

Compliance Assessment Report

Report ID:
CAR_NRW0027036

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	19/01/2017	Time in	09:00	Out	17:00	
Assessment type	Report/Data Review					
Parts of the permit assessed	Fugitive emissions, infrastructure, Improvement Conditions					
Lead officer's name	Kemp, Andi					
Accompanied by						
Recipient's name/position	Ian Beatty/ EH&S Manager	Date issued	31/01/2017			

Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations. 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
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.		

Number of breaches recorded	0	Total compliance score (see section 5 for scoring scheme)	0
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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 Inspection: Hexion Chemicals, Barry

Purpose of Compliance Assessment

The purpose of this compliance assessment was to follow up on actions and recommendations raised in CAR1 issued May 2016 and the onsite meeting of 16th December 2016.

An inspection took place today (19th January 2017) with Ian Beatty (EHS manager) and Richard Sullivan (Maintenance Manager), which looked at

- storage areas for waste, process returns and finished product
- the surface water (U25) diversion to dirty lagoon configuration
- diesel storage & refuel
- certain process bunds, drainage and containment arrangements

Preceding the inspection, a discussion took place about IC4 (ETP), IC6 & 7 (infrastructure), fugitive emissions and the Site Condition Baseline Report.

Previous Actions – 19th May 2016

Action 1 – Response received on 29th June 2016. NRW is content with this response – action closed.

Action 1 – Has been implemented – action closed.

Action 3 – Response received on 29th June 2016. NRW is content with this response. The cooling water system and water efficiency are ongoing regulatory topics subject to operator periodic review – action closed.

Action 4 – See IC6 & IC7 below – action closed.

Action 5 – See IBC storage below – action closed.

Action 6 – Borax trial – details as per CAR1 May 2016 as and when trial is planned.

Action 7 – Not discussed on 16th Dec 2016 or 19th Jan 2017 – action carried over.

Recommendations – 19th May 2016

Recommendation 1 – Expected within the 2016 annual report, due end of Jan 2017.

Recommendation 2 – See Fugitive Emissions review below.

Recommendation 3 – This relates to IC4 (ETP) – see IC4 below.

Recommendation 4 – See SCR Baseline below.

SCR Baseline Report

From the NRW Jan 2016 letter (commenting on the EXCAL Baseline report) Hexion have engaged another consultant with a view to address the issues in the Jan 2016 letter and propose a site condition baseline going forward and to be compliant with IED.

IB will forward the most recent report for NRW to assess – although Hexion want to reserve the right to take further time to decide their position before formally submitting the SCR Baseline, while NRW assesses this latest report. If Hexion's position has not changed while NRW takes a preliminary look at this latest (Enzygo) report, NRW will issue comments in a separate CAR1 and confirm if this is accepted as the site condition baseline, with or without further recommendations.

Action 1 Hexion 19th Jan 2017: *This report to be submitted to NRW by end of February 2017. Due: By the end of February 2017.*

Fugitive Emissions

Referring to comments made in the May 2016 CAR1, further direction is provided by NRW, with a view for Hexion to provide a 2017 Fugitive Emissions Review by the end of September 2017.

While on the site inspection, to aid in formalising the way forward, a brief discussion took place around the main reactor / production area, around identifying sources of fugitive emissions and justifying predicting losses by either direct measurement ongoing; direct measurement as a one off benchmarking exercise; measuring a representative example of a loss area and using emission factors to estimate all losses; or use literature values on likely losses from certain plant components to estimate total.

Directions on identifying all potential sources, exploring them and discounting or carrying forward for more detailed study and possible quantification, leading to additional actions to reduce or eliminate fugitive emissions, were given in CAR1 May 2016. The operator could use the COMAH SR ` other sources of information to establish a full inventory, including waste materials. How these materials are used and at what conditions (elevated temperature and volatility), how they are transported and stored, should further the assessment to the point where significant potential sources of fugitive emissions are carried forward for more detailed study, possible quantification and remedial actions.

During the discussion examples of possible sources were: reactor bursting discs, reactor product transfer line filters, open dump tank, raw material and product off-loading activities, reactor wash out activities. Some of these, once listed to illustrate consideration has been given, can be discounted from further assessment on a particular basis, e.g. reactor bursting discs – very infrequent, abnormal operation.

Off-loading activities, as described by IB, can either have possible fumes / vapours routed to the emissions scrubber or some off-loading activities do not. Therefore, scrubbed emissions may be listed and discounted, while non captured emissions, could be estimated based on substance properties, handling conditions, volumes and number of transactions.

Other aspects to be considered, should be flanged joints, pump seals, tank storage vents, open tanks, silos, non vapour return tanker operations, tank / reactor / vessel washing, storage losses due to solar radiation etc.

Action 2 Hexion 19th Jan 2017: *Conduct a full fugitive emissions sources and losses review. Any losses identified should have actions proposed to limit or eliminate them, based on their risk and estimations without direct measures must be based on a known and appropriate methodology. Hexion should propose review dates or agree to review every two years. Due: By the end of September 2017.*

IC4 ETP

The latest update on IC4 was the site addressing the remaining three bullet points raised on NRW's response to an earlier Hexion submission. These bullet points were addressed by Hexion in an email dated 24th Oct 2013. NRW are satisfied with these responses. However, as the most recent H1 exercise (URS report for Hexion, 16th May 2013), which was commented on in CAR1 Jul 2013, pointed out, phenol releases modelled @ 10mg/l lead to a Predicted Environmental Concentration against the EQS (7.7ug/l) of 87% ST and 91.4% LT of the EQS – this suggests:

- conduct detailed dispersion modelling to refine the result, as H1 is conservative
- although, with such large PECs, it is still likely that phenol emissions will still be contributing significantly as a % of the EQS
- improve operations to reduce phenol in the influent and / or improve treatment to reduce phenol in the effluent
- this requires an assessment of the biological load required for the bacteria population in the ETP and the treatment efficiency

As part of the 2017 / 18 regulatory work plan, an assessment of the ETP, its efficiency, emissions and operational control, will be undertaken in a phased manner, based on a systemised framework defining the scope, methodology and evidence required. To that end IC4 remains open, but it is now very important that real progress is made to close this out. The objective is to identify if any improvements can be made and to propose an implementation timetable to be agreed by NRW – this stage has not been reached and the H1 study suggests more work in modelling and reducing phenol emission concentration is warranted. NRW will default to emission concentration, not annual mass released, as the parameter that could have adverse impact and therefore should be the focus.

The July 2016 BRef on CWWT in the Chemical Industry is also a driver for the above ETP BAT assessment. AK has sought some clarification internally on BAT phenol limits – in the absence of limits, the default position is to assess against the EQS as the H1 exercise above did or more detailed modelling will do.

IC4 extended until 31st Dec 2017.

IC6 & IC7

These two improvement items concerned the state of the sub surface infrastructure and the diesel storage and off load point – both of these relate to an aspect of fugitive emission control. These two ICs were signed off and this assessment is to confirm implementation of any improvements on an ongoing basis.

This work was done by examining drawings and CCTV surveys, maintenance schedules and repair history,

with Richard Sullivan and then a brief inspection, which covered U25 pit, bunds, containment and IBC storage.

Drawings referred to were: Storm Water Drainage Layout, A1C31417, Nov '07 and Process Effluent, A1C30726, Oct '01, revised Nov '07.

The maintenance schedule included the use of drop tests for integrity of sumps, inspection and cleaning of pits, sumps and drains.

Action 3 Hexion 19th Jan 2017: *U39 should be on the SAP maintenance asset list as per U25.* **Due: 31st Mar 2017.**

RS has recorded additional comments on certain assets, for example the waste compound sump failed drop test and resultant drain and reseal.

Regular CCTV of the drainage system has taken place, by virtue of initial surveys, Hexion mapping and costing out repair locations, implementing the work and resurvey to validate repairs. Evidence in this regard was comprised:

- CD of post patch validation survey
- Summary of repairs and locations

This work is ongoing, but these initial surveys, repairs and follow up surveys have brought the overall condition of the sub surface infrastructure up to decent standard and NRW is satisfied, that with continued surveillance, the drainage system should keep its integrity so as to prevent fugitive emissions to soil / GW through poor joints, cracks, open ends, permeable sumps etc.

This work all came out of IC6 and provides a good basis for keeping lifetime records of site condition and no deterioration test.

In relation to IC7, the most recent comments explored the potential issue of the diesel dispense pump itself as the root cause of loss. The small bund around the fuel dispense pump has been broken into forming a gap that allows rainfall / fuel residue water overtopping into the surface water system which drains into the clean lagoon – this preferential pathway was created to stop overtopping onto unsurfaced ground. The SW bypass from clean lagoon to dirty lagoon was inspected, where the valves are clearly labelled and control of which is exercised from the DCS in the Control Room. This presumably would be the action if a large spill occurred – either hold in U25 / U39 (shut off pumps), or divert to dirty lagoon (post U25 / U39). With the former situation, the SW pits and drainage channels could be pumped out. The latter situation relies on the ETP to treat oil, fuel or other contaminants. As pointed out in a previous CAR1, Hexion should not rely on the ETP as containment, unless in an emergency.

Recommendation 1 Hexion 19th Jan 2017: *Hexion should consider the following as an example of improvements that could be made: sealing the small bund around the dispense pump, creating a roll over bund alongside the SW drain channel and erecting a roof structure covering the fuel dispense bund. This means that leaks from the fuel tap and pump arrangement will be caught in the bund, no rainfall to flood bund and any drips or small spills from refuelling will be caught and held back from the SW system by the roll over bund, which allows vehicles to park within the bunded fuel area. It is up to the operator how they achieve the goal of protecting ground and GW, while avoiding using the tertiary containment and / or surface water system as the primary mechanism for collecting spills.*

The diesel tanks themselves were bunded, with the fuel delivery point just within the bund wall – ideally this should have been positioned further into the bund away from the bund wall to catch any spurts of diesel. It is assumed that these tanks and the bund are on an appropriate maintenance intervention and that the bund is 110% of the largest tank or 25% of the total combined tank volume, whichever is larger.

Action 4 Hexion 19th Jan 2017: *A spill kit should be proximate to the fuel dispense area. Due: Immediately.*

General Containment Provisions & IBC Storage

Certain areas were inspected to confirm pollution prevention arrangements as far as tanks, IBC storage and production areas were concerned. The main production area, Area 80 product storage, waste storage and flammable storage areas were inspected. Documentary evidence referred to in this part of the assessment was Hexion Area 80 Storage risk assessment and an ABB vessel examination report.

These examples of good practice leading to environmental protection were confirmed:

- the waste storage and flammables areas drain to separate sumps each with a shut off valve in closed position – the valves can be opened into the SW line and into the clean (or diverted to dirty) lagoon
- flammable area is separate to the general waste area
- IBCs had clear labelling identifying the hazard category and whether waste, product or raw material rework
- No overloading or stacking of containers was observed
- the R10 rework storage area demonstrated clear labelling and drains this time, via a sump with shut off, to the dirty lagoon via the process effluent drains
- the whole production area (marked as hatched red on drainage drawings), not only has tanks and vessels within bunds and some tanks within secondary skins, but the access roads east and west are sealed with roll over bunds in good condition
- within this tertiary contained production area all drains to process effluent
- recent repairs to the containment kerbing of Area 80 product storage area
- spill kits proximate to storage area (except diesel see Action 4 above)

The risk assessment for storage cites control measures such as: experienced trained staff, new IBCs with sealed taps, reduced speed limits, spill kits, monthly checks. In addition all storage appeared to be on impermeable surfaces with tertiary containment drainage.

The ABB vessel examination report was based on a Jul 2016 inspection, following up from an Aug 2015 inspection for bunds. The report revealed:

- bunds generally in good repair and working
- minor cracks highlighted for repair
- glycol bund has slits built into it allowing drainage to unsurfaced ground
- pumps working
- pipe penetrations secure
- potential issue with grouting in flammables storage bund joins – need water stop sealed joints
- weed and moss growth to be removed
- some bunds compromised by in situ water volume
- no deterioration in previously seen bund wall crack and previous bund floor repair
- damaged kerbs noted in 2015, still not repaired

Action 5 Hexion 19th Jan 2017: *Glycol secondary containment to be designed and implemented so spills are caught and do not impact ground, GW or the surface water system. Good practice is to use bunds of recognised design, compatibility and capacity standards, but the operator can propose alternatives if protection of ground, GW and SW is achieved, without relying on tertiary containment in the absence of secondary containment. Due: By 31st December 2017.*

All in all, the site from a containment point of view and condition of the sub surface drainage system, was in good order and now just needs to be maintained.

Please note the new actions and outstanding action and due dates:

CAR1 May 2016 – Action 7 still open; Action 6 as and when Borax trial is planned

CAR1 Jan 2017 – Actions 1 – 5 – various due dates

ICs – Only IC4 remains open

END



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EPR Compliance Assessment Report

**Report ID:
CAR_NRW0027036**

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	19/01/2017

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 reports should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within twenty 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.

THE HISTORY OF THE

REIGN OF

CHARLES THE FIRST

BY

JOHN BURNET

OF

THE UNIVERSITY OF OXFORD

IN TWO VOLUMES

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