

Notice of variation with introductory note

Environmental Permitting (England & Wales) Regulations 2010

Solutia UK Limited

Newport Chemical Complex
Corporation Road
Newport
South Wales
NP19 4XF

Variation application number
EPR/BR9715IB/V006

Permit number
EPR/BR9715IB

Newport Chemical Complex

Permit number EPR/BR9715IB

Introductory note

This introductory note does not form a part of the notice

The following notice gives notice of the variation of an environmental permit.

This variation is comprised of two main components. The first is the expansion of the site to allow for the addition of a Therminol 3 plant (TH3). This plant essentially mirrors the existing Therminol 2 plant but on an increased scale. This has required an increase in the site boundary and the inclusion of new point source emissions to air in the permit (A26-30). The activities table has been updated to reflect the addition of TH3 plant and a pre operational condition has been added to address the commissioning phase. Emission Point A3 has been removed as this has been removed from the site.

The second component of this variation is the incorporation of a directly associated activity. The Carbon Water Exchange project, aims to reduce carbon dioxide (CO₂), oxides of nitrogen (NO_x) and carbon monoxide (CO) emissions from Boiler16 as part of an ongoing demonstration of novel technology. The first phase of the project was carried out as a trial. However, following the completion of phase one and discussion with Natural Resources Wales, Solutia UK Limited have applied to incorporate the second phase into the permitted activities. This allows for emission limits and monitoring requirements to be set in the permit, along with specific operating techniques and reporting requirements. In addition, two new emission points to air (A31 & A32) have been added to the permit.

Also a limit has been added against Phenol and DTA monitoring has been removed completely. This follows improvements on site which have been demonstrated through monitoring results, allowing us to tighten emission limits and remove unnecessary monitoring. A number of improvement conditions have also been added to Table 1.4.1 Improvement Programme requiring the operator to submit a number of reports, the first following the completion of stage two of the Carbon Water Exchange System trial, a second detailing when the site will move to a Phenol limit of 10mg/l as an weekly composite sample, a third following a review and update of their response to improvement condition IC23 and a fourth report which will contain review of the costs and benefits of further measures to reduce emissions to water of Pentachlorophenol.

The schedules specify the changes made to the original permit.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

Status log of the permit		
Description	Date	Comments
Application BR9715	Received 31/03/03	
Response to request for information	Request dated 01/08/03	Response dated 12/09/03
Request to extend determination	Request dated 25/07/03	Request accepted 28/07/03
Request to extend determination	Request dated 25/11/03	Request accepted 05/12/03
Permit determined	28/01/04	
Application YP3435XB	Duly made 18/01/08	
Variation determined	17/04/08	
Variation notice YP3436XB Issued	17/04/08	
Application JP3132XJ	Duly Made 31/03/08	
Request for extension of determination	18/08/08	Response dated 19/08/08
Variation determination	24/12/08	
Variation notice JP3132XJ issued	24/12/08	
Application EPR/BR9715IB/V004 (Pas reference No.BP3734HN)	23/12/10	Duly made 10/01/11
Variation EPR/BR9715IB/V004 issued	31/03/11	
Agency variation determined EPR/BR9715IB/V005	25/03/12	Environment Agency variation to implement the changes introduced by IED
Variation Application EPR/BR9715IB/V006	Duly Made 20/11/13	Application to add TH3 plant and Carbon Water Exchange plant
Additional information requested	12/02/14	
Additional information received	14/02/14, 19/02/14, 03/03/14, 07/03/14, 14/03/14, 21/03/14	Responses to questions 1-4 of the schedule 5 notice
Additional information requested	02/04/14	
Additional information received	04/04/14	Schedule 5 notice answered in full
Variation determined EPR/BR9715IB/V006	21/08/14	Variation issued to Solutia UK Limited

End of introductory note

Notice of variation

Environmental Permitting (England and Wales) Regulations 2010

The Natural Resources Body for Wales ("Natural Resources Wales") in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies

Permit number
EPR/BR9715IB

issued to:
Solutia UK Limited ("the operator")

whose registered office is
Corporation Road
Newport
South Wales
NP19 4XF

company registration number **03295486**

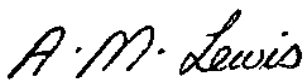
to operate a regulated facility at
Corporation Road
Newport
South Wales
NP19 4XF

to the extent set out in the schedules.

The notice shall take effect from 21/08/2014

Name

Date

	21/08/2014
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Anna Lewis, Principal Permitting Officer, NRW Permitting Service
Authorised on behalf of Natural Resources Wales

Schedule 1 – conditions to be deleted

None

Schedule 2 – conditions to be amended

The following conditions are amended as a result of the application made by the operator

Condition 1.6.1 shall be amended to :

1.6.1 The operations specified Table S1.6.1 shall not commence until the measures specified in that table have been completed.

Table 1.1.1 shall be amended to:

Table 1.1.1 Activities

Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
Section 4.1A(1)(a)(i): Organic Chemicals	Production of Hydrocarbons in 2 production units: Therminol 2 plant Therminol 3 plant	Receipt of raw materials to despatch of finished product.
Section 4.1A(1)(a)(ii): Organic Chemicals	Production of organic compounds containing oxygen	Receipt of raw materials to despatch of finished product.
Section 4.1A(1)(a)(iv): Organic Chemicals	Production of organic compounds containing halogens	Receipt of raw materials to despatch of finished product.
Section 4.1A(1)(a)(V): Organic Chemicals	Production of organic compounds containing phosphorus	Receipt of raw materials to despatch of finished product.
Section 4.2 A(1) (a) (i): Inorganic Chemicals	Production of Hydrochloric Acid	Receipt of raw materials to despatch of finished product.
Section 1.1A(1)(a): Combustion Activities	Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts.	Site production of steam and electricity
Section 5.4A(1)(a)(i) Disposal of non-hazardous waste	Disposal of non-hazardous waste in a facility with a capacity exceeding 50 tonnes per day by biological treatment.	Operation of Biological Effluent Treatment plant for Santicizer & S2075 processes.
Section 5.4A(1)(a)(ii) Disposal of non-hazardous waste	Disposal of non-hazardous waste in a facility with a capacity exceeding 50 tonnes per day by physico-chemical treatment.	Operation of site effluent neutralisation plant
Directly Associated Activities		
Operation of the Carbon Water Exchange System	Operation of the Carbon Water Exchange System where by emissions from boiler 16 will be split between emission point A4 as normal and additional point A31. Emissions to air from A31 will be processed prior to release within the Carbon Water Exchange System with an aim to further reduce emissions to air.	This activity is limited to a 6 month operation period from the date the operator notifies us activities shall begin and ending 6 months from the commencement date, unless otherwise agreed in writing with Natural Resources Wales.

Table 1.4.1 shall be amended by the addition of IC30, IC31, IC32 & IC33:

Table 1.4.1 Improvement Programme		
Reference	Requirement	Date
IC30	The Operator shall provide a written report to Natural Resources Wales upon completion of stage two of the Carbon Water Exchange System trial. The report shall describe the outcome of this phase of the trial and include an evaluation of predicted versus actual emissions to air.	3 months post completion of phase 2 of the trial
IC31	The Operator shall notify Natural Resources Wales in writing upon completion of a review of the biological treatment plant phenol removal performance, details of any improvements required and the date from which the phenol emission limit value for release point W1 shall reduce to 10 mg/l as an weekly composite sample.	30 April 2015
IC32	The operator shall review and update their response to improvement condition IC23 which was originally included as part of variation JP3132XJ issued on 24/12/2008.	31 Dec 2015
IC33	The Operator shall submit to Natural Resources Wales in writing a report upon completion of a review of the costs and benefits of further measures to reduce emissions to water of Pentachlorophenol, including details of any beneficial improvements identified and the date by which these improvements will be implemented.	30 June 2015

Table 2.1.1 shall be amended to:

Table 2.1.1 Operating techniques		
Description	Parts	Date received
Application	The response to questions 2.1 and 2.2 given in Section 6, pages 1-32; section 7 white pages 1-76; section 7 green pages 1-69; section 8 pages 1, 10-15 and 26 of the application	31 March 2003
Schedule 4 Notice	Response to questions 1, 8 and 10	12 October 2003
Application for variation YP3435XB	To include the operational details of the proposed Biological Treatment Plant, as detailed in the variation application.	18 January 2008
Application EPR/BR9715IB/V004	Include the operational details of the proposed CHP and ancillary equipment, as detailed in the application for variation.	10 January 2011
Carbon Water Exchange Project Coral (Polyp) Technical Brief of Stage Progression	All	06 February 2014
Carbon Water Exchange Project Coral (Polyp) Technical Brief of Stage Progression October 2013	All	March 2014
2013 10 Solutia TH3 Report 'Solutia Therminol 3 (TH3) report in support of application to vary environmental permit BR9715IB'	All	28 October 2013

Table 2.2.1 shall be amended to:

Table 2.2.1 Emission points to air		
Emission point reference or description	Source	Location of emission point
A1	CHP bypass Stack	Boiler house and CHP as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A2	Boiler 14 stack	Boiler house as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A4	CHP boiler 16 stack	Boiler house & CHP as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A5	DQ1T1701 Scrub Water Tank	Dequest 2010 plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A6	DQXT233 Scrub Water Tank	Dequest Amino plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A7	DQ1A150 PCl_3 storage	Building 154 as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A8	DQXA258 day tank T257	Dequest Amino plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A9	DQXA500 Recycle tank	Dequest Amino plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A10	DQXA268 day tank T267	Dequest Amino plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A11	SZXV307 Step 2/3 reactor	Santicizer plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A12	SZXJ416 Stripper Ejector	Santicizer plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A13	SZXT151 POCl_3 Storage	Building 154 as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A14	3GXJ16 Reactor	S2075 plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A15	PPXT01 Benzene tank	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A16	PPXT101 Benzene tank	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A17	PPXT206 Benzene column reflux drum	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A18	PPXT112 Biphenyl tank	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A19	PPXB121 Biphenyl flaker	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006

Table 2.2.1 Emission points to air

Emission point reference or description	Source	Location of emission point
A20	PPXT205 Biphenyl tank	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A21	PPXT208 Biphenyl tank	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A22	PPXV121 Autoclave	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A23	PPPYRO furnace	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A24	PPXZ104 furnace	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A25	PPXZ149 furnace	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A26	18ZZ0111 furnace	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A27	18ZZ1111 furnace	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A28	18ZZ0104 furnace	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A29	17ZZ0149 furnace	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A30	18TA0011 Benzene tank	Therminol plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A31	Temporary Carbon Water Exchange Plant Scrubber Stack	Carbon Water Exchange plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006
A32	Temporary Neutraliser Stack	Carbon Water Exchange plant as shown on the amended site plan in Schedule 4 of variation notice EPR/BR9715IB/V006

Table 2.2.2 shall be amended to:

Table 2.2.2 Emission limits to air and monitoring				
Emission point reference	Parameter	Limit (including unit of measurement)	Monitoring frequency	Monitoring method ⁴
A2 Boiler 14 stack ^{Note 1, Note 2}	Oxides of Nitrogen expressed as NO ₂	150 mg/m ³	Annual	Spot sample
A4 CHP boiler 16 stack	Oxides of Nitrogen expressed as NO ₂	75 mg/m ³	6 monthly extractive spot sample ^{Note 6}	BS EN 14792 ^{Note 5}
A4 CHP boiler 16 stack	Carbon Monoxide	100 mg/m ³	6 monthly extractive spot sample ^{Note 6}	BS EN 15058 ^{Note 5}
A6 DQXT233 Scrub Water Tank	HCl	10 mg/m ³	Annual	Spot sample
	Chloromethane ^{Note 3}	-	Quarterly	Spot sample
A12 SZXJ416 Stripper	Phenol	5 g/hr	Quarterly	Spot sample
	Iso Decanol	50 g/hr	Quarterly	Spot sample
	Iso Octanol	50 g/hr	Quarterly	Spot sample
A15 PPXT01 Benzene tank	Benzene	20 g/hr	Annual	Spot sample
A16 PPXT01 Benzene tank	Benzene	100 g/hr	Annual	Spot sample
A26 18ZZ0111 Furnace	Oxides of Nitrogen expressed as NO ₂	135 mg/m ³	6 monthly ^{Note 6}	Spot sample
	Benzene	5 mg/m ³	6 monthly ^{Note 6}	Spot sample
A27 18ZZ1111 Furnace	Oxides of Nitrogen expressed as NO ₂	135 mg/m ³	6 monthly ^{Note 6}	Spot sample
	Benzene	5 mg/m ³	6 monthly ^{Note 6}	Spot sample
A28 18ZZ0104 Furnace	Oxides of Nitrogen expressed as NO ₂	135 mg/m ³	6 monthly ^{Note 6}	Spot sample
A29 17ZZ0149 Furnace	Oxides of Nitrogen expressed as NO ₂	135 mg/m ³	6 monthly ^{Note 6}	Spot sample
A30 18TA0011 Benzene tank	Benzene	20 g/hr	Annual	Spot sample
A31 Temporary Carbon Water Exchange Plant Scrubber Stack	Oxides of Nitrogen expressed as NO ₂	75 mg/m ³	Monthly	BS EN 15058 ^{Note 5}

Table 2.2.2 Emission limits to air and monitoring

Emission point reference	Parameter	Limit (including unit of measurement)	Monitoring frequency	Monitoring method ⁴
A32 Temporary Neutraliser Stack	Oxides of Nitrogen expressed as NO ₂	75 mg/m ³	Monthly	BS EN 15058 ^{Note 5}

Note 1: A limit of 300 mg/m³ shall apply when Boiler 14 is operating on back-up Kerosene fuel.

Note 2: Monitoring of this emission point is only required should the linked boiler operate for a continuous period of 14 days or more in any calendar year.

Note 3: Chloromethane measurements shall be taken annually from the four main Dequest Amino Grades, i.e. Dequest 2000; 2046; 2060 and 2066.

Note 4: Or other EN, ISO or BS method as agreed in writing by Natural Resources Wales.

Note 5: All sampling shall be undertaken when both gas turbine and any supplementary firing are operating at a single load point, with the turbine at a load point in excess of 70% of its maximum continuous rating and with the waste heat boiler operating at typical levels.

Note 6: The frequency and scope of the sampling and testing shall be reviewed by Natural Resources Wales following a minimum of 1 years monitoring.

Table 2.2.5 shall be amended to:

Table 2.2.5 Emission limits to water and monitoring

Emission point ref	Parameter	Weekly Mass Limit (or other as defined)	Concentration Limit	Reference period	Monitoring frequency	Monitoring standard or method
W1	Benzene	20kg (as an average weekly discharge over each quarter)	-	Weekly	Weekly composite	
W1	Biphenyl	20kg (as an average weekly discharge over each quarter)	-	Weekly	Weekly composite	
W1	Triphenyl	-	-	Weekly	Weekly composite	
W1	Formaldehyde	-	10mg/l	Weekly	Weekly composite	
W1	Phenol	-	40mg/l ^{Note e}	Weekly	Weekly composite	
W1	COD	65000kg/week	-	Weekly	Weekly composite	
W1	Max volume of process effluent discharged	25000m3/week	-	Weekly	Continuous	
W1	pH	-	5-10	Continuous	Continuous	
W1 & W2 ^{Note a & b}	Cadmium	50g	-	Monthly	Monthly	
W1 & W2 ^{Note a & b}	Mercury	27g	-	Weekly	Weekly composite	
W1 & W2 ^{Note a}	PCB's ^{Note d}	100g	-	Weekly	Weekly composite	
W1 & W2 ^{Note a}	PCP	250g	-	Weekly	Weekly composite	
W1 & W2 ^{Note a}	TCB	50g	-	Weekly	Weekly composite	
W1 & W2	Mercury	-	1.5µg/l	Weekly	Weekly composite	
W1 & W2	Cadmium	-	3.5µg/l	Weekly	Weekly composite	
W1 & W2	PCP	-	15µg/l	Weekly	Weekly composite	
W1 & W2	TCB	-	20µg/l	Weekly	Weekly composite	
W2	COD	-	500mg/l	Weekly	Weekly composite	
W2	pH	-	6-9	Continuous	Continuous	

Note a: These weekly limits apply to the total weekly emissions from the permitted installation via w1 and w2 together.

Note b: releases of Mercury and Cadmium consist of releases from the PPC installation (present as contaminants in raw materials used on site) and also those releases that are as a result of historic land contamination.

Note c: Releases of process effluent is currently excluded +/- 2 hours of low tide. This shall be increased to +/- 3 hours of low tide following completion of improvement condition 9 (approval by NRW of segregated surface water discharge).

Note d: See section 6 for PCB definition.

Note e: This limit will be lowered to 10mg/l in line with completion of improvement condition IC32.

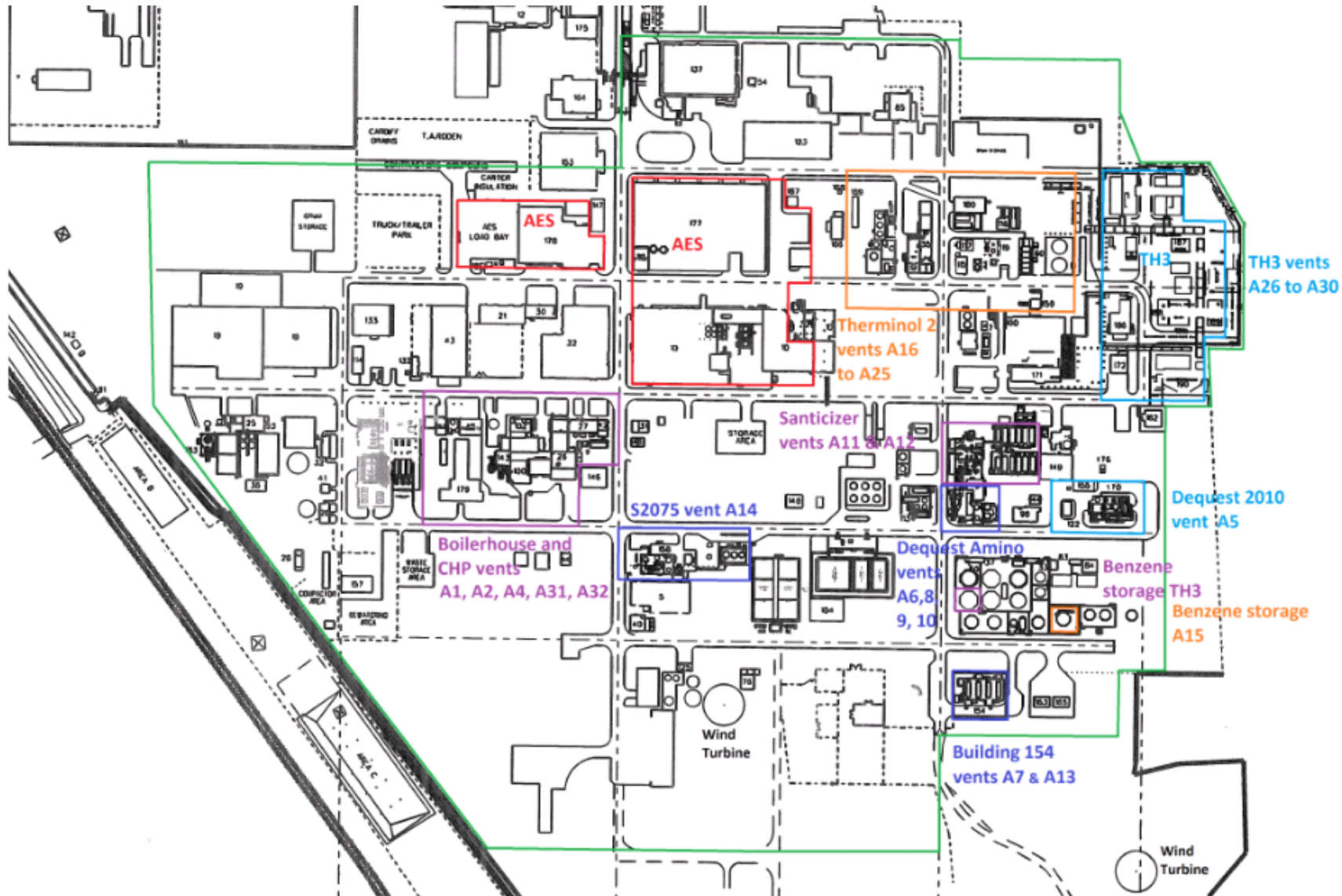
Schedule 3 – conditions to be added

The following conditions are added as a result of the application made by the operator

Table S1.6.1 shall be added:

Table S1.6.1 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
POM1	Therminol 3 Plant	At least 4 weeks prior to the commencement of commissioning of the Therminol 3 plant; the Operator shall provide a written commissioning plan, including timelines for completion, for approval by Natural Resources Wales. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the actions to be taken to protect the environment and report to Natural Resources Wales in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved.

Schedule 4 – amended plan



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