

## Compliance Assessment Report

Report ID:  
CAR\_NRW0032252

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

|                              |                                          |             |            |     |       |
|------------------------------|------------------------------------------|-------------|------------|-----|-------|
| Site                         | Newport Chemical Complex<br>EPR/BR9715IB | Permit Ref  | BR9715IB   |     |       |
| Operator/Permit holder       | Solutia UK Ltd                           |             |            |     |       |
| Regime                       | Installations                            |             |            |     |       |
| Date of assessment           | 08/09/2017                               | Time in     | 09:00      | Out | 17:00 |
| Assessment type              | Report/Data Review                       |             |            |     |       |
| Parts of the permit assessed | Routine data, ICs, dismantling, NOx      |             |            |     |       |
| Lead officer's name          | Kemp, Andi                               |             |            |     |       |
| Accompanied by               |                                          |             |            |     |       |
| Recipient's name/position    | Stephen Thomas/ Environmental Specialist | Date issued | 06/10/2017 |     |       |

### 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 |
|------------------------------------------|--------------|-----------------------|
|------------------------------------------|--------------|-----------------------|

**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<br>(see section 5 for scoring scheme) | 0 |
|-----------------------------|---|--------------------------------------------------------------|---|

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

### **Purpose OF Compliance Assessment**

This compliance assessment report (CAR1) covers the following activities since the last CAR1 raised in January 2017:

- Inspections: 9<sup>th</sup> March 2017, 30<sup>th</sup> May 2017, 13<sup>th</sup> June 2017, 25<sup>th</sup> July 2017 and 8<sup>th</sup> September 2017 – the inspections / site meetings cover a variety of topics and ad hoc aspects seen on the day, including discussion of the items below.
- Follow up progress on a number of ongoing regulatory areas:
  - Boiler 16 NOx emissions
  - IC33 PCP reduction
  - Santicizer decommissioning and dismantling
  - Storage infrastructure
- Recent notifications:
  - March 2017 – TH3 NOx exceedances at pyrolysis furnaces
  - July 2017 – benzene & biphenyl release from TH3 CO<sub>2</sub> purge vent
- Routine submissions:
  - Apr 2016 – Jun 2017 monitoring data, including annual submissions
  - Accident management plan update
  - Fugitive emissions, including TH3 commissioning data
  - EMS improvement targets
- Response to previous actions Jan 2017 CAR1:
  - Action 1 – TH3 fugitive emissions commissioning data
  - Action 2 – Closure Plan
  - Action 3 – IC33 options for remediation and implementation plan / timetable
  - Action 4 – Boiler 16 NOx plans to return to 150 mg/m<sup>3</sup> ELV
  - Action 5 – Storage infrastructure report
  - Action 6 – Immediate improvements to procedures for container infrastructure
- Summary of recommendations from July 2016 and January 2017 CAR1s.
- Other items:
  - Water pipe flowing in former CWx bund
  - Water / effluent seeping through kerbing on Dequest 2010 plant
  - General routes and configuration of surface water and process effluent flows
  - Issues from OMA
- Permit Variation

## **Previous Actions**

All actions from July 2016 are closed. On the previous CAR1 six actions were issued (16<sup>th</sup> January 2017) – responses are confirmed below, with detailed assessment in the relevant section of this CAR1.

Action 1 – TH3 fugitive emissions data – received on 31<sup>st</sup> March 2017 as part of the overall site annual fugitive emissions report. Action closed. Any relevant commentary will be in the fugitive emissions section of this CAR1.

Action 2 – Closure Plan. Response received on 31<sup>st</sup> March 2017. Assessment following in the section on Santicizer closure. Action closed.

Action 3 – IC33 update and timetable. Response received on 31<sup>st</sup> March 2017. To be assessed under IC33 heading. Action closed, but IC33 deadline to be extended.

Action 4 – Boiler 16 NOx. Response received 31<sup>st</sup> March. Action closed. See NOx section below.

Actions 5 & 6 – Container storage and infrastructure. Action 5 Mobile Liquid Containers Secondary Containment Review, T Woodley (on behalf of Eastman), 5<sup>th</sup> June 2015, received 22<sup>nd</sup> February 2017. Action 5 closed. Action 6 – response to bullet points in CAR1 January 2017. Response received 31<sup>st</sup> March 2017. Action 6 closed. See assessment under Storage Infrastructure below.

All actions from January 2017 CAR1 are closed, but specific topic assessment below may generate new actions.

## **Boiler 16 NOx Update**

AK (NRW) has been discussing this issue internally with colleagues and while it is recognised that Eastman have looked at several options, with not insignificant costs, time and technical resource implications, NRW have come to the conclusion that this situation warrants a warning letter in line with NRW enforcement policy.

The key factors leading to this decision are the rapid removal of the gas turbine (GT); lack of attention to potential emission profile changes; and the duration of the non-compliant situation – since early 2015. During the 25<sup>th</sup> July inspection / meeting, the management of change checklist was looked at and it appears that the effect on emissions was not considered, at least in any detail and relating to the engineering required to fit the GT in the first place.

On the 25<sup>th</sup> July an inspection took place of the boiler house, looking at both boiler 14 (standby boiler) and boiler 16, now the primary boiler in service. It was plain to see the level of engineering work to accommodate the GT unit on boiler 16. This involved completely reconfiguring the burners of boiler 16 to install instead supplementary burners for combustion of the exhaust gases from the GT to raise steam as a WHRB, with the primary burning taking place in the gas turbine to generate electricity. Now the GT has been disengaged from the generator and blanked off from boiler 16, which is now supposed to be performing as simple steam raising / hot water boiler, boiler 16 can only use the two supplementary burners (as opposed to the more typical burner arrangement in boiler 14) for combustion of natural gas and this post GT situation is the cause of the high levels of NOx formation, due to different burn conditions.

On the 25<sup>th</sup> July Eastman declared the following, by way of an updated presentation on the boiler 16 NOx options:

- Put the GT back in place and run the unit just in turbine mode
- Subsequently fit an economising unit to recover lost heat

After evaluating other options, such as low NOx burners, replacing the boiler, NOx abatement, utilise the CWx plant, the preferred option long term is returning to the GT CHP mode. Eastman are now looking at the costs associated with the agreements around operating CHP units (various tariffs, the CCA etc.) and to that end have engaged a consultant to guide them through this and provide indicative costs of running in GT mode without the economiser. If it is then decided by Eastman that the cost is prohibitive, the only option then is to fit new burners and return to pre GT mode. This is not seen as an ideal situation.

NRW required an update on the situation from the response received on 31<sup>st</sup> March 2017 and elaborated upon in July 2017 with regard to the intended course of action and timeline. Whilst it is appreciated that the lead time of large engineering solution implementation is somewhat out of Eastman's control, NRW expects a clear timeline of when boiler 16 will be back to NOx levels below 150 mg/m<sup>3</sup> – or in line with BAT for GT of <75 mg/m<sup>3</sup>.

An update given during the inspection of 8<sup>th</sup> September confirmed Eastmans intention to return boiler 16 to a GT CHP set up (ELV NOx < 75 mg/m<sup>3</sup>). They will do this by temporarily using a gas turbine supplied by the GT manufacturer and maintenance provider, while the current GT is being overhauled by the manufacturer. When the current GT is refitted, then further enhancements, such as the economising unit, will be considered – this will be after the commissioning of the serviced GT. The incentive for this is that Eastman plan to use most of the electricity generated by the GT on site as opposed to exporting to the grid and buying back – this is financially better according to Eastman.

**Action 1 15<sup>th</sup> September 2017:** Eastman to provide NRW R.O. the timeline for the GT CHP proposal which will return NOx emissions back to < 75 mg/m<sup>3</sup>. This next update should include an indicative time line for all critical decisions to be taken in the implementation of the solution and describe delays, barriers, sign offs and approvals and provide the final completion deadline. **Due: 31st October 2017.**

### IC33 Pentachlorophenol Reduction

A response was received on 31<sup>st</sup> March 2017, letter off Stephen Thomas, Eastman Environmental Specialist, dated 27<sup>th</sup> March 2017.

The response confirms (presumably CapEx approval and senior management sign off required) the intention to use a reed bed treatment system. Further investigatory works are required to inform the refined design. These works include exploratory boreholes to define the plume source term and groundwater regime. Data will be gathered about extraction of groundwater and recharge rates, in order that extraction and treatment can actually be viable. Results of this will inform the design parameters of the project.

Once the project has been agreed in principle, the time line is:

1. Further investigatory work – within four months
2. Complete design and installation – a few months (?) thereafter

This suggests early 2018 for actual installation – notwithstanding the project not being agreed.

To keep the momentum up for the outcome of reducing PCP concentrations in ground water and to set a timescale, **IC33 is extended until 31<sup>st</sup> December 2017**. This is when NRW, as per the improvement condition, will expect to receive the written proposals on whether this treatment will work, when to be implemented and when to expect significant reductions in PCP. Any decision not to pursue this or other options, needs to be supported by a cost benefit analysis that demonstrates disproportionate cost verses environmental improvement. However, PCP has already been flagged to the operator as a priority hazardous substance and a target for elimination under the OSPAR convention.

It is also recommended that the operator looks at the external NRW website, in the Apply and Buy permitting section, for guidance on whether an abstraction licence is required for pumping groundwater for treatment. If pumped back into the same area, a consent may not be required – advise the operator checks. If the treated groundwater is to be discharged via the ETP, NRW can agree to use the permit discharge conditions (ELVs and emission point) to cover this activity.

### Santicizer Decommissioning & Dismantling Including Closure Plan

The operator ceased production from the Santicizer plant in December 2016. To support the management of this process in line with relevant regulations (EPR and COMAH), the operator submitted documentation on procedures and project management on 31<sup>st</sup> march 2017. These submissions also form the operators

response to Action 2 16<sup>th</sup> January 2017 – Site Closure Plan.

The Site Closure Plan is required by permit conditions and guidance can be found in the Sector Guidance Notes and for example IChemE decommissioning documents – it should be a live iterative document. Some pointers were given in the relevant section of CAR1 January 2017 – and in italics below is an extract from an email AK sent to ST (30<sup>th</sup> May 2017) giving additional guidance.

*Site Closure Plan & Santicizer Decommissioning – Going forward and referring to the SGN on Specialty Organics, an overview / policy type document should be prepared tying in with other more detailed procedures Eastman follow. In particular the “Closure Plan” should reference procedures to be adopted when the site install or improve new or existing infrastructure and equipment, so that design, installation and equipment selection leads to protection of ground and groundwater, can be easily emptied, washed and dismantled, without causing pollution. The plan should also link to your Site Condition Report, records of known incidents, ongoing ground remediation (e.g. IC33 PCP work) and any improvements made to pollution prevention infrastructure, e.g. the new standard and procedures around IBC storage.*

Essentially, while a site may not be intending to close, decommissioning, dismantling, safe shut down of plant, removal of materials and protection of soil, air, groundwater and surface water etc., should all be built into the design of the process as well as implemented when there are closures and significant site modifications. So that, for example, above ground pipelines and tanks are used in the design, leading to easier decommissioning at closure or site modification.

Inspections of the decommissioning and dismantling processes took place on: 30<sup>th</sup> May 2017 and 25<sup>th</sup> July 2017. Email correspondence has also been exchanged to confirm certain details. Assessment separately under a modification of the COMAH Safety Report has been conducted and NRW concluded that the process would not lead to or exacerbate any new or existing MATTE scenarios. The EPR assessment of the Santicizer decommissioning and demolition has focussed on preventing pollution from the draining and wash out, vehicle oil / fuel spills, contractor performance, accident response.

The COMAH SR assessment looked at the proposals and risk assessments, project plan and overall modification report. The Competent Authority was satisfied that any shared lines between Santicizer and the adjacent Dequest Amino plant were identified and protected; with additional pipe support structure put in as the Santicizer plant was dismantled. Shared process control logic had been separated, so Dequest can be controlled and not interfered with by Santicizer processes. Contractor and Eastman staff have had inductions and additional specific Santicizer demolition inductions. Regular progress meetings have taken place, records such as decontamination certificates and amended P&IDs have all been retained. Certain drainage routes have been isolated. In terms of emergencies the site would invoke its normal spill and accident procedures and even the COMAH Internal Emergency Plan. The Local Authority have been contacted.

Specifically with regard to chemicals out, an email off ST confirmed draining and wash out completed by 27<sup>th</sup> April 2017 – essentially existing stocks of raw materials were run down during the last campaign in December 2016.

AK saw the demolition in progress on 25<sup>th</sup> July 2017 and was talked through this aspect by one of the senior

engineering staff responsible for the project. As far as AK could tell all precautions necessary had been implemented and the site is now at a stage where the Santicizer plant has gone and the Dequest Amino remains unaffected and operating as normal. Associated tanks have also been washed out and cleaned and removed. Bunds, pumps and other ancillary equipment was in the process of removal. Oils have been drained from pumps and any dead legs identified and purged.

Confirmation was obtained during the inspection of 8<sup>th</sup> September 2017, that the Santicizer plant is completely removed and Dequest Amino is functioning as normal. All ancillary equipment such as bunds, pumps and tanks have all been removed to a scrap stockpile. No incidents involving Santicizer have been reported during the decommissioning or dismantling process.

**The permit now needs to be varied – reference should be made to CAR1 July 2016 and September 2016 and May 2017 email correspondence on the areas to be included.**

In terms of a more general Closure Plan, as stated above, an overall policy document should be drawn up that ensures when the plant or an activity within the overall installation closes, temporary cessation of activity and significant alterations to existing plant take place, the following points are addressed, incorporated into designs and link to the relevant site procedures – such as accident / spill response; draining, cleaning, decontamination, demolition:

- Using site modifications and upgrades to reduce the pollution potential of equipment:
  - Replacing underground tanks and sumps
  - Moving to above ground pipelines, with less flanged joints
  - Avoiding lines through bunds or improve engineering
  - Improved emptying performance of tanks and reducing or enabling removal of dead legs
  - Building new infrastructure for storage
  - Not damaging GW monitoring wells or other critical infrastructure
  - Appropriate waste management of fluids, raw materials, waste, possibly contaminated equipment
  - Routes of re-use or recovery of left over raw materials
  - Forecasting effect of closure on ETP, steam demand and boiler operation, water use
  - Repairing concrete surfacing and drainage channels and routes
- Ensure other procedures, like MoC are referencing the Closure Plan and vice versa
- After a project – measure performance
- Update site condition reports, P&IDs, drainage plans
- Periodically review plan

Some of these points were included in the operators response dated 31<sup>st</sup> March 2017, for close out of Action 2. This area will be revisited in the future to ensure policies and procedures have been designed to accommodate this aspect.

## Storage Infrastructure

Actions 5 & 6 from January 2017 are closed. The ongoing improvements will be subject to periodic inspection under EPR.

To guide the operator in identifying, prioritising and implementing infrastructure and storage procedures, the RO emailed advice to ST on 14<sup>th</sup> and 16<sup>th</sup> March 2017 – these communications referenced the BAT reference document on storage; bund construction and containment volume; risk based approach to containment volume for many smaller containers verses bulk tank storage; revising storage options.

The storage containers review (T Woodley report, Eastman, June 2015) documented the locations and condition of all storage areas and reasons for storage, but focused on hazardous substances that are toxic and harmful to the environment. This report presents a good basis for prioritising options to improve the current locations and revise procedures.

The operator submitted a response to Actions 5 & 6 on 31<sup>st</sup> March 2017, dated 27<sup>th</sup> March 2017. Action 5 was submission of the T Woodley report.

Action 6 contained a number of bullet points for immediate attention, with ongoing infrastructure improvements to be constructed. IBCs are to be stored so that valves do not point beyond containment infrastructure and screw caps should be fitted. All IBCs to be labelled. The storage of various raw materials, rework, waste, off specification materials, has been reorganised alongside the newly constructed infrastructure. Spill kits are to be proximate and the inventory on the fire tender to be checked and deemed adequate – an email off ST on 1<sup>st</sup> June 2017 contained an inventory of the pollution prevention / spill response kit kept in the on site fire station.

**Recommendation 1 15<sup>th</sup> September 2017:** The inventory appears to include various types and amount of equipment, such as drain seals, paste and cushions. Additionally, the site could look at larger booms; water inflated booms; pop up pools; and over drums – this would enhance the spill response capability.

The locations of what is stored where have been put on a site storage map – this should assist operators in using correct storage locations, minimising spill potential and aid in emergency response.

The IBCs, although washed out on site, are designated hazardous waste along with part empty containers. The waste carrier credentials of the relevant transport companies are overseen by the HSE department and records kept in accordance with procedure: DP7803 (waste handling and dispatch) and WP115 (Waste Management) – this will be checked as a future regulatory topic.

These points have been confirmed on site during the inspections, where the engineering of the new storage area (bunds, seals, sills, kerbs and sumps), capacity and signage were all confirmed to be adequate and an



improvement on the previous situation. ST also submitted some further photographs and spill kit information in an email 1<sup>st</sup> June 2017, from the 30<sup>th</sup> May inspection. The photographs show the newly constructed toxics area, with sloping access and painted kerbs; the lorry park area repairs; and the repairs to kerbs in the central area. These are welcome and should form part of ongoing surveillance of ageing infrastructure. In addition to this, once the toxics / aquatic harmful storage area was finished, an internal briefing note was issued that illustrates the shut off valves if there is a spill and the signage and capacity to ensure the area is used appropriately.

While there are still areas and procedures to be revised / improved, the inspection on 8<sup>th</sup> September 2017, confirmed in general the improvements made and to the storage procedures – screw caps and labels were on and the taps of IBCs were facing away from unsurfaced (non tertiary containment areas). This is an ongoing piece of work and staff behaviour (ad hoc and random storage locations of containers) and handling of materials will be inspected frequently within the overall work program.

### **Recent Notifications**

Two recent notifications have been received:

1. NO<sub>x</sub> emissions from TH3 – 9<sup>th</sup> March 2017
2. Benzene / biphenyl release from TH3 – 10<sup>th</sup> July 2017

### *TH3 NO<sub>x</sub>*

The TH3 NO<sub>x</sub> issues have brought into focus the ongoing issues of the commissioning of this plant and problems with furnace performance, burner pots and heat exchanger coking and potential issues with ELVs and which plant is covered and included in emissions impact assessment and not. The notification shows three of the four TH3 furnaces breaching their NO<sub>x</sub> limit of 135 mg/m<sup>3</sup>. The furnace points and results are:

A26 Pyrolysis furnace – 254.1 mg/m<sup>3</sup>

A27 Pyrolysis furnace – Not in operation, therefore no result

A28 Biphenyl column furnace / reboiler – 147.8 mg/m<sup>3</sup>

A29 Santowax column furnace / reboiler – 162.6 mg/m<sup>3</sup>

These breaches occurred during the first round of 6 monthly monitoring post the protracted commissioning phase of TH3. The Part B of the scheduled notification includes information (if not the data itself) showing that retuning the Santowax and Biphenyl reboilers has led to optimising combustion conditions and has brought the units into compliance. What is unknown to the regulator at this point, is how long the units have been exceeding the limits, when the retests were done, what the retest figures were and confirmation that performance will not drift significantly (i.e. above the ELV) between the 6 monthly monitoring rounds.

**Action 2 15<sup>th</sup> September 2017:** Eastman to provide the retest figures (A28 & A29) and engineering confirmation that the performance is not likely to drift. If drift is suspected, additional monitoring (above the 6 monthly frequency) must be proposed and the parameters causing the varying performance are to be identified and investigated. **Due: 31st October 2017.**

The TH3 pyrolysis furnaces A26 and A27 (when operating) are indicating that the 135 mg/m<sup>3</sup> ELV is still not being achieved. This also raises questions about the basis for not monitoring TH2 originally (AK is trying to retrieve the evidence from the original applications and TH3 variation), for monitoring TH3, but not TH2 additionally and for setting the 135 mg/m<sup>3</sup> NO<sub>x</sub> ELV. Refer to emails sent to ST by AK (11<sup>th</sup> September 2017), which request information about TH2 and TH3 off the operator; discuss what further impact assessment should be done, aggregating the two units (if TH2 is likely to continue to operate for any length of time); and what parameters would be looked at. These emails include data on NO<sub>x</sub> limits for furnaces used in the chemical industry. The 135 mg/m<sup>3</sup> NO<sub>x</sub> ELV for these size units is within the ranges given for process heaters used in a variety of organic chemical manufacturing processes. In the light of where LCP and MCPD (albeit these TH3 furnaces are exempt from “combustion” as defined in these two directives), NO<sub>x</sub> limits are being driven to < 100 mg/m<sup>3</sup>.

***Potential non-compliances:** These exceedances have been flagged as exceedances of ELVs, however, while this assessment and investigation is ongoing into the emissions impact assessment of TH2 and TH3, NRW will hold these in abeyance until more information on the reasons for exceedances and the basis of the ELVs is revealed.*

It is proposed that using information from TH2 emissions and performance; TH3 design parameters and performance; ambient background NO<sub>x</sub> levels (to include the contribution from all other on site combustion / heating activities); process parameters such as stack heights, adjacent buildings, weather data, gas volume, velocity and temperature, combustion conditions and appropriate reference conditions; that a NO<sub>x</sub> impact assessment is performed on all furnaces and boilers. This should be used as a sensitivity analysis when looking at what contributions to NO<sub>x</sub> AQSs the site is making overall – focus should then be made to improve the most significant impacts.

**Action 3 15<sup>th</sup> September 2017:** Eastman to work with the regulator to conduct a NO<sub>x</sub> emissions impact assessment using the approach and data mentioned above. It is recommended that using the EA H1 tool initially for each emission point would be sensible start. Detailed modelling using ADMS, could be looked at – dependant on results and uncertainty from the H1 exercise. **Due: 31st December 2017.**

### *TH3 Biphenyl / Benzene Release*

This event is minor in impact and was a result of a purge cycle causing a residual pressure in a process line to vent a small amount of benzene / biphenyl residual liquid / vapour from the CO<sub>2</sub> relief valve vent. A temporary procedure was put in place while an investigation was conducted.

The investigation has led to a number of (completed) actions to reduce the chance of this happening again. Although this was a minor event, of short duration, with release either entering the TH3 containment interceptor or volatilised to atmosphere, the regulator is uncertain about reoccurrences having the potential to be more serious and harm operatives. The Part B notification response mentions an interlock to prevent process lines and CO<sub>2</sub> purge systems being energised at the same time, but the response goes on to state that this interlock would not have prevented this event. There will be no non-compliance score for this event.

**Action 4 15<sup>th</sup> September 2017:** The regulator wants to understand this event in detail and to that end will make another inspection to look at this area and TH3 pyrolysis furnaces. Eastman should make available the relevant staff who understand this purge cycle and associated procedures, show how the event shows up on in the control room and describe what actions have been taken to prevent reoccurrence. **Due: To be arranged with R.O. by 31<sup>st</sup> October 2017.**

### **Routine Submissions**

#### *Monitoring Returns*

The period assessed here covers: April 2016 – June 2017 and includes releases to air and water.

Results for W1 and W2 have been submitted on the correct basis for all periods as required by the permit.

A simple inspection of the results shows compliance with all limits. Except the following result:

1. W2 Hg – Jan – Mar 2017 – average result 2 ug/l against a limit of 1.5 ug/l

**Action 5 15<sup>th</sup> September 2017:** Eastman to provide a reason why this was not reported at the time as an exceedance with the permit. **Due: 31<sup>st</sup> October 2017.**

***Potential non-compliance score pending.***

It is worth noting that the results for PCP (maximum values rather than average) are close to the limit, which is not the case for most of the other parameters. This suggests that while the average is well below the limit, there are maximum values close to the limit, which must be a result of a varying amount being discharged – PCP source term is being investigated under IC33. COD values are also high – another parameter that will need to be investigated when looking at compliance with BAT AELs in the CWWT BRef.

In terms of the air emissions, some of which are monitored quarterly, 6 monthly and annually, they are all reported annually. On this round there are no results for the TH3 furnaces – see comments above about TH3 furnace and process heater issues with NO<sub>x</sub>. All results are compliant and future work will be done on measurement methods, mass balance calculations etc. for mass release parameters.

While chloromethane from A6 (Dequest Amino scrub water tank) has no limits prescribed in the permit, monitoring of the four main grades annually is required. The results for 2016 show some interesting variation from (presumably in mg/m<sup>3</sup>-) 32.8 – 63,774.

**Action 6 15<sup>th</sup> September 2017:** The operator is to provide further information on these and the reason behind such variation and the values of the highest two results. **Due: 31st October 2017.**

Also reported annually are: waste disposal and recovery metrics; water use; energy use; other process parameters; total mass releases of NO<sub>x</sub>, SO<sub>x</sub>, chloromethane, benzene and phenol.

Mass releases are compliant. The process parameters do not reveal any obvious positive or negative trends, other than the COD remains relatively constant at around 9.5 kg/t. Electricity usage, expressed as CO<sub>2</sub> per tonne of product output, seems also to be relatively constant – maybe the return to CHP set up of GT and boiler 16 will improve this metric, which will be an environmental and economic improvement. Water use has decreased markedly, especially in 2015 and 2016.

**Action 7 15<sup>th</sup> September 2017:** Eastman to provide some narrative to explain this decreasing figure and especially in terms of year on year trends of water expressed in m<sup>3</sup>/ t. **Due: 30th September 2017.**

Waste per tonne of product is also variable and is likely to be influenced by any projects occurring during any one year that are one off events – demolition; desludging etc. Hazardous waste is primarily made up of the Santotar waste from Therminols production.

**Recommendation 2 15<sup>th</sup> September 2017:** Eastman and NRW to explore this waste stream for possible by product or end of waste status and from there routes where this material may be usefully used and possibly taken out of the waste market.

Other routine submissions include EMS improvement targets, accident management plan reviews and fugitive emission summary.

The accident management plan is partly covered by the site having both internal and external emergency plans as required under the COMAH regulations. However, sites also regulated under EPR, must include sub-COMAH events and spills. Essentially an accident management plan can be a full source – pathway – receptor risk assessment, with control measures and residual risk identified and finally actual actions to be carried out in the event of an accident – including clean up, recovery and restoration activities. This aspect will be looked at periodically in the future.

In terms of the environmental management system, the site has retained its EMAS status, which is excellent and demonstrates Eastmans continued attention and pursuit of good environmental performance. In terms of site targets and objectives a submission was made on 27th March 2017. The submission is welcome but NRW directs the operator to comments made in the July 2016 CAR1 form with regard to a rolling table and record of planned, completed and delayed or abandoned targets. Reasons why certain objectives have been selected should also be given and should tie in with the significant environmental impacts identified in the site EMS.

In terms of fugitive emissions, again the operator is directed to comments made in July 2016 about identifying and quantifying or estimating all sources of fugitive emissions. A fugitive emission monitoring exercise also took place as part of the ongoing TH3 commissioning programme. The methodology (components identified, number of points, distance from the particular area on a component and use of a PID) has been described in previous submissions and improvement condition responses – NRW is satisfied with the methodology. The methodology also uses <10 ppm benzene detected as an acceptable (component specific) level, below which, the release is considered typical and accepted; above which investigations should take place. To support reducing fugitive emissions, the plant use design codes and standards, reduce flanged joints and double mechanically sealed pumps complemented by a planned preventative maintenance programme. Some emissions of benzene are expected when processing a volatile liquid at high temperature and pressures.

### **Other Items From Inspections**

Earlier in the year process effluent was seen to be seeping through kerbing on the Dequest 2010 plant. On the 8<sup>th</sup> September 2017, the inspection revealed that this process bund drain leg was being replaced – a lot of the site drainage system is old. This improvement is welcome.

On a previous inspection a pipe was seen to be feeding water into the redundant former CWx project bund. In an email on 11<sup>th</sup> August 2017 ST confirmed that this was just water from a pipe break that was all captured in the bund and then pumped to the ETP.

Part of the purpose of the inspection on 8<sup>th</sup> September 2017 was to inspect the process and surface water drainage system and configuration with the ETP. Process sumps and surface water sumps and pump houses were also looked at. A meeting with key utility and effluent personnel led to the conclusion that it would be a positive step to investigate this infrastructure and review drawings.

In terms of the drainage schematics and discussion, this is what we agreed (time line to be agreed). Use existing drawings to produce up to date accurate simplified schematic of the various drainage systems. So, that includes the road drain surface water system, along with location of sumps, pits, volumes (containment capacity) and any isolation valves and the point of entry into the south lagoon of the main ETP, showing the bypass route, where water can be directed to the W1 outfall line – need to know the exact location and valve configuration for this. The same for the process effluent (drains in bunds and direct process effluent lines), along with ERAP tanks, sumps, volumes and isolation valves – again need the route into the ETP – confirm that there is no bypass direct to W1 outfall. This should include the cooling water system.

This will enable a phased assessment of the condition of the drainage systems, remove any ambiguity with regard to potential by pass routes and lead to a better understanding of possible containment options, using sumps and isolation valves, in a spill situation. Priority areas of poor condition are also likely to be identified during this phased approach.

Allied to the overall drainage layout and W1 and W2 configuration at the site ETP lagoons and additionally with the cease discharge period, are some key findings from the OMA conducted in two phases in 2016:

- Already mentioned is confirming all emission points to air and their monitoring / ELV basis - to be addressed in the permit variation.
- Configuration and limits on W1 and W2 and cease discharge period – to be addressed in the permit variation.
- Composite sampler, the sample probe position, sample withdrawal basis, sample preservation – again can be addressed with an Improvement Condition in a permit variation.

## **Permit Variation**

- Consolidate permit
- Only when vertical BRef triggers review, will we add BAT from other existing BRefs, e.g waste water – unless the variation seeks to alter waste water aspects, e.g. ELVs etc., when we may look to CWWT BRef 2016
- All emission points included and with or without ELVs, e.g. A30 TH3
- Reassess NOx impacts from Therminol and plant wide
- Remove all old ICs, but potentially add any new ICs relating to work we've been involved in recently – updating: PCP situation, IBC storage, NOx etc.
- Amend any ELVs related to IC output, e.g. phenol 10 mg/l
- Certainly NOx ELV to be revisited (75 mg/m3)
- Cease discharge period and SW segregation
- Santicizer removal and effect on effluent ELVs
- ETP issues – BAT
- ELVs re W1 and W2 what basis
- Furnaces and associated ELVs
- Amendments to Operating Techniques

## **Summary of Previous Recommendations**

There have been several recommendations made in previous CAR1 forms, one is listed below and ties in with permit variation discussions:

### *July 2016 CAR1*

1. Formalise the cease discharge and non permitted discharge procedures.

## **Summary**

There are no non-compliances in this CAR1 form, although there are potential non-compliances pending – see TH furnace section.

Please consider the recommendations made in this CAR1 form and attend to the 7 actions listed.

**END**

## EPR Compliance Assessment Report

**Report ID:  
CAR\_NRW0032252**

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

|                        |                                          |            |            |
|------------------------|------------------------------------------|------------|------------|
| Site                   | Newport Chemical Complex<br>EPR/BR97151B | Permit Ref | BR97151B   |
| Operator/Permit holder | Solutia UK Ltd                           | Date       | 08/09/2017 |

### 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 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](mailto: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.