released to atmosphere.

It is important to remember that there are many other odorous compounds and sometimes odours do not contain H_2S at all. Other odours could include:

- Mercaptans (cabbage-like odour)
- Ammonia (urine-like odour)
- Amines (urine, rotten fish-like odour)
- Organic Acids (vinegar-like odour).

The ability of the released odour to cause an odour nuisance will depend on:

- How much and where they are released.
- The volume of air in which they become dispersed.
- The proximity and sensitivity of potential complainants.
- The frequency, duration and time of day of such a release.

3.0 Contacts

Customer support unit: Wessex Water 03456 004600

(For direct contacts please request via main switch board)

WRC

Contacts

Head of Water Recycling South	Daniel Symes
Site Manager South	Richard Batchelor
Lead Scientist South:	Louise Chant
Area Scientist South:	James Mason

Christchurch Treatment Centre (TC)

Liquid Waste Resources Operations Manager:	Helen Smith
Technical Supervisor:	Pete Hatcher

Odour Management Co-ordinators

Odour Management Co-ordinator:	Jim Humphries/Kostas Vardas

Site Address

Christchurch WRC and Christchurch TC
Stony Lane
Christchurch
BH23 7LF

Grid Ref (xy) 416563 093648

4.0 Environmental Permitting

(<u>This section is relevant to the Christchurch Treatment Centre (TC) permit area only). Customer complaint procedure is chapter 14)</u>

The following documents should be consulted in relation to Environmental Permitting in Wessex Water;

ENVS 120/7: Environmental Permit Plan
EPP001: Environmental Permit Procedure

- Additional guidance for H4 Odour Management; How to comply with your environmental permit (March 2011). Environment Agency.

"The provisions of the OMP are treated as part of your permit and must be complied with. H4 informs that the effectiveness of the odour control measures should be reviewed once a year".

Detailed in the H4 guidance an OMP should:

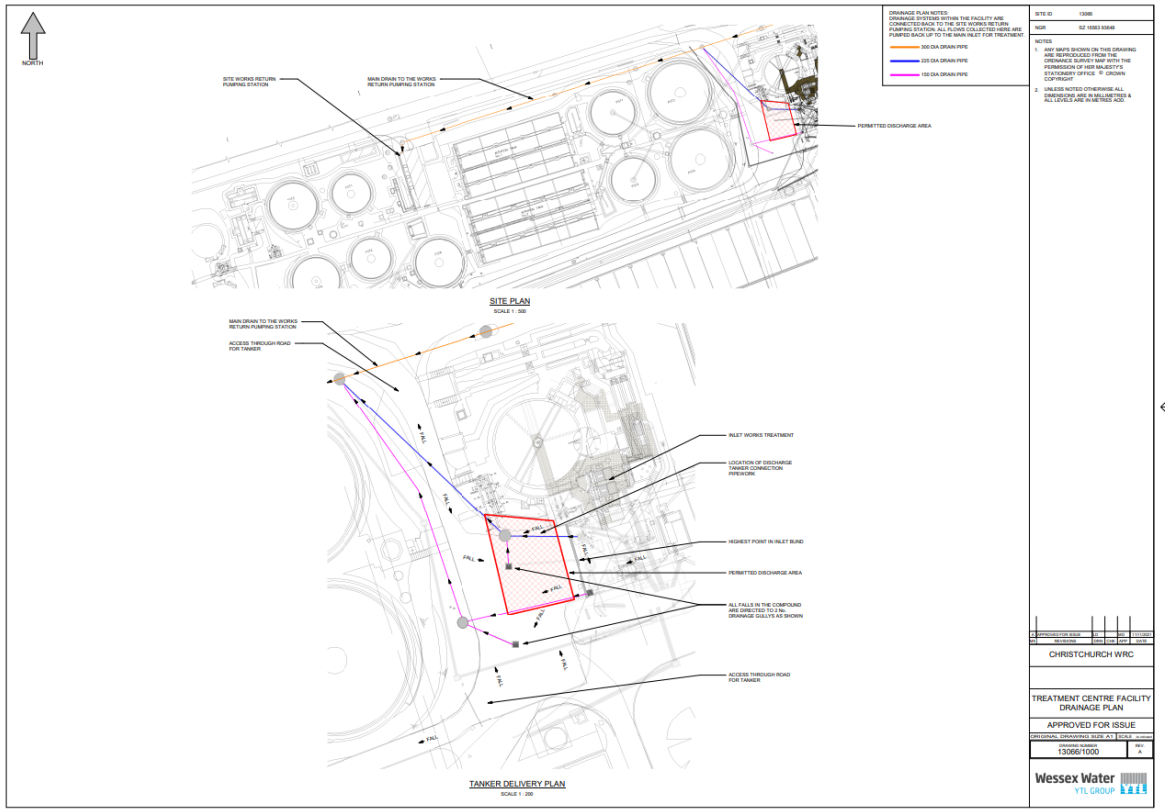
- *Employ appropriate methods, including monitoring and contingencies, to control and minimise odour pollution*
- *Prevent unacceptable odour pollution at all times; and*
- *Reduce the risk of odour releasing incidents or accidents by anticipating them and planning accordingly.*

This site has a permit area: Christchurch Treatment Centre (TC).

The TC accepts import liquid waste from landfill sites within the local area. The WRC is a separate regulated facility and is regulated through the requirements of the discharge consent.

4.1 Location Plan of Christchurch Treatment Centre (TC)

Figure 4.1.1 Location Plan of Christchurch Treatment Centre (TC)



4.2. Process Odour Sources for Christchurch Treatment Centre

The odour potential of a source can be broken down into three key considerations:

How inherently odorous the compounds present are.
The unpleasantness of the odour.
The magnitude of the odour release.

When trying to determine the offensiveness of an odour source, site-specific odour sampling should be considered in the first instance. In the absence of source odour emission data, the assessment criteria will consider the Environment Agency's Horizontal Guidance Note (H4). H4 looks to categorise how offensive odours are with sources/processes/activities that are considered 'most offensive' odours include septic effluent or sludge and biological landfill odours.

The unpleasantness of an odour can be used in defining the source odour offensiveness. This is typically achieved through source material hedonic tone assessments, however; these types of assessments are not typically available for a site without source-specific sampling.

The risk source odour potential critical risk scoring for odour offensiveness and mitigation / control adopted is summarised in Table 1.

Table 4.2.1 Source Odour Potential Risk Scoring.

Source	Risk Rating		
	High	**Medium**	**Low**
Odour Offensiveness	Very odorous compounds (H_2S, Mercaptans) with low odour threshold. Unpleasant odour - "Most Offensive". Unpleasant hedonic tone. Large, permitted process / Surface Area.	Compounds involved are moderately odorous. Unpleasantness - process classed in H4 as "Moderately Offensive" or where odours have neutral or slightly unpleasant hedonic tone. Smaller permitted process / Surface Area.	Compounds involved are only mildly offensive. Unpleasantness - process classed in H4 as "Less Offensive". Neutral to positive hedonic tone.
Emission Risk (Mitigation / Control)	Open air operation with no containment. Reliance solely on good management techniques and best practice.	Some mitigation measures in place but significant residual odour remains.	Effective mitigation measures in place (e.g. BAT, BPM) leading to little or no residual odour.

Table 4.2.2: Christchurch Treatment Centre (TC) Inventory of Odorous Materials.

Source	Source Type	Storage capacity (m^3)	Average retention time	Frequency of Operation	Odour Description	Hedonic Tone	Odour Offensiveness	Mitigation Measures	Emission Release Type	Emission Risk
Tanker connection	Landfill liquid waste	N/A	N/A	Intermittent (Tanker delivery only)	Septic/sulphide	-3/-4 Unpleasant/Very Unpleasant.	High	Contained pipeline	Diffuse	Low

4.3 Christchurch Treatment Centre List (TC) of EWC

Table 4.3.1: Christchurch Treatment Centre (TC) List of EWC.

EWC
02 01 01
02 03 01
02 05 01
02 05 02
19 09 02
16 10 02
19 07 03
20 03 06
19 09 06
20 01 08
20 01 25

4.4 Odour Critical Sources

Odour Critical Sources

Given the control measures that are in place during operation of the facility, these contributions (if any) are unlikely to increase the odour impact on the receptors outside of the site boundary.

Management of releases includes reducing turbulence, containment and abatement. Where odorous gasses are finally released, controlling the height of release through a stack or the timing of releases through management of activities can influence dispersion before there is an impact on people. Potential on site odour releases associated with Christchurch Treatment Centre (TC) are given in Table 4.4.1.

Table 4.4.1 Christchurch Odour Critical Sources- Operational Mitigation

Source	Potential Odour Source	Odour Control Measures	Odour Risk	Mitigation Trigger	Mitigation Measures	Timescale	Responsible Person(s)
Tanker Connection	Liquid wate	Pipework and no storage of odorous material	Unlikely given control measures in place.	Broken connection. Split Pipe Work	Repair Connection Replace pipework	No discharge allowed until connection repaired/replaced. No discharge allowed until pipe work replaced.	Treatment Centre Technician. Treatment Centre Technician

4.5 Delivery Acceptance Analysis Procedure

TC technicians follow ‘Delivery Acceptance Analysis Procedure GENWNG24’, testing each pre acceptance sample prior to discharge for pH, odour, appearance and colour.

4.6 Odour Risk Assessment

All EA permit areas must have a Preliminary Odour Risk Assessment (PORA) and odour radius calculation completed as detailed in TRTWG669.

The PORA assesses potential odour impact and odour risk of the BC site on sensitive receptors. The PORA appraises the following information:

- The type of Odour Management Plan in place.
- Specific odour prevention already in place (see table 4.2.2).
- Historical odour complaints for the site (see table 4.5.1)

- The odour radius calculation for the site. The odour radius calculation will list the following information:
    - Each process stage of the site.
    - Indicates process stages with potential hedonic tones scores of -3/-4 (See table 4.2.2).
    - Number of units within each process stage (see table 4.2.2)
    - The exposed surface area per unit.
    - Specific odour emission rate for each unit (library values are used, see TWTG669).
    - Whether the emission rate is low, typical or high (typical values are used unless there is has been specific olfactometry sampling carried out on the site that demonstrates a low or high value can be used).
    - Total odour emission rate.
    - Expected radius distance odour may be detectable.

      (note: This does not necessary mean a complaint will be received as this will also depend on the offensiveness and hedonic tone of the odour)
    - Details the % of total Christchurch Treatment Centre emission rate that has a hedonic tone score of -3/-4)
    - Source-Pathway-Receptor Model.

The odour radius calculation is a “worse case” prediction under normal operating conditions. It is a simple calculation not using meteorological data to predict potential odour risk. The higher the percentage emission rate at predicted hedonic tone -3/-4 the greater the risk of a sensitive receptor is of being impacted by odour if within the odour radius calculated contour.

(Note: The PORA is only assessing potential risk of odour complaints for the Christchurch Treatment Centre).

The completion of the PORA identifies whether further odour modelling of the site with different scenarios is required. It also identifies to the business where there is potential odour risk and indicates where there is the potential for future odour improvements. The identified odour risks can be then placed on the corporate risk system. The corporate risk system is used operationally to manage risk at sites and their related processes.

4.7 Preliminary Odour Risk Assessment (PORA) Results for Christchurch Treatment Centre (TC).

Table 4.7.1 Christchurch Treatment Centre (TC) PORA Results

Type of Odour Management Plan	Site Specific
Odour complaints received are for the Christchurch Treatment Centre and the WRC. This is the total number of odour complaints received and not whether they are reviewed as valid or not. 2023 2022 2021 2020 2019	 0 2 (address approximately 350m from permit boundary and a letter complaint for address over 2.4 km from the permit boundary). 0 1 (Facebook communication for an address over 1.5km from the permit boundary. 1 (address over 4.5km from the permit boundary)
Predicted total library odour emission rate for site (ou_E/s^{-1})	0 (contained pipework)
Higher Warren Spring Laboratory Constant 2.2 (m)	0 (contained pipework)
Lower Warren Spring Laboratory Constant 0.7 (m)	0 (contained pipework)
Predicted % that is potentially hedonic tone -3/-4 odours	N/A (contained pipework)
Largest odour emission source on the BC site.	N/A (contained pipework)

Table 4.7.2 Christchurch Treatment Centre (TC) Source-Pathway-Receptor Model

Receptor	Source of Odour Potential	Pathway effectiveness	Receptor Sensitivity	Risk of Odour Exposure	Likely magnitude
Closest Residential Receptor (220m from permit boundary	Small	Ineffective Pathway	High	Negligible Risk	Negligible Effect

The PORA is predicting there is a **very low risk** of odour complaints being received for the under normal operating conditions when following this OMP. In terms of this specific assessment there is currently no requirement for further olfactometry sampling or odour modelling of the site. There are actions required to be recorded on the company risk

management system due to the associated low risk identified in the PORA. A reassessment will be required if:

- Odour complaints are received for the Christchurch Treatment Site.
- If there is planned new process or site expansion.
- Proposed encroachment around the site.

4.8 Meteorological Conditions

In the UK, the prevailing wind directions are commonly from the South-West. The wind direction and speed will impact the dispersion of odour emissions from site. Wind direction is continually monitored on site. If an odour complaint is received for the site this data should be checked to see if the wind was in the correct direction for an odour nuisance to be caused from site.

Bournemouth Airport (Hurn) meteorological station is the closest representative station for Christchurch Treatment Centre at a height of 11.6m above sea level. The meteorological station is located approximately 6.5km NW of the Site which has a height of 10m above sea level. The meteorological data for Bournemouth Airport is adopted for the site for any odour risk assessments that incorporates metrological conditions whereby wind direction and frequency are used to determine the ”pathway effectiveness” from source to receptor. The wind rose plot for Bournemouth Airport (Hurn) meteorological station for 2022 and 2021 are included in Figure 4.6.1 and Figure 4.6.2.

Figure 4.8.1 Wind Rose Plot for Bournemouth Met Station 2022 data.

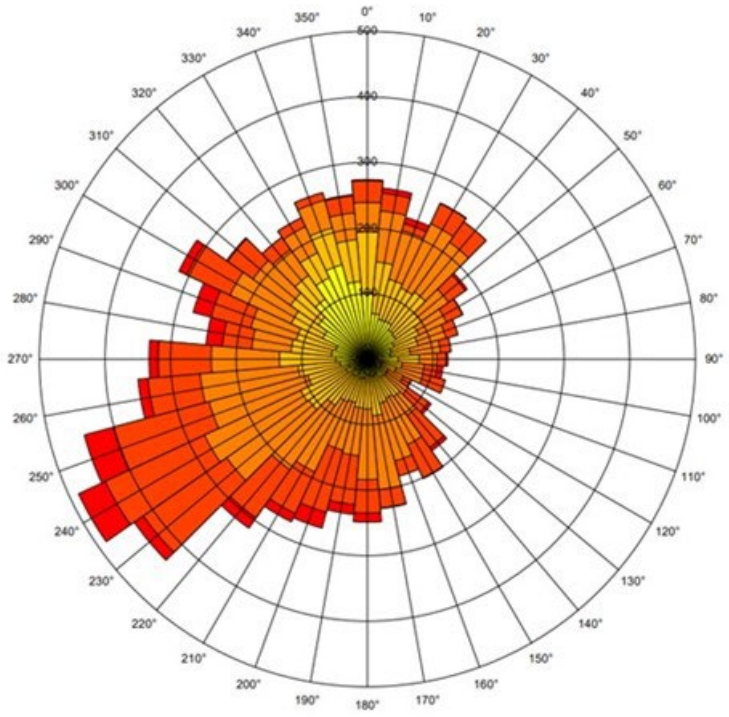
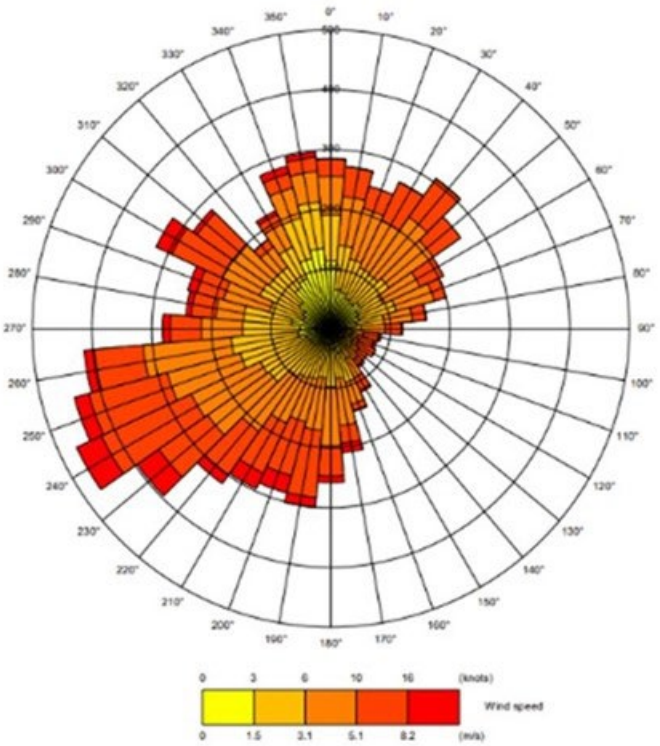


Figure 4.8.2 Wind Rose Plot for Bournemouth Met Station 2021 data.

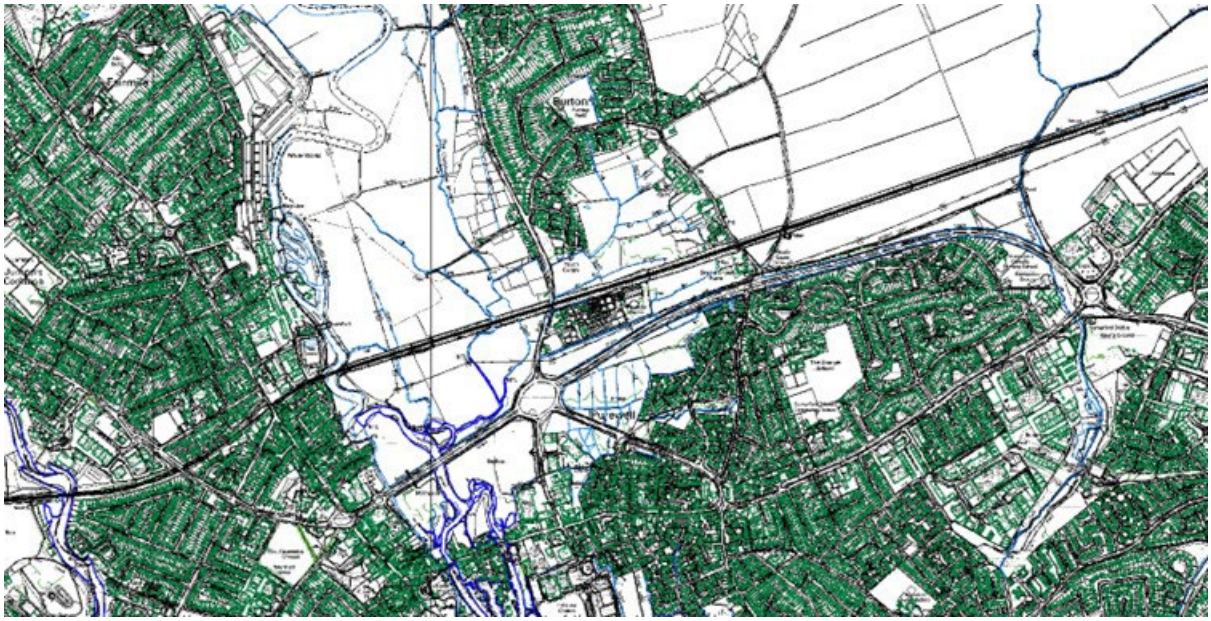


5.0 Location of Christchurch WRC and TC, WRC Population Data and Odour Complaint Data:

5.1 Location

Christchurch WRC and TC is in the County of Dorset. The town of Christchurch lies to the South-East to the North-West of the site. The village of Burton is to the North. Downwind of the prevailing wind direction is agricultural land and a solar panel farm. The site was constructed for the predecessor local authority undertaking before vesting in Wessex Water in 1974. Since then the works has been altered and extended on several occasions. The site is a Tertiary Aeration Advanced plant.

5.1.1 Location Map of Christchurch WRC



5.2 WRC Population Data

Table 5.2.1: Population Data for Christchurch WRC

Total Population	**68,018**
Residential Population	57,399
Non Resident (Holiday) Population	7,904
Commercial Domestic Population	2,566
Trade Population	159
Population Last Amended	03/05/2018

5.3 Odour Complaints Received for Christchurch WRC in Recent Years

Table 5.3.1 displays the odour complaints data received by Wessex Water in respect of the wider Christchurch WRC and Christchurch Treatment Centre that have been recorded over the last 5 years. Please note that odour complaints received may not be valid as being associated with the WRC or the TC and may be due other Wessex Water assets or due to external reasons outside Wessex Water control. Odour complaints have previous been received due to rotting seaweed on the coastline. For further odour complaint information for the site please contact the Wessex Water Odour Management Co-ordinator.

Table 5.3.1: Christchurch WRC and TC Complaint Frequency

Year	No. of Complaints
2023	0
2022	2
2021	0
2020	1
2019	1

6.0 Potential Odour Sources

Figure 6.0.1 Site Schematic

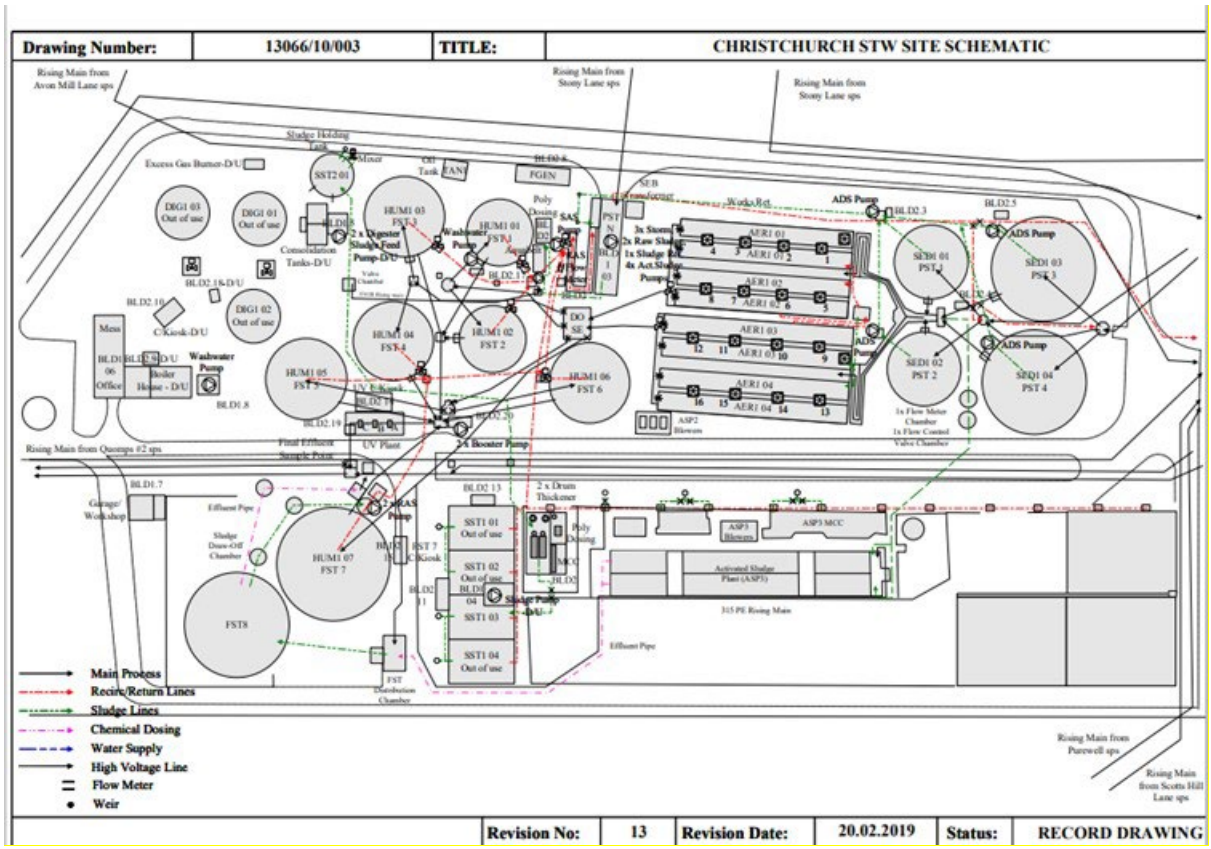


Table 6.0.1 lists the potential odour sources. It also lists the odour abatement techniques in place to minimise odour emissions from each potential odour source that has been identified.

Table 6.0.1 Potential Odour Sources for Christchurch WRC.
(For Christchurch Treatment Centre See Chapter 4)

For a Site Process Guide see TRTF1-13066 in the Site Operation Manual (Red Book).

Potential Odour Source	Reason for Potential Odour Source	Odour Management and Minimisation
Storm Tanks (x6) square (x1) radial  **For Sewage Treatment Basic Knowledge – Preliminary Treatment see TRTMAN028**	Storm separation has to be built into the sewerage network and treatment plants as much of the network is combined to take both foul sewage and rain water Storm tanks may be a source of odour emissions (when filling and when sludges are returned) and odour generation (from the storage of sewage and sludges).	**Odour abatement by "Good Housekeeping". (See section 10).**
Inlet  **For Sewage Treatment Basic Knowledge – Preliminary Treatment see TRTMAN028**	The inlet is where raw sewage enters the sewage treatment works. Odours released at the inlet works may be as a result of discharges of septic sewage, tankered wastes, sludge liquors, storm sewage or surplus biological sludges. Rising mains may cause an odour problem as the discharge will may be turbulent and often might be septic. Gravity sewers may cause an odour problem if the sewage is septic resulting from shallow gradient or storage in the system.	**Odour abatement by "Good Housekeeping" (See section 10).** Rising Mains coming into Christchurch: Purewell Quomps No 1 Avonmill Lane Scotts Hill Lane Somerford Bridge Wiltshire Gardens Burton Stoney Lane

Balance Tank 	Asset to balance flows entering the inlet. Odour emissions may be as a result of septic waste.	**Covered:Odour abatement by "Good Housekeeping" (See section 10).**
Inlet Screens  **For Sewage Treatment Basic Knowledge – Preliminary Treatment see TRTMAN028**	Screenings are large floating or suspended solids. They consist of a wide variety of objects and materials. The most common types of screenings are plastics and rags that are flushed down the toilet. Provision of screening protects downstream processes from blockage, which could give rise to dead areas and odour generation. Passage of sewage through screens may give emission of odours from the sewage. After the screenings have been removed from the main flow they are processed to help prevent nuisance and to prepare them to be transported to disposal at a landfill site. Stored screenings can also produce odorous emissions, particularly if not washed.	**Odour abatement by "Good Housekeeping" (See section 10).** **Skips to be covered prior to moving.** **Skips should be removed from site when full.**

Grit Removal  **For Sewage Treatment Basic Knowledge – Preliminary Treatment see TRTMAN028**	Grit is the name given to heavy mineral material that has entered the sewage system. Grit can contain silt, sand, gravel, ash, metal, and glass. If grit is not removed from the flow of sewage it can cause problems with silting up of channels, blockages in pipes and pumps and excessive wear of pumps and pipe work. Odour generation in the grit removal stage may be due to the sewage turbulence and the storage of odorous detritus contaminated with organic debris.	**Odour abatement by "Good Housekeeping" (See section 10).** **Skips to be covered prior to moving.** **Skips should be removed from site when full.**
Primary Settlement Tanks (x4)  **For Sewage Treatment Basic Knowledge – Primary Treatment see TRTMAN027**	The primary treatment plant has three main functions: 1) Removes Suspended Solids 2) Retains grease and scum 3) Balances the load to secondary treatment. Odours may be released predominantly from the overflow weirs. Odours can also be released from the surface of the tank, at distribution chambers and channels. Odour emissions may increase if the incoming sewage is septic or if septicity develops in the sewage during settlement. Odour emissions can be reduced by minimising retention of sewage and sludge: and minimising turbulence of crude and settled sewage and sludges. Desludging is automatic, controlled both on and off by a timer.	**Odour abatement by "Good Housekeeping" (See section 10).**

Aeration Lanes (x6)  **For Sewage Treatment Basic Knowledge – Activated Sludge plant see TRTMAN026**	Usually not a major odour source as malodours compounds are adsorbed and oxidised by the micro-organisms responsible for secondary treatment. Odours at this stage may be due to the odour of the incoming wastewater because aeration of activated sludge can strip odours from a septic or industrial wastewater. Odours may also be due to operational problems such as overloading and inadequate aeration or mixing.	**Odour abatement by "Good Housekeeping" (See section 10).**
Humus Tanks (x8)  **For Sewage Treatment Basic Knowledge – Activated Sludge plant see TRTMAN026**	At this stage effluent and waste sludges should be well oxidised and should not cause odour problems unless there are operational problems.	**Odour abatement by "Good Housekeeping" (See section 10).**
UV Treatment 	At this stage the effluent should be well oxidised and should not cause odour problems unless there are operational problems.	**Odour abatement by "Good Housekeeping" (See section 10).**

Drum Thickeners (x2)  **For Sludge Thickening and Dewatering Operation Manual see TRTMAN001**	Potential for odour generation at this stage. The intensity of the odour will depend on the length of time that the sludge has been retained.	**Enclosed with in a kiosk. Odour abatement by "Good Housekeeping" (See section 10).**
Sludge Storage Tanks (x4) 	Storage may allow odour generation, which could be emitted when the sludges are disturbed.	**Covered: Odour abatement by "Good Housekeeping" (See section 10).**

7.0 Specific Odour Abatement.

Due to a low risk rating from the WRC PORA complete there is no current specific odour abatement other than Good Housekeeping requirements detailed in Chapter 10. The PORA will be reviewed on an annual basis and if odour complaints are received for the site.

8.0 Design Performance Specifications for the Specific Odour Control.

Due to a low risk rating from the WRC PORA there is no current specific odour abatement other than Good Housekeeping requirements detailed in Chapter 10. The PORA will be reviewed on an annual basis and if odour complaints are received for the site.

9.0 Chemical Replacement, Consumable and Media Replacement for Specific Odour Control.

Due to a low risk rating from the WRC PORA there is no current specific odour abatement other than Good Housekeeping requirements detailed in Chapter 10. The PORA will be reviewed on an annual basis and if odour complaints are received for the site.

10.0 General Housekeeping:

Due to a low risk rating from the WRC PORA there is no current specific odour abatement other than Good Housekeeping requirements detailed in Chapter 10. The PORA will be reviewed on an annual basis and if odour complaints are received for the site.

General

- Ensure that doors to buildings that may contain odours are kept closed except for access. Maintain signage on doors for operational, visiting and contract personnel.
- Ensure that inspection covers or hatches fitted to contain odours are closed immediately after use.
- Where possible covers should be sealed.
- Where sealing strips are fitted to covers check for integrity.
- Retention of sewage and sludge should be minimised as much as possible.
- Aim to minimise turbulence at the inlet of the works.
- Spillages must be avoided. Ensure the immediate clear up of any spillage.
- Where plant failures may lead to increase in odour emissions repairs should be done as soon as possible.
- Semi-permanent plant should be assessed for odour. A Process Risk Assessment must be completed before semi-permanent plant is used on site. This Process Risk Assessment must consider possible odour nuisance that could be caused by the semi-permanent plant in question.
- The Odour Management Co-ordinator must be contacted if the semi-permanent plant is connected with sludge dewatering, thickening or liming.
- Report any raised odour levels to the Treatment Manager immediately who will liaise with the Area Scientist.

Christchurch Treatment Centre

- Regular checks that Tanker connection and pipeline are in maintained order.

Pumping Stations

- Refer to Generic Odour Management Plan: Sewage Pumping Stations.

Strom Tanks

- Only fill storm tanks when it is essential to do so.
- Where possible aim to minimise retention of sewage and sludges in storm tanks as much as possible.
- Storm water tanks should be emptied and cleaned as soon as possible after use.

Screens/Grit Systems

- Ensure that screenings and grit systems are working correctly.
- Ensure regular cleaning and flushing of screens and influent channels.
- Skips that contain clean screenings or grit must be covered before being removed from site.
- Ensure the regular cleaning of scum and grease removal equipment.
- Ensure regular cleaning and flushing of screens and influent channels.
- Ensure baffles on grit systems are positioned correctly and flow is evenly distributed.
- Remove any build-up of rag from baffles and scraper on grit systems.
- Ensure skips containing screenings and grit are removed from site as soon as is practicable.

Primary Treatment

- Ensure primary tanks are cleaned on a regular basis to prevent long-term accumulation of sewage, sludge or debris, which could become septic and give rise to the generation and emissions of odours. Draining of tanks for maintenance should be scheduled to minimise possible impact.
- Sludge levels in primary tanks should be checked on a regular basis and the sludge level within the tanks should not be allowed to get too high. The desludging system should be adjusted as necessary.
- On a regular basis the scum box on the primary tank should be cleaned to prevent blockages. Excess scum from the tank surface should be cleared. The build-up of scum or foam on tank surfaces can at times lead to odour and should generally be avoided. If there is build-up of scum or foam on primary tank surfaces the Duty Operator must contact the Area Scientist for advice.
- The stilling box on a primary tank should be kept free of debris.

Activated Sludge Plant

- Activate sludge plants generally remove odour by adsorption and biochemical oxidation. Therefore, dissolved oxygen levels should be maintained at all times to avoid the development of septic conditions.

- An anoxic zone is a tank where bacteria oxidise organic matter using nitrate as an oxygen source rather than dissolved oxygen, during the reaction nitrogen is formed. Anoxic processes should only be used where an adequate concentration of nitrate is available. Without nitrate, the process becomes anaerobic, with consequent generation of odours.

Final Tanks

- Ensure final tanks are cleaned on a regular basis to prevent long-term accumulation of sewage, sludge or debris, which could become septic and give rise to the generation and emissions of odours. Draining of tanks for maintenance should be scheduled to minimise possible impact.

- Sludge levels in final tanks should be checked on a regular basis and the sludge levels within the tanks should not be allowed to get too high. The desludging system should be adjusted as necessary.

- On a regular basis the scum box on the final tanks should be cleaned to prevent blockages. Excess scum from the tank surface should be cleared. The build-up of scum or foam on tank surfaces can at times lead to odour and should generally be avoided. If there is build-up of scum or foam on humus tank surfaces the Duty Operator must contact the Area Scientist for advice.

- The stilling box on the final tank should be kept free of debris.

Sludge Storage and Treatment

- Sludge storage, particularly of primary or mixed primary and biological sludges: allows odour generation, which will be emitted when the sludges are disturbed by a discharge into the tanks, mixing or during subsequent treatment. Therefore, sludge should be processed as soon as is possible. Any mixing should be at low speed and operated continuously. Where possible sludges should be discharged at low level in the tank and, wherever possible, below normal liquid level.

- Equipment for mechanical thickening and dewatering should be operated continuously where practicably possible. This is to ensure that sludges are rapidly handled and provide a continuous stream of return liquor, rather than intermittently with consequent high odour emissions. If not continuous operation, the plant should be cleaned after use. This will remove sludges retained on equipment that may continue to produce malodours.

- Returned liquors can be highly odorous. Aim to minimise turbulence when discharging or discharge under liquor level where possible.

- Aim at balancing the flow of sludge liquors to even the load over the day where process loading allows.

- Aim to minimise turbulence when sludge pumping. Where possible discharges to sumps should be at low level to minimise turbulence and hence odour emissions.

11.0 Routine Monitoring:

11.1 Routine Operator Visits

There are regular visits by the Site Operator and TC Technical Supervisor to carry out general tasks and make sure General House Keeping in Chapter 10 is completed. As part of this routine operational visit they will report back to the Site Manager or Area Scientist any odours above normal levels.

11.2 Boundary Sniff Testing

Sniff testing is recognised by Wessex Water as a useful technique to build up a picture of the impact the odour has on the surrounding environment over time. Sniff testing shall be used to support profiling site odour impact, investigate odour complaints and to introduce temporary odour mitigation measures. Sniff testing shall be undertaken on the site boundary of the WRC and TC on a minimum of an annual basis using the template in Appendix 2. It is accepted that operational staff may not be ideal for sniff testing of site odours as they have adapted to odours from the site so the survey will usually be carried out by a Regional Scientist or Area Scientist.

In the event of multiple odour complaints being received where the source of the odour cannot be identified from normal process monitoring, further sniff testing should be carried out around boundary of the site and at potential sensitive receptors. The initial boundary sniff test assessment should be carried out by local operational personnel. If the results of this are inconclusive, then the Site Manager should contact the Odour Management Co-ordinator for a Regional Scientist or External Contractor to carry out a survey. For further types of odour sampling that could be used please contact the Odour Management Co-ordinator.

12.0 Routine Maintenance:

Problems with WRC and TC operations can be a cause of odour emissions.

- Every Wessex Water WRC site has a site operation manual used to record all information about that particular site. Copies of the contents are available on the intranet
- The frequency of site checks and maintenance is dependent on-site sensitivity, site priority and whether duty/standby equipment is provided
- A record of maintenance allocated to the Duty Operator will be raised and recorded on the work and asset management system (WAM). Task lists for maintenance jobs for specific sites are downloaded onto the Duty Operators tough book for completion
- A record of maintenance allocated to EMI department will be held on the WAM system.

13.0 Emergency Response:

The following safeguards have been incorporated for failures that might give rise to odour for the specific odour control on site.

Event	Safeguard
Power failure	Standby generator on site.
Failure of critical plant	All critical plant has standby

All failures of a site process should be reported to the Site Manager and Area Scientist and the TC Technical Supervisor if in the permit area. If the failure of the site process has the potential to cause an odour impact the Odour Management Co-ordinator and the Area Manager must be informed.

In the event of a failure of a site process or an odour control system, that may give rise to odour, it is the Site Managers responsibility to inform the Environmental Health Practitioner/EA Permit Officer for the area.

If the event is a critical failure of plant/process a PORA is required to be ran to assess the potential odour impact. It may be that the PORA indicates that the critical failure and change of process is low impact due to the potential odour emission rate and hedonic tone score. Therefore, further odour impact mitigation may not be required. The Environmental Health Practitioner/EA Permit Officer are to be informed of the outcome of the PORA and whether further odour impact mitigation is to be put in place and likely timeframes involved. This may include the following:

- Updating potential sensitive receptors.
- Informing Wessex Water CSU department that odour complaint may be received so correct information can be relayed.
- Setting up odour monitoring.
- If critical failure is a spillage report how quickly repair can be made and clean up ASAP.
- Semi-permanent covering of plant (H&S risk must be assessed before any covering is completed).
- Semi-permanent odour control plant installed.
- Further odour modelling odour risk assessment required.
- Raise risk on company risk management system.

At each stage it must be documented by the Site Manager for the site the actions put in place to minimise the odour impact.

14.0 Procedure for Complaints.

Complaints are the primary indicator of nuisance and other community dissatisfaction. It is important that complaints are properly and systematically recorded, and acted upon.

Complaints of odour are dealt with and recorded by the Customer Support Unit (CSU). The complaint details are placed onto the Ops Contact Reporting system. CSU forward the complaint details to the Site Manager via email and text alert. It is the Site Manager's

responsibility to make sure there is liaison with the local authority, local stakeholders (including the complainant) and CSU on progress. Any complaints made directly to site staff must be reported to CSU so they can be placed on the Ops Contact Reporting system. It is important that communication between all interested parties at all times is maintained.

The initial action following a complaint will be as follows:

- The Site Operator will perform a general check of the site.
- The Site Operator will check that there are no ongoing process issues or activities that would give rise to odour emissions.
- The Site Operator will check that levels of 'Good Housekeeping' are being maintained.
- The Site Operator will check that there are no on-going process issues or activities that would give rise to odour emissions.
- As part of the overall investigation the following should be reported to the Site Manager, TC Technical Supervisor, Area Scientist and Odour Management Co-ordinator where the Site Operator has investigated and found the following.
    - The odour is being generated from a SPS or in a remote part of the sewage network. This may require a job to be raised for a sewerage crew, pumping station crew to carry out odour investigations on other Wessex Water assets outside the WRC boundary.
    - There were other known sources of odour in the vicinity at the time.
    -
        - Private issue on customer property.
        - Environmental, especially coastal areas and rotting seaweed, tide times may need to be checked.
        - Muckspreading.
        - Other industry.
        - Other 3rd party e.g. Landfill site.
    - There are good grounds for believing a complaint is frivolous or vexatious.
        - This is rare but has happened where odour complaints have been received for particular sites where the customer does not reside or is in the area when the complaint was made.

There is the potential for *"no reason to be found*" for the customers reported odour complaint as there is no detectable odour present at the time when the initial odour complaint action was carried out. Further odour monitoring (see chapter 11) may be required to be carried out at a later date and the customer should be informed of timescales for their completion. If the customer is complaining that they are detecting an odour on a regular occurrence the customer should complete an odour diary (appendix 1). The completed odour diary should be sent by the customer to be reviewed by the Site Manager and Area Scientist.

Following the completion of the initial action it must be decided whether the odour management plan is being followed. If the plan is not being followed then the Site Manager and TC Technical Supervisor will need to complete an action plan to make sure the plan is followed, which is to be briefed out to site staff. The action plan shall be audited by the Odour Management Co-ordinator on the 6 monthly review meeting that this has been completed. If the odour management plan is being adhered to and investigations demonstrate the WRC/TC is the cause of the odour complaint the following will need to be conducted. This will be initiated by the Site Manager, TC Technical Supervisor, Area Scientist and Odour Management Co-ordinator.

Further investigations that could involve the following:

- Site Manager, TC Technical Supervisor, Area Scientist and Odour Management Co-ordinator perform general check of the site.
- “Sniff test” survey
- H_2S Survey.
- Measure the performance of abatement equipment.
- Process diagnosis.
- Asset investigations.
- Olfactometry surveys.

Following investigation further action may be required to abate odour emissions. It may require the following.

- Operational solutions.
- Process solutions.
- Maintenance procedures.
- Investment solutions.

If operational solutions and maintenance procedures are required the Site Manager and TC Technical Supervisor must put together an implementation plan. It is the Site Managers and TC Technical Supervisor responsibility to action and review the implementation plan. If process solutions or investment solutions are required an action must be raised on the company risk management system. This should be completed by the Area Scientist.

It is important that at all times the Site Manager is in liaison with the local authority and with local stakeholders (including the complainant). It is important that all parties are informed on the outcome of the assessment of the complaint and whether or not any action is to be taken. At each stage of the complaint procedure documentation of the decisions and findings will be made by the Site Manager to justify the measures chosen to resolve the odour nuisance. The Site Manager will forward any action taken to the Customer Support Unit to be recorded on

the Ops Contact Reporting System for future reference. Any further investigation or further action taken may result in a revision of the odour management plan.

Communication with the customer will be via the mechanism that they originally made contact with Wessex Water. They will be informed of the outcome of the initial odour complaint investigation, whether further investigation should be carried out and what action has been taken where it has been required. Wessex Water aim to respond within 5 working days of the complaint being made unless the customer has requested they do not wish further contact. Following contacting the customer the rapid reference will be closed out unless there are further odour investigations required. The customer will be updated on the results of these odour investigations before the complaint can be closed out.

In the event of an odour issue affecting multiple customers within the community Wessex Water site management team will decide the level of response that is required. This could include, but not be restricted to, stakeholder liaison (communication through local councillors and local resident representatives), community engagement meetings to discuss the odour issues being experienced and actions that will be undertaken, site open days, local media liaison and writing to local residents via a letter drop. Customers may also be requested to complete odour diaries (see appendix 1).

15.0 Training:

Each operator, manager, supervisor and scientist is trained on all processes with which they are associated. The training is supported by a number of process manuals. Upon completion of the training, every operator is assessed on each process of every site they work on, as well as a 'basic' site assessment.

Staff at all levels having duties related to the management, operation, maintenance or repair of odour-critical plant will be trained, competent and have documented training records. All Wessex Water staff involved with odour-critical plant will have access to the Wessex Water Operating Manual on Odour Control and undertake associated training and competency assessments.

A copy of the Odour Control Operation Manual is kept on the odour page of the Wessex Water intranet for reference. Odour Control Operation Manual: TRTMAN007

16.0 Preliminary Odour Risk Assessment Procedure (PORA)

The preliminary odour risk assessment is a procedure that provides guidance on how to assess the potential odour impact from a proposed development scheme during the design phase. It seeks to identify schemes where the risk of the development creating an odour nuisance is high and where odour control technology, changes to plant handling or other odour mitigation methods need to be built into project design.

The procedure applies to capital works projects that include permanent or temporary works

The need for a PORA will be identified in the Environment and Third-Party Management Plan (E3MP) procedure.

The assessment will determine whether the scheme is at a low or high risk of creating an odour nuisance at sensitive receptors and the appropriate action required. For example, this may include the undertaking of an odour survey and/or model, alter mode of operation or install odour control equipment.

It is important as part of the preliminary odour risk assessment procedure that the Odour Management Co-ordinator is contacted to confirm current Odour Management Plan status for the site, current operational issues and odour complaint history.

17.0 Encroachment by External Developers

Where potential new development falls within the Wessex Water consultation zone TRTWG669 is to be followed. The potential developer must request a copy of the procedure from Wessex Water Planning Liaison Team. The procedure provides guidance on how to assess the odour impact from WRCs or Sewage Pumping Stations (SPS). The following policies and guidance below must also be consulted.

The National Planning Policy Framework (NPPF) (2012)

The NPPF describes the policy context in relation to pollutants, including atmospheric pollution.

'The Government's objective is that planning should help to deliver a healthy natural environment of the benefit of everyone and safe places which promote well being.

To achieve this objective, the planning system should aim to conserve and enhance the natural and local environment by:
[…]preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of land, air, water or noise pollution or land instability.'

Where pollution is defined as:

'Any consideration of the quality of land, air, water, soils, which might lead to an adverse impact on human health, the natural environment or general amenity. Pollution can arise from a range of emissions, including smoke, fumes, gases, dust, steam and odour.'

The NPPF specifically requires consideration of pollution on health and the natural environment as part of the planning decision process:

'To prevent unacceptable risks from pollution and land instability, planning policies and decisions should ensure that new development is appropriate for its location. The effects (including cumulative effects) of pollution on health the natural environment or general

amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be taken into account.

The Institute of Air Quality Management (IAQM): Guidance on the assessment of odour for planning

The Institute of Air Quality Management (IAQM) published guidance on the assessment of odour for planning in 2014 (updated 2018). The guidance is for assessing odour impacts for planning purposes.

The guidance states that "*IAQM is of the opinion that the practitioner should observe, from the various scientific studies, case law and practical examples of the investigation of odour annoyance cases that in any specific case, an appropriate criterion could lie somewhere in the range of 1 to 10$ou_E m^{-3}$ as a 98th percentile of hourly mean odour concentrations."*

The guidance states that *"Loss of amenity or disamenity does not equate directly to nuisance and significant loss of amenity will often occur at directly lower levels of emission then would constitute a statutory nuisance"*

CIWEM Policy Position Statement (2011)

"*CIWEM considers that the following framework is the most reliable that can be defined on the basis of the limited research undertaken in the UK at the time of writing:*

• C98, 1-hour >10 ou_E/m^3 - complaints are highly likely and odour exposure at these levels represents an actionable nuisance;

• C98, 1-hour >5 ou_E/m^3, - complaints may occur and depending on the sensitivity of the locality and nature of the odour this level may constitute a nuisance;

• C98, 1-hour <3 ou_E/m^3, - complaints are unlikely to occur and exposure below this level are unlikely to constitute significant pollution or significant detriment to amenity unless the locality is highly sensitive or the odour highly unpleasant in nature."

EA Horizon Guidance Document H4 (2012)

Benchmark levels

"The benchmarks are based on the 98th percentile of hourly average concentrations of odour modelled over a year at the site/installation boundary. The benchmarks are:

- *1.5 odour units for **most offensive** odours:*
- *3 odour units for **moderately offensive** odours;*
- *6 odour units for **less offensive** odours.*

(caution should be used as these benchmarks were not from a sewage treatment works and the benchmarks were designed to be applied to those industrial processes regulated by an Environmental Permit. It is generally considered that sewage treatment works odours fall into

the middle category (3 ou_E/m^3) unless there is septic wastewater or sludge on the site, in which case the most stringent criterion may apply).

Examples of previous decisions in statutory nuisance cases and planning appeals are listed below (caution should be exercised as decisions will have been based solely on the evidence presented at the time, which may have been incomplete or of a different standard to current best practice).

- Newbiggin appeal (1993) reference APP/F2930/A/92/206240; adoption of a level of $5ou/m^3$ ($C_{98,1hr}$) (caution required as units are given as ou/m^3 and not ou_E/m^3) is both reasonable and cautious.

- Leighton Linslade appeal (2010) reference APP/P0240/A/09/2110667. At a threshold of 5, evidence of no harm is not convincing and there could be a risk of regular and unacceptable odour annoyance to such an extent that it would detract from the future resident's living conditions.

- Mogden case (statutory nuisance) [2011] EWHC 3253 (TCC). Nuisance certainly established at $5ou_E/m^3$

- Cockermouth appeals (2012) references APP/G0908/E/11/2152403 and A/11/2151737. $3ou_E/m^3$ for medium offensiveness.
- Stanton appeal (2012) reference APP/E3525/A/11/2162837. More appropriate threshold $3\text{-}5ou_E/m^3$.

- Gillingham (Dorset) (2016) appeal APP/N1215/W/15/3005513. I conclude that the appropriate parameter to apply in this case is the $3ou_E/m^3$ contour line.

References

Wessex Water Documents
- DS464 - Odour Management
- DS 540 - Sewage Pumping Stations and Pumping Mains
- TRTWP102 – Generic Odour Management Plan
- TRTMAN007 - Odour Control
- TRTWG669 - Odour impact and odour risk assessment procedure for existing WRCs/STC/SPSs, proposed new expansion/development of a site and potential encroachment around/near a site.
- WECEP004 - Preliminary Odour Risk Assessment
- NTKWP222 – Pumping Station Generic Odour Management Plan

Applicable regulation
- Environmental Protection Act 1990
- Public Health Acts 1936, 1961, 1969
- The National Planning Policy Framework (NPPF) (2012)

Further Guidance
- Best Practical Means (BPM), A Guidebook for Odour Control at Wastewater Treatment Works, UKWIR 06/WW/13/8
- BS – EN 12255-9:2002 – Waste Water Treatment Plants – Part 9: Odour Control and Ventilation
- Code of Practice on Odour Nuisance from Sewage Treatment Works (DEFRA, 2006) (withdrawn September 2017)
- Guidance on the assessment of odour for planning (Institute of Air Quality Management, 2014)
- H4 Odour Management Guidance (How to comply with your Environmental Permit), Environment Agency

Appendix 1 Odour Diary

Odour Diary					
Name Telephone number	Address				Sheet Number
Date of odour					
Time of odour					
Location of odour if not at above address (inside/outside)					
Weather conditions (dry, rain, fog, snow etc)					
Temperature (very warm, warm, mild, cold or degrees if known:)					
Wind strength (none, light, steady, strong, gusting).					
Wind direction (e.g. from NE)					
Describe the Odour (rotten eggs, musty, earthy, fishy, urine, sweet, vinegar)					
Intensity: How strong was it? See below 0-6					
How long did it last for (time)?					
Was it constant or intermittent in this period?					
Comments					

Intensity

0 No odour
1 Very faint odour
2 Faint odour
3 Distinct odour
4 Strong odour
5 Very strong odour
6 Extremely strong odour

Appendix 2: Sniff Testing Record Sheet

Sniff Test Assessment Date: Sampling period 5 minutes

Assessor: Confirmation assessor has met the following requirements on the back of this sheet: Y/N
Weather Conditions:

Sampling Point Location/Grid Reference Time of Sampling Wind Direction Wind Speed Air Temperature

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Intensity (I)																														

Max (I) = Mean (I) = Hedonic Tone if Odour Intensity >2 = Description of Odour if (I) >2=

Sampling Point Location/Grid Reference Time of Sampling Wind Direction Wind Speed Air Temperature

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Intensity (I)																														

Max (I) = Mean (I) = Hedonic Tone if Odour Intensity >2 = Description of Odour if (I) >2=

Sampling Point Location/Grid Reference Time of Sampling Wind Direction Wind Speed Air Temperature

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Intensity (I)																														

Max (I) = Mean (I) = Hedonic Tone if Odour Intensity >2 = Description of Odour if (I) >2=

Sampling Point Location/Grid Reference Time of Sampling Wind Direction Wind Speed Air Temperature

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Intensity (I)																														

Max (I) = Mean (I) = Hedonic Tone if Odour Intensity >2 = Description of Odour if (I) >2=

Sampling Point Location/Grid Reference Time of Sampling Wind Direction Wind Speed Air Temperature

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Intensity (I)																														

Max (I) = Mean (I) = Hedonic Tone if Odour Intensity >2 = Description of Odour if (I) >2=

Odour Assessor Requirements:

The odour assessor should confirm the following requirements to safeguard the quality of the sensory assessment are met.

- That the odour assessor has not got a blocked nose, cold, covid, virus, sore throat, sinus trouble, headache or generally feeling unwell.
- The odour assessor is not hungry or thirsty.
- The odour assessor must not work within half an hour of the end of their last meal.
- The odour assessor must not smoke, vape or consume strongly flavoured food or drink, including coffee, for at least half an hour before the field odour survey is carried out, or during the survey. The odour assessor should not consume confectionery or soft drinks for at least half an hour before the field odour survey is carried out, or during the survey.
- Scented toiletries, such as perfume/aftershave should not be used on the day of the field survey.
- The vehicle used during the field odour survey should not contain any deodorisers.
- Where the odour assessor has travelled to site then a rest period must be taken before starting the survey.

Method:

- SSoW must be consulted before start of assessment. Odour assessor requirements must be confirmed and recorded on sheet before starting assessment.
- Wind direction, wind speed and air temperature are to be recorded.
- The assessor breathes normally. The assessor should inhale ambient air samples through the nose every 10 seconds.
- The odour intensity (I) (0-6) should be recorded for each 10 second period for a period of 5 minutes at each sampling point.
- Where the sniff testing is off site for potential encroachment. If odour intensity is a continuous 4-6 then the odour assessor should avoid olfactory fatigue/desensitisation by alternating each sample sniff of ambient air with a sniff of odour-free air from an ori-nasal face mask fitted with carbon filters.
- Where the sniff testing is on site or boundary sniff testing for customer complaints or EA permit requirements if odour intensity is a continuous 4-6 then the odour assessor should avoid olfactory fatigue/desensitisation by stopping sampling after a max of 1 minute (or before) if extremely strong and move to cleaner air.
- Sampling must stop immediately, and the assessor must move to cleaner air if the assessor becomes unwell due to the strength of the odour.
- If an (I) of >2 has been recorded the hedonic tone must be recorded along with an odour description.
- Where sniff testing is being completed for potential encroachment Max (I) should be plotted on a map for each sampling point to identify the sites odour plume and the matrix to assess the odour exposure and odour effect at individual receptors must be calculated.
- Where sniff testing is being completed for EA permitting requirements due to an EA Approved Odour Management Plan (OMP) the Max (I) and Hedonic Tone must be recorded for each boundary sampling point on the form contained in Appendix 2 of the OMP.

Document Control/Revision Sheet

ISSUE	AUTHOR	DATE	COMMENTS
14	Jim Humphries	12/01/2024	Document rewritten and now includes Christchurch Treatment Centre (TC)