

**This form will report compliance with your permit as determined by an NRW officer**

Site	Barry Thermosets Plant EA/EPR/PP3238LX/V002	Permit Ref	PP3238LX		
Operator/Permit holder	Hexion UK Limited				
Regime	Installations				
Date of assessment	24/04/2018	Time in	10:00	Out	16:00
Assessment type	Report/Data Review				
Parts of the permit assessed	Routine submissions, ICs, containment, ETP				
Lead officer's name	Kemp, Andi				
Accompanied by					
Recipient's name/position	Ian Beatty/ EH&S Manager	Date issued	14/03/2019		

### Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations or the licence under the Water Resources Act 1991 as amended by the Water Act 2003. A detailed explanation is captured in "Compliance Assessment Report Detail" (Section 2) and any actions you may need to take are given in the "Action(s)" (section 4). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our Compliance Classification Scheme (CCS). CCS Scores can be consolidated or suspended where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your local office.

Permit conditions and compliance summary	CCS Category	Condition(s) breached
A1 - Specified by permit	A	
B1 - Infrastructure - Engineering for prevention and control of emissions	A	
E1 - Emissions - Air	A	
E3 - Emissions - Surface water	A	
G1 - Monitoring and Records, Maintenance and Reporting - Monitoring of emissions and environment	A	
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	A	

**KEY:** See Section 5 for breach categories, suspended scores will be indicated as such.  
**A** = Assessed or assessed in part (no evidence of non-compliance), **X** = Action only,  
**O** = Ongoing non-compliance, not scored.

<b>Number of breaches recorded</b>	<b>0</b>	<b>Total compliance score</b> (see section 5 for scoring scheme)	<b>0</b>
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**If the Number of breaches recorded is greater than zero, please see Section 3 for our proposed enforcement response**

## Section 2 – Compliance Assessment Report Detail

This section contains a report of our findings and will usually include information on:

- The part(s) of the permit that were assessed (eg. Maintenance, training, combustion plant, etc)
- Where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- Any non-compliances identified
- Any non-compliances with directly applicable legislation
- Details of any multiple non-compliances
- Information on the compliance score accrued inc.
- Details of advice given
- Any other areas of concern
- Any actions requested
- Any examples of good practice
- A reference to photos taken

### **Compliance Assessment: Hexion Chemicals Barry Plant (EPR/PP3238LX) – March 2019**

#### **Purpose of Compliance Assessment**

This compliance assessment report covers the following regulatory aspects:

- Open actions and recommendations
- Minor incidents and queries
- Effluent pipeline incident and subsequent assessment of effluent line and vacuum breaker valve
- IC4 – ETP assessment and specifically phenol limit
- Formal update on site condition report – ref. NRW letter 11<sup>th</sup> Jan. 2018
- Accident management plan review
- Energy efficiency review
- Efficient use of raw materials review
- Avoidance, recovery and disposal of waste review
- Site closure plan review
- Routine effluent monitoring data: Jan. 2017 – Dec. 2018 – quarterly: W1 and E1
- Routine air emissions monitoring: 2018 and 2019 – quarterly and annual A1 and A2
- Annual production and performance parameters 2017 and 2018 including review of monitoring data and EMS improvement target progress
- Inspection 24<sup>th</sup> April 2018
- Update on effluent treatment plant (ETP) inspection 1<sup>st</sup> Nov. 2018

#### **Open Actions and Recommendations**

There are only two open actions up until and including CAR1 of 9<sup>th</sup> Oct. 2017, these are:

- Action 6 Hexion 19<sup>th</sup> May 2016 and concerns the borax trial. No update has been given for this item and it is assumed that the operator is not in a position to currently pursue this trial. Action still open.
- Action 5 Hexion 19<sup>th</sup> Jan. 2017 and concerns the glycol bund. Submissions were received on 7<sup>th</sup> Mar. 2018 and 20<sup>th</sup> Mar. 2018 (extension agreed) and comprised a covering letter, detailed engineering drawing (V-C8664-OIC-V01-00-DR-S) and a photograph. The bund was also inspected in April 2018 – see inspection section below. Action closed.

In terms of recommendations:

- Recommendation 1 Hexion 19<sup>th</sup> May 2016 – interpretative comments based on routine monitoring results, as per condition 4.2.1(a) – now accompany the annual submission.
- Recommendation 2 Hexion 19<sup>th</sup> May 2016 & Recommendation 1 Hexion 9<sup>th</sup> Oct. 2017 – concerned advice given for continued review of fugitive emissions. This is an ongoing area to be periodically revisited by the regulator with the expectation that advice has been followed.
- Recommendation 3 Hexion 19<sup>th</sup> May 2016 – concerned ETP performance and emission limits – this is now taken forward in closing out IC4 and ongoing ETP assessment work, which are included separately in this assessment report.
- Recommendation 4 Hexion 19<sup>th</sup> May 2016 – concerned the site condition report and establishing a site condition baseline. This is written up separately in this assessment report.
- Recommendation 1 Hexion 19<sup>th</sup> Jan. 2017 – concerned improvements that could be made to the diesel dispense area. This was revisited during the inspection in Apr. 2018.
- Recommendation 2 Hexion 9<sup>th</sup> Oct. 2017 – concerned adequacy and availability of spill kit in various relevant at risk locations. This was revisited during the inspection in Apr. 2018.
- Recommendation 3 Hexion 9<sup>th</sup> Oct. 2017 – concerned reviewing the analytical methods used for monitoring of emissions against the latest guidance (EA M18 etc.). This will be expected to be demonstrated during the next OMA (2020).

### **Minor Incidents and Queries**

*Severe Weather* – In March 2018, during a spell of prolonged cold weather and snow, AK (NRW) emailed the operator to check on poor weather preparedness (1<sup>st</sup> Mar. 2018). Ian Beatty (Hexion) responded the same day. Production had been stopped with only essential personnel kept on site. Monitoring of the weather forecast and planning personnel availability continued throughout. Typical things the regulator checks are aspects that could lead to incidents on site, such as tankers waiting, freezing lines, interruption to power supply, loss of boiler / steam, snow on rooves of vessels, drainage system capacity.

*BS1 14001 registration* – The operator sent through the latest extant registration to the 14001 standard. This is expected to be maintained by the operator.

*Aquacheck results* – During the 2016 OMA, the operator stated they were joining the Aquacheck analysis proficiency scheme. AK requested evidence of the results thus far. IB submitted a spreadsheet containing

7 samples (Dec. 2016 – Feb. 2018), all except one were acceptable. There was one questionable result (Aug. 2017), but since then the results have recovered. The questionable result was a Hexion value of 53 against an Aquacheck analysis of 44.1. At this stage, based on the 2016 OMA and discussions with the staff on site who manage the ETP and in house analysis of effluent, the regulator has no concerns about the ability of the site to carry out its own analysis. The on site labs are also used for analysis of raw material quality and customer product batch quality.

*Boiler stack monitoring* – In Nov. 2017 IB reported an issue with the boiler economiser stack during the monitoring campaign. Usually the boilers emit via the economiser stack, but there is a bypass. The economiser stack is the emission point that has been evaluated in the Site Specific Protocol that the MCerts monitoring contractor has drawn up for their monitoring campaigns. In an email response to this query, AK stated that the options were either to ensure the boiler bypass stacks are also M2 compliant (ref. EA guidance note M2) or delay the monitoring until such time as the economiser is viable again. It is not expected that this situation would be so prevalent as to be an issue. Operator to decide which option it would use in the event of economiser stack unavailability.

*Bund Capacities* – This is also relevant for the COMAH regime. AK sent an email to IB (30<sup>th</sup> Apr. 2018) in response to questions on bund capacities from the operator. Limiting the narrative here to EPR (filing the email response in the COMAH files), the main points that came out are: follow HSE good practice with regard to number and proximity of tanks in shared and adjacent bunds; the capacity of the bund should be 110% of largest tank volume or 25% of total tank volume, whichever is greater – with a robust justification (refer to email) why the 25% rule could be seen as a standard to aim for - it depends on typically how many tanks, how full they are, how often they are filled etc.; you could engineer dividing walls within larger bunds; you could develop procedures to overpump into other secondary containment bunds in an emergency to alleviate capacity pressures on a specific bund. The operator is to review bund capacities and storage tank situation on an iterative basis, exploiting any opportunities to implement best practice. This is likely to be examined in the future by the regulator and / or covered in the COMAH safety report.

*Sealine pH probe* – On 12<sup>th</sup> June 2018 the operator notified AK that the sealine pH probe was down and that the spare was also damaged. The site manually tested pH every hour during discharge. Spare continuous monitoring equipment provision often comes up in the OMA and looking at the dates of the emails from IB, can it be inferred that the site was without a spare from 12<sup>th</sup> June 2018 – 29<sup>th</sup> June 2018? It is vital that the site have sufficient spares that are in a working condition and at the very least, have contingency procedures. It appears that Hexion are managing their equipment in this regard, and contracts with suppliers and repair firms should be regularly reviewed against the OMA standards.

### **Effluent pipeline incident and subsequent assessment of effluent line and vacuum breaker valve**

In Mar. 2018 IB notified NRW that someone had drilled a hole in the steel effluent line downstream of the tidal flap. This was deemed an act of vandalism and this was supported by a written admission of such from a man claiming the site was killing fish – presumably in reference to the effluent discharge. Hexion were advised to report to the police and the person was directed to speak to NRW about environmental concerns. An NRW incident officer attended the scene and this was when the vacuum breaker valve on this part of the sealine was seen to be “bubbling”.

The operator then took over assessment of the vacuum breaker valve and ultimately after having a third party inspect it, chose to replace the valve and place a cover over it. See email and photographs sent by IB 11<sup>th</sup> Dec. 2018.

Linked to this and mentioned in the Apr. 2018 inspection was a general query about the condition of the effluent pipeline. To this end the operator submitted some background information and an inspection report from ABB (visual) including some non destructive ultrasonic testing certificates. Part of the steel pipeline was replaced by three smaller HDPE lengths in 2002 and initially were categorised as temporary. Since then a two year inspection programme has been implemented and the latest inspection report from Nov. 2017, conducted by ABB, was submitted as evidence to the regulator that the pipeline is still fit for purpose, for the duty concerned and is regularly inspected.

While the overall assessment states that the pipeline is fit for purpose there are some comments and recommendations in the report. The regulator highlights the following points:

- Are there some parts of the line that have not been assessed?
- What are the plans to deal with any sections of damaged river bank?
- What is the current situation with regard to the ABB recommendation to check, descale, thickness check and epoxy coat 10 % of the lower support legs?
- Some carbon steel spools need painting.
- It is assumed the NDT testing has taken place and that the results required no repair / replacement?
- Detailed line support survey recommended.

**Action 1 Hexion 11<sup>th</sup> Mar. 2019:** *Hexion to update the regulator on the 6 bullet points above concerning the effluent pipeline. Due: 30<sup>th</sup> April 2019*

#### **IC4 – ETP assessment and specifically phenol limit**

In order to finally close out Improvement Condition 4, the most recent communication to the operator from NRW was in the Jan. 2017 CAR1 and this recommended detailed modelling of the 10 mg/l phenol emission limit. The deadline for IC4 was extended until Dec. 2017 and the operator submitted the following: AECOM Environmental Risk Assessment – Phenol Emissions to Water (21<sup>st</sup> Dec. 2017) – rec'd 22<sup>nd</sup> Dec. 2017. This report includes as Appendix B, Sea Outfall Modelling Report (More Energy Ltd. Dec. 2017).

NRW has assessed the H1 screening assessment tests in the submission and read the detailed modelling report. NRW cannot find any obvious flaws or deficiencies with the way the modelling inputs and scenarios have been developed and applied. NRW also accepts that the background concentration of phenol will be low (50% of EQS too conservative) and hence effectively zero. Factoring this in and taking on board the worst case, maximum release at low tide, the EQS is not exceeded. For the majority of the time, using average release concentrations (around 2.85 mg/l) and variable tidal situations, NRW accepts that the EQS will not be breached and that the initial mixing zone does not enter the designated habitat areas.

Therefore no additional work at this time is required and the 10 mg/l phenol emission limit value is currently protective of the environment. Phenol does not have a BAT AEL in the Common Waste Water Treatment in the Chemical Industry BRef. This will be looked at again during the IED permit review – although at this time, with the BRef development uncertainty, NRW cannot anticipate if there will or will not be a BAT AEL for phenol which would be lower than 10 mg/l. Other parameters, such as BOD and COD have BAT AELs higher than 10 mg/l. **IC4 is now closed.**

#### **Formal update on site condition report – ref. NRW letter 11<sup>th</sup> Jan. 2018**

This is to formally confirm (ref. AK letter to Hexion 11<sup>th</sup> Jan. 2018) that the Enzygo Site Baseline Report (CRM.516.001.HY.BR.001, Nov. 2016) has been accepted as the SCR for the Hexion Barry site. This will need to be referred to when the operator submits their response to the r61 (EPR) notice during the IED permit review – from the date of reviewed permit issue the 5 year and 10 year groundwater and soil monitoring will be triggered. In preparation for the IED review the operator will need to revisit the 12 points in the NRW letter 11<sup>th</sup> Jan. 2018.

#### **Accident management plan review**

This permit condition (1.2.1) was discussed in Apr. 2018 and following that inspection, the operator submitted a review on 1<sup>st</sup> May 2018. The site is an Upper Tier COMAH site, so accident management is largely controlled under the COMAH regime. However, under EPR (and factoring in that a site could fall out of scope of COMAH) there could be many potential incidents that fall well below COMAH thresholds, e.g. leaking / damaged IBCs, seepage from sewers, reactor relief systems, fuel dispense issues, effluent treatment system malfunction etc.

The COMAH emergency arrangements provide a lot of the main documentation: plans, drawings, emergency muster points, contacts, checklists etc. Several scenarios, including minor spills, are included in the site emergency plan (BSP1.02). NRW has referred to the permit application (URS Mar. 2006), section 2.8 Accident Management. This documentation better addresses the small / low level events that the EPR AMP is designed to manage, i.e. sub COMAH. Table 2.8.2 of the URS Application includes a variety of typical events that would be included in an AMP. This table contains columns that refer to SOPs and as a random check NRW issues the action below.

**Action 2 Hexion 11<sup>th</sup> Mar. 2019:** *Hexion to provide the SOPs or other written evidence that explains what would happen to prevent and mitigate the following events: vessel overfilling, exceedance of limit in effluent discharge, tanker offload spills and tanker leaks while outside delivery area. Due: 30<sup>th</sup> April 2019*

NRW acknowledges that the main raw material and production areas have secondary and tertiary containment and that the usual level and process alarms and surveillance are in place. The scenarios in Action 2 above, that NRW requires additional information for, have been selected so that the operator can demonstrate that non COMAH type events benefit from adequate preventative and responsive actions, which have been requested in the form of SOPs, checklists or whatever form the operator holds this information.

### **Energy efficiency review**

The review for this permit condition (1.3.1) was submitted on 1<sup>st</sup> May 2018. The main points gleaned from the submission are: new support engineer role for utilities monitoring; ESOS audit revealed no major energy saving opportunities identified; new chiller and improved efficiency; steam trap monitoring and air leaks etc.; forecasted 20% volume increase from same equipment, improving the energy per tonne product produced.

It is clear to the regulator that Hexion are actively seeking out areas where energy efficiency can be improved. The operator should be commended for their continued efforts.

### **Efficient use of raw materials review**

The review for this permit condition (1.4.1) was submitted on 1<sup>st</sup> May 2018. The main points declared by the operator are: automated recipes, metered by the DCS; waste reused or reworked; water use monitored weekly and mass balance used to identify leaks; scrubber, reactor wash water and distillate reused where possible; stock control to avoid stock going out of date; cooling water on a closed loop and blow down recycled. The operator has also adopted some recommendations from Welsh Water and this has led to lower domestic use. The operator utilises various records in their SAP system. Additional things being considered by the operator are: investigation into the use of lignin in place of phenol; improved metering at the bio-plant; improving manufacturing processes; better understanding of towns water losses.

The site is clearly exploring potential opportunities and the amount of effluent and mass releases of phenol have reduced over the years. It is recognised that there will be certain constraints in any chemical manufacturing process, where the materials used are dictated by the chemistry and quality standards.

### **Avoidance, recovery and disposal of waste review**

Permit condition 1.5.1 requires the operator to take appropriate measures to prevent, reduce or recover waste, and review and record any changes every 4 years. The operator made a submission on 1<sup>st</sup> May 2018. Hexion have explored several potential waste reduction initiatives on top of identifying the need to exercise tighter control on the effluent plant. The operator is continually seeking to refine elements of the manufacturing process. Reusing distillate, reactor wash outs, product washes and scrubber liquor have all contributed to reducing waste produced. Hexion are encouraged to continue to review the site performance and actively seek out potential opportunities to minimise waste, especially hazardous waste production.

### **Site closure plan review**

Permit condition 2.7.3 requires the operator to review their site closure plan. The closure plan could be implemented for partial or temporary cessation of manufacturing activities. Additionally, whenever there are certain changes on site or to site processes, consideration should be given to using the opportunity to make improvements to the site infrastructure, which reduce the chances of pollution in the future. For example: removing below ground lines; fewer joins in pipelines; fully decommissioning redundant equipment and record and photograph.

The operator submitted a reviewed site closure plan on 1<sup>st</sup> May 2018 – this was the 2017 review – last review prior to that was Apr. 2013. It is understood that there are no plans to close the Barry site. It is also not the purpose of the review or this assessment to examine detailed work instructions, such as tank emptying and line flushing. The plan though is supposed to guide the operator through the closure process, triggering a variety of prepared method statements, confirmation of the order of events, assigning roles and responsibilities. The main points are raised in this site closure plan review, even though it is a brief document: decontamination of vessels, pumps and pipelines, permit to work system, waste disposal.

**Recommendation 1 Hexion 11<sup>th</sup> Mar. 2019:** *To complement the existing Site Closure Plan, Hexion should consider building on this document by including the following details:*

- *List the relevant procedures that would need implementing (draining vessels and pipelines, dismantling equipment etc.) – this ensures that the relevant procedure has a work instruction and is up to date.*
- *Provide an overall sequence of events from announcement of closure, through detailed procedures, to demolition, indicating what records should be kept. This could be a flowchart showing the key activities.*
- *The final monitoring data for groundwater and soil, for permit surrender, should not be taken while there is still decontamination, emptying and demolition activities going on.*
- *Protection of groundwater wells during site closure and eventual decommissioning of wells, so that no pathway exists for pollution migration.*
- *During the life of the permitted facility, records of below ground services (sumps, pits, sewers etc.) should be checked and up to date.*
- *Sewers and pipelines should be decommissioned and sealed or removed.*

- Staff and contractor management, especially with staff working under the stress of uncertainty
- Mobile fuel bowsers, contractor equipment, temporary waste storage etc.

### **Routine effluent monitoring and air emissions data: Jan. 2017 – Dec. 2018 – quarterly and annual: W1, E1 and A1**

The permit stipulates the emission points, limits and authorised releases (conditions: 3.1.1, 3.1.2 & 3.1.3), requires the monitoring of these emission points and parameters (condition: 3.6.1) and the reporting of the results on the prescribed forms (condition: 4.2.2).

*Releases to surface water W1:* Release point W1 is treated effluent and uncontaminated surface water released to the Severn estuary. The monitoring is continuous for flow rate and pH, daily for total volume and a weekly composite for the other parameters. Results to be reported quarterly, maximum result and average over the quarter. The operator has reported no exceedances using the Schedule 6 notification form (condition: 4.3.1(b)). Every parameter has been monitored, on the correct basis and the required frequency, with analytical method and method uncertainty stipulated. This assessment is just a check on the face value results declared by the operator (refer to OMA for a detailed audit on sampling, monitoring and result reporting). No results have exceeded the emission limit values.

*Emissions from the BAFF plant to the clean lagoon E1:* This emission point measures treated effluent to the clean lagoon. W1 is downstream of the clean lagoon. All that realistically happens in the clean lagoon is dilution, trace biological polishing (oxidation) and settlement. The regulator has queried the nature of this emission point and has contended that a better monitoring point would be the process influent as it enters the dirty lagoon – this would provide raw effluent data to complement the W1 data (treated effluent) and would shed some light on the performance of the effluent treatment plant – *it is believed the plant have data like this*. There are no limits specified for the 5 E1 parameters listed in Table S4.8 – although a simple check can be made of the E1 data verses the ELV and actual monitoring data, for the relevant parameter. For example: E1 (Q1 2017 max.) total suspended solids = 164 mg/l verses W1 total suspended solids ELV of 150 mg/l, and W1 data (Q1 2017 max.) = 88 mg/l. The regulator realises that direct comparison of E1 data to W1 data of the same period does not provide definitive evidence of ETP performance, at best it gives an indication of effluent quality entering the clean lagoon (E1) with treated effluent leaving the clean lagoon (W1). A statement can be made, based on the Jan. 2017 – Dec. 2018 E1 data verses the W1 ELVs, that TSS, methanol and free formaldehyde parameters for E1 are typically below the ELV at W1, whereas phenol and COD are above the W1 ELV. This suggests that the ETP (DAF, BAFF and lamella separator) is treating the simpler molecules (methanol and formaldehyde) and solids, but that still significant chemical oxidation demand loading (including phenol) is breaking through into the clean lagoon at E1 – this is based on the E1 data for phenol and COD. With dilution, settlement and some polishing in the clean lagoon, by the time W1 is monitored, COD and phenol are below the ELV. Refer to inspection of

*Annual mass releases at W1:* Condition 3.1.3 requires a mass total released to be reported for the parameters in Table S4.4. Some of these parameters are reflective of the combined effluents from Ineos and Zeon (both now surrendered): EDC, vinyl chloride and acrylonitrile. For 2017 both monohydric phenol and methanol were below the mass limit in Table S4.4. The same can be said for 2018, this time including free formaldehyde, which wasn't reported for 2017, but based on W1 data for 2017 was not detected at W1.

*Air emissions for A1 and A2:* A1 is the boiler and A2 is the scrubber from reactor vents. A1 is monitored annually for NOx and CO and as agreed there are two emission points monitored, one from each boiler - the total aggregated thermal input corresponding to the permit application data, which erroneously was transferred into the permit as one emission point. Both 2017 and 2018 A1 data is compliant. The scrubbed emissions from reactor vents are released via A2 and there are ELVs for phenol and formaldehyde and styrene is listed but with no ELV – these are required to be monitored quarterly. All results are compliant.

Referring to monitoring guidance notes M2 (air) and M18 (water), the correct methods have been indicated as being used. There has been difficulty in finding an up to date standard for monitoring formaldehyde and the operator has been using BS 2942 (1957) – BS have withdrawn this method. The Standing Committee of Analysts have an archived version of SCA Blue Book 135 – formaldehyde and other aldehydes (1988).

**Action 3 Hexion 11<sup>th</sup> Mar. 2019:** *Hexion to compare BS 2942 with the analytical method in SCA 135 and confirm whether the basis for the analysis is the same. The operator to also confirm whether they could use SCA 135 as the analytical method. Due: 30<sup>th</sup> April 2019*

### **Annual production and performance parameters 2017 and 2018 including review of monitoring data and EMS improvement target progress**

The operator is required to report certain performance parameters: water use, energy use and use per tonne of production. Overall water use is down in 2018 compared to 2017 and the use of energy and water per tonne of product has also reduced (i.e. improved efficiency) in 2018 compared to 2017. There are no other trends of note.

Condition 4.2.1 (a) – (e) requires an annual submission. Parts (c) and (d) are covered by the monitoring submissions. Part (a) is a review of the monitoring results; (b) is progress against EMS targets set; and (e) requires details of contamination and decontamination of the site. NRW has received submissions for 2017 and 2018.

The 2017 highlights are a reduction in phenol released through the effluent plant and an increase in production per metric of water and energy consumed. Other monitoring data shows process stability and

no exceedances or unusual trends.

2018 highlights are recertification to ISO 14001 and continued production efficiency. Despite a slight increase in mass of phenol released, the current emissions are nearly an order of magnitude lower than the mass release limit. 2018 also saw the development of an Environmental Targets table. For year end 2018 11 areas had targets set, including fugitive emission monitoring, permit exceedances, internal audits, environmentally critical preventative maintenance. The regulator will be interested in a more in depth look at some of these areas, especially the fugitive emission measurements (what, how), overdue maintenance tasks (what is defined as critical environmental kit) and environmental competence (what, how and who). The regulator refers the operator to comments made in CAR1 May 2016 with regard to EMS targets.

### **Inspection 24<sup>th</sup> April 2018**

A brief inspection took place after the office based discussion on 24<sup>th</sup> April 2018. This was not a focused inspection on any particular aspect of the site operations, but did look at the following:

- Reactor vent scrubbing system and emission point (A2)
- Raw material storage and production area bunds and sumps, including the glycol bund
- Air emission points boilers (A1)
- Diesel dispense and storage tank
- Spill kits in warehouse area

Action 5 Jan. 2017 referred to the glycol bund – this was constructed and action complete by 7<sup>th</sup> Mar. 2018. The finished bund was inspected visually during the April 2018 inspection and a general discussion took place about bund capacities – see comments earlier on in this CAR1 form. The bund appeared in good order, with cast corners and no pipe penetrations. The containment capacity was calculated allowing for the tank plinth and tank base.

The raw material storage and production areas drain via dedicated channels to steel lined sumps, which convey to the dirty lagoon and effluent treatment. Overall the production area is sealed by rollover bunds and a tertiary drainage system with sumps that can be sealed or drained to the effluent system. The diesel dispense and storage tank system was also examined. It was noted that the coupling for diesel off load is too close to the bund wall and is a potential risk for spurting losses.

**Action 4 Hexion 11<sup>th</sup> Mar. 2019:** *Hexion to confirm if the shortening of the delivery coupling pipe has been made and if not when will it be so. Refer to guidance (Pollution Prevention Guidance Notes and / or CIRIA).*  
**Due: 30<sup>th</sup> April 2019**

There was discussion about the operator's proposal to install an oil / fuel interceptor into the drainage

system adjacent to the diesel dispense pump.

**Action 5 Hexion 11<sup>th</sup> Mar. 2019:** *Hexion to confirm if the intention is still to install the interceptor and if so when. Due: 30<sup>th</sup> April 2019*

This brief inspection revealed no gross deficiencies or non compliances, such that can be observed simply visually – operations were being run in the normal manner, staff were conducting process operations and surveillance in the control room, vessels and associated pipework appeared fit for purpose, the production area appeared to be operating normal batch processes and the associated scrubber was active.

### **Update on effluent treatment plant (ETP) inspection 1<sup>st</sup> Nov. 2018**

Effluent treatment plant assessment is part of the NRW chemical sector plan for 2019 / 20. It is recognised that this is a technically complex area. Hexion were the first site to receive the initial audit on 1<sup>st</sup> Nov. 2018. In attendance were Ian Beatty (EH&S Manager) and Kieran Richards (ETP Technician) and following a desk based assessment of the ETP, its configuration and unit operations and processes, various data and engineering drawings, a physical inspection took place. KS guided the inspection from effluent entering the dirty lagoon, through the processes and discharge into the clean lagoon, before release via W1 and the associated monitoring. Ancillary aspects were also looked at, including the aeration of the dirty lagoon, addition of steam, dosing of coagulants, flocculants and anti foaming agents, sludge tanks, composite sampler and aeration of the BAFF and media type.

The main focus of this type of assessment is to ensure that the operation is optimised for the relevant target pollutant (in this case phenol and other small organics), utilising recognised treatment methods, in this case primarily aerobic biological treatment, dissolved air floatation and biological aerated fixed filter (BAFF), to remove / break down the target pollutants from the waste stream, whilst being operated accordingly by competent personnel. First impressions, notwithstanding detailed design criteria, are that the ETP has been designed to target the main pollutants (phenol, small organics, suspended solids and COD) and that it is being operated so as to achieve optimum pollutant breakdown (oxidation) and removal (solids removal). However, the assessment will need to look at the sizing of the plant and associated physical criteria, such as maintenance of temperature and dissolved oxygen, retention time, dissolved air feed rate and vessel size, sludge analysis, dosing of coagulation and flocculants. This will also include instantaneous and daily process parameters that operational staff examine and control in order to measure ETP performance and rectify deviations.

On 11<sup>th</sup> Dec. 2018 IB submitted additional information in response to regulator requests. The regulator will now use this information and the permit application documents, alongside the BRef to make an assessment of the ETP operation and efficiency. A subsequent report on the ETP audit will follow.

**END**



## EPR Compliance Assessment Report

**Report ID:  
CAR\_NRW0034823**

**This form will report compliance with your permit as determined by an NRW officer**

Site	Barry Thermosets Plant EA/EPR/PP3238LX/V002	Permit Ref	PP3238LX
Operator/Permit holder	Hexion UK Limited	Date	24/04/2018

### Section 3 – Enforcement Response

You must take immediate action to rectify any non-compliance and prevent repetition. Non-compliance with your permit conditions constitutes an offence and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below.

Other than the provision of advice and guidance, at present we do not intend to take further enforcement action in respect of the non-compliance identified above. This does not preclude us from taking enforcement action if further relevant information comes to light or advice isn't followed.

### Section 4 – Action(s)

This section summarises the actions identified during the assessment along with the timescales for when they will need to be completed.

Criteria Ref.	CCS Category	Action required/advised	Due Date
See Section 1 above			

## Section 5 – Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may

- Advise on corrective actions verbally or in writing
- Require you to take specific actions verbally or in writing
- Issue a notice
- Require you to review your procedures or management system
- Change some of the conditions of your permit
- Decide to undertake a full review of your permit

Any breach of a permit condition is an offence and we may take legal action against you

- We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.
- Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and/or suspension or revocation of the permit.

**See our Enforcement and Civil Sanctions guidance for further information**

This report does not relieve the site operator of the responsibility to

- Ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- Ensure you comply with other legislative provisions which may apply

### Non-compliance scores and categories

CCS category	Description	Score
C1	A non-compliance that could have a major environmental effect	60
C2	A non-compliance which could have a significant environmental effect	31
C3	A non-compliance which could have a minor environmental effect	4
C4	A non-compliance which has no potential environmental effect	0.1

**Operational Risk Appraisal (Opra)** - Compliance assessment findings may affect your Opra score and/or your charges. This score influences the resource we use to assess permit compliance.

## Section 6 – General information

### Data protection notice

The information on this form will be processed by the Natural Resources Wales (NRW) to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s). The NRW may also use and/or disclose it in connection with:

- Offering/providing you with its literature/services relating to environmental matters
- Consulting with the public, public bodies and other organisations (eg. Health and Safety Executive, local authorities) on environmental issues
- Carrying out statistical analysis, research and development on environmental issues
- Providing public register information to enquirers
- Investigating possible breaches of environmental law
- Assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Regulations request

The NRW may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

### Disclosure of information

The NRW will provide a copy of this report to the public register(s). However, if you consider that any information contained in this report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within fifteen working days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

### Customer charter

#### What can I do if I disagree with this compliance assessment report?

If you are unable to resolve the issue with your site officer, you should firstly discuss the matter with officer's line managers using the informal appeals procedure. If you wish to raise your dispute further through our official Complaints and Commendations procedure, phone our general enquiry number 0300 065 3000 (Mon to Fri 08.00 – 18.00) and ask for the Customer Contact team or send an email to enquiries@naturalresourceswales.gov.uk. If you are still dissatisfied you can make a complaint to the Public Services Ombudsman for Wales. For advice on how to complain to the Ombudsman phone their helpline on 0845 607 0987.

#### Welsh Language

If you would like this form in Welsh please contact your Regulatory Officer.