Permitting decisions

Variation

We have decided to grant the variation for **Watchmead Chemical Machining of Titanium Plant** operated by **RTI Advanced Forming Limited**

The variation number is **EPR/VP3132FV/V005.**

We have also carried out an Environment Agency initiated variation to the permit.

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 checklist to show how all relevant factors have been taken into account

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. The introductory note summarises what the variation covers.

Key issues of the decision

1. Introduction

This is a substantial variation. The reason for this is the increase in the capacity of the upgraded Effluent Treatment Plant activity 5.3 A (1) (a) (ii) is greater than activity threshold of 10 tonnes per day.

This variation is in consequence of an application made by the operator to reflect the following key changes

- I**mprovements to the existing Effluent Treatment Plant (ETP) including**
  - The addition of 5 tanks for balancing and settling
  - The addition of 2 tanks (sulphuric acid and sodium hydroxide) for pH adjustment
  - The construction of an "equipment kiosk" to house the chemically active part of the ETP.
  - The construction of bunding including screening to contain the plant

The purpose of this variation is to improve ETP process control and provide a robust system to minimise environmental impacts to sewer. There are no changes to air emissions with this variation application.

- **Addition of relevant scheduled activity for ETP plant –5.3 A(1) (a) (ii)**
  Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities – (ii) physico-chemical treatment.'
  The capacity of this is now updated above threshold to treat 96 m^3 per day. The table S1.1 has been updated to change ETP from a directly associated activity to a scheduled activity.

  It should be noted that in reality the current ETP was already above the threshold at 26 m^3 per day.

  The actual average effluent feed rate to this facility is unchanged at 20 m^3 per day. The capacity increase is only for an allowance for extreme short term loadings.

- **Correction of pickling activity** – this is confirmed as a scheduled Activity 2.3 (B) (a), rather than existing directly associated activity. There are no changes to the pickling process introduced within this variation

  This is the relevant activity because this is a surface treatment process, with vat capacity less than 30m^3 and emission to air of acid-forming oxide of nitrogen.

2. Sewer emissions

A H1 assessment for discharge to sewer and final discharge to River Lee is detailed below. The discharge is controlled under a Thames Water consent to discharge (annex F within Operator application supporting information). The operator provided this H1 assessment in their final schedule 5 response dated 9/11/17.

The assessment is based on application on our *"Permitting of hazardous pollutants in discharges to surface waters"* guidance.
This assessment is based on following criteria:

- Conservative emission level benchmarks are utilised for chromium, copper, nickel and zinc in line

with our EPR 2.07 TGN for Surface Treatment activities as the trace metals are linked to such activities. The benchmark installation emissions for long term impact assessments are 1 mg/l for copper, nickel and chromium and 2 mg/l for zinc. The short term peaks are 50 % higher for all parameters.

- In reality the monitored data from the existing facility is already in compliance with these benchmarks (as submitted with 25/09/17 duly making response). In addition it is expected that the new improved ETP will provide further reduction in final effluent discharge concentrations.
- Environmental Quality Standards have been updated in line with our latest guidance entitled "Permitting of hazardous pollutants in discharges to surface waters" version dated May 2016.

Inland Surface Water Discharge Assessment

A summary of the assessment is as follows:

Test 1: Does the concentration of the substance in the discharge (ELV) exceed 10 percent of the EQS?

Substance	Annual Average Long term EQS µg/l	ELV Long Term discharge emission µg/l	ELV <10% of EQS LT	Maximum Allowable Concentration (MAC) Short Term EQS µg/l	ELV discharge emission µg/l	ELV <10% of EQS ST
Chromium III	4.7	1000	Fail	32	1500	Fail
Copper	1	1000	Fail	-	-	-
Zinc	10.9	2000	Fail	-	-	-
Nickel	4	500	Fail	34	1500	Fail

Conclusion

All the parameters do not screen out at Test 1.

Test 2: Process contribution <4% of the EQS – see details below

- ***The process contribution is < 4% of the EQS Maximum Admissible Concentration (MAC) and***
- ***The process contribution is < 4% of the EQS Annual Average.***

Parameter	EQS Annual Average µg/l	PC LT µg/l	PC/EQS %	>4% EQS	EQS MAC	PC ST µg/l	PC/EQS%	>4% EQS MAC
Zinc	10.9	0.0477	0.44	No	-	-	-	-
Copper	1	0.00152	0.15	No	-	-	-	-
Chromium III	4.7	0.00116	0.25	No	32	0.084	0.26	No
Nickel	4	0.0239	0.60	No	34	0.1727	0.51	No

Conclusions:

All parameters for this installation are assessed as having insignificant environmental impact against H1 4% screening assessment. No further assessment is required, as parameters screen out.

Chromium VI assessment

The operator schedule 5 response dated 12/05/17 states that the chromium VI emissions to sewer are negligible due to on-site effluent treatment conversion of chromium III emissions to chromium VI emissions via primary treatment step before precipitation.

Even a highly conservative assessment of zero conversion of chromium III to VI leads to installation chromium VI process contribution being <4% of long term EQS (3.4 µg/l) for chromium VI.

Hence chromium VI impacts are assessed as insignificant.

3. Containment

Bunding

The first schedule 5 response dated 13/10/17 confirms the all tanks and bunds are designed to comply with the following standards and guidance requirements, which includes bund volumes as a minimum >110 % of individual tank volumes and > 25% of aggregated tank volumes:

- Environment Agency Pollution Prevention Guideline Note 2: Above Ground Oil Tanks (PPG2);
- Environment Agency Pollution Prevention Guideline Note 11: Preventing Pollution on Industrial Sites (PPG11);
- Environment Agency Pollution Prevention Guideline Note 26: Pollution Prevention in the Storage and Handling Drums and Intermediate Bulk Containers (IBC's);
- CIRIA C958: Chemical Storage Tank Systems – Good Practice
- CIRIA 736: Design of Containment Systems for the Prevention of Water Pollution from Industrial Sites.

In addition, due to the proximity of the external tanks to the site boundary, the outer bund will have additional screening to increase height which will prevent loss of containment 'jetting' in the unlikely event of catastrophic failure. This will also ensure that the containment capacity of this bund is greater than 25 % of the aggregated tank volumes and provide complete containment in the event of a major incident i.e. tank or pipework failure.

Improvement program IC4 has been update to ensure liquid volume containment and jetting leaks captured in bunded areas, as operator has stated that additional screening is to be provided to capture jetting leaks.

4. New Effluent Treatment Plant (ETP) Design

The following responses on the subject of ETP Design were provided in the Operator initial schedule 5 response dated 13/10/17.

Design features to allow for normal/abnormal effluent loadings from main installation activities:

The proposed ETP has been designed with far greater potential capacity than will be required from normal operational loading. Though treating approximately 20 cubic metres per day of effluent, the new ETP has the potential to treat 96 cubic metres per day, giving it significant operational headroom in the event of extreme operational loading.
All tanks are alarmed and have the ability to automatically shut-off the feed from Tank 1 (balancing tank) in the event that abnormal conditions (e.g. pH) is detected for prolonged periods of time. The Balancing Tank has sufficient capacity to cope with the inflow of water from the sump if this occurs.

Control parameters/monitoring methods and alarm triggers in place for effective ETP treatment

The plant has been designed to continuously monitor pH within Tanks T2 (pH Correction Tank) and T3 (Pumping Tank) to allow the correct addition of chemical reagents and pH balancing chemicals to achieve the final pH balance. If abnormally high or low pH range is detected in Tank T3, rather than continuing through the system to Tank T4 (settlement tank), recirculation mode is activated which transfers the wastewater back to balancing tank T1 to undergo pH conditioning again in Tank T2.
In the event of abnormal pH readings, these tanks are alarmed to allow the operator intervention to determine the problem and allow the correct remedial action to be implemented.
In addition, an existing pH probe is located between Tank 4 (Settlement Tank) and the final discharge point, which will be alarmed to alert the operator in the unlikely event that abnormal pH is detected.
Any pH reading outside of the operating range of 6 and 11 will be prevented from discharge to sewer.

Decision checklist

Aspect considered	Decision
Receipt of application	
Confidential information	A claim for commercial or industrial confidentiality has **not** been made.
Consultation	
Consultation	The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement. The application was publicised on the GOV.UK website. We consulted the following organisations: List the organisations consulted • HSE • Local council Environmental health Department. No responses were received.
Identifying confidential information	We have not identified information provided as part of the application that we consider to be confidential.
The site	
Extent of the site of the facility	The operator has provided plans which we consider are satisfactory, showing the extent of the site of the facility including air and sewer discharge points. The site plan is included in the permit. There is no change in installation boundary with this variation
Site condition report	The operator has provided a description of the condition of the site, which we consider is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the Industrial Emissions Directive. The site condition report was submitted with duly making responses dated 25/09/17. The installation does not lead to any changes to the installation boundary and the footprint of the new ETP is unchanged from that of the old ETP. All new tankage is housed within bund of sufficient volume to contain spillages , as per details given above in this decision document The operator has decided to base the protection of land and ground water protection from any fugitive emission linked to new ETP on containment and operating procedures , without the addition of any baseline intrusive sampling The site condition report more specifically includes the following control measures that have been incorporated into the design of the new activity to protect groundwater and soil from installation substances; • Emergency Spill kits (oils and chemical response) will be provided throughout the site and strategically placed in locations associated with bulk and temporary storage, sites drains and waste liquids;

Aspect considered	Decision
	• All storage tanks will be equipped with secondary containment bunds that have been designed to comply with Pollution Prevention Guideline Above Ground Oil Storage Tanks PPG 2; • All storage tanks will be fitted with level gauges, alarms and hardwired into the monitoring system; • All aspects of the operational facility will be located on impermeable concrete slabs; We accept the operator's conclusion that the risk of groundwater and land contamination is low.
Biodiversity, heritage, landscape and nature conservation	The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat. We have assessed the application and its potential to affect all known sites of nature conservation, landscape and heritage and/or protected species or habitats identified in the nature conservation screening report as part of the permitting process. We consider that the application will not affect any sites of nature conservation, landscape and heritage, and/or protected species or habitats identified. The variation is not linked any specific parameters with ecological environmental standards. We have not consulted Natural England on the application. The only European Site within the 10 km screening distance is approximately 9km from the installation. This is Wormley-Hoddesdonpark Woods (SAC). There are no specific parameters with ecological standards linked to the variation and the significant distance of 9 km from the installation the impact of this European site is considered insignificant. In brief there are no additional impacts on this habitat site linked to this variation. Overall the measures, as detailed above in site condition report section, will ensure effective control in event of fugitive emissions. The decision was taken in accordance with our guidance.
Environmental risk assessment	
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory. The assessment shows that, applying the conservative criteria in our guidance on environmental risk assessment [or similar methodology supplied by the operator and reviewed by ourselves], all emissions may be categorised as environmentally insignificant The key issues section of this document provides H1 assessment to air and surface water in more detail.
Operating techniques	
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.

Aspect considered	Decision
	The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.
Permit conditions	
Updating permit conditions during consolidation	We have updated permit conditions to those in the current generic permit template as part of permit consolidation. The conditions will provide the same level of protection as those in the previous permit.
Improvement programme	Based on the information on the application, we consider that we need to update one existing improvement program as follows. Existing improvement program IC4 has been update to ensure liquid volume containment and jetting leaks captured in bunded areas, as operator has stated that additional screening is to be provided to capture jetting leaks. Existing improvement program IC5 has been update to ensure ETP commissioning report and associated effluent monitoring is carried out in line with schedule 5 response from the operator dated 13/10/17. All other historic improvement programs have been completed.
Emission limits	No emission limits have been added, amended or deleted as a result of this variation.
Monitoring	We have decided that monitoring should be amended for the following parameters, using the methods detailed and to the frequencies specified: The new continuous pH monitoring will be in compliance with the M18 MCERTS techniques. Continuous monitoring of pH is undertaken within the system in Tanks T2, T3 and on the outfall. With the exception of the existing pH probe installed on the sewer outfall, all probes and monitors incorporated into the 'new' plant will all be new units. The S1 final discharge pH monitoring is in line with our Mcerts monitoring technique as defined in M18 Mcerts guidance (BS ISO 10523) and the existing pH probe is confirmed as certified Mcerts equipment. This is confirmed in request for information response dated 20/11/17.
Pre-operational condition	We have introduced one pre-operational condition for the operator to provide a commissioning protocol for the updated ETP. The specific reason is to ensure a protocol is in place for a commissioning report to then provide actual emission levels to sewer are in line with H1 assessment submitted with this variation.
Reporting	We have amended reporting in the permit in line with the monitoring changes listed above.
Operator competence	
Management system	There is no known reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.

Aspect considered	Decision
Growth Duty	
Section 108 Deregulation Act 2015 – 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 vary this permit. 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

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. The consultation and public advertising ran from **28/09/17 to 25/10/17.**

No responses from organisations listed in the consultation section.