Compliance Assessment Report

Report ID: CAR_NRW0034704

This form will report compliance with your permit as determined by an NRW officer					
Site	Barry Site EPR/BU2110IS	Permit Ref	BU2110IS		
Operator/Permit holder	Cabot Carbon Ltd				
Regime	Installations				
Date of assessment	09/02/2019	Time in	N/A	Out	N/A
Assessment type	Report/Data Review				
Parts of the permit assessed	ROUTINE EMISSIONS AND SUBMISSIONS				
Lead officer's name	Kemp, Andi				
Accompanied by					
Recipient's name/position	Paula Lloyd/ SHEQ Manager	Date issued	18/02/2019		

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	
C2 - General Management - Management system and operating procedures	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.

Number of breaches recorded	**0**	**Total compliance score** (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

<u>Compliance Assessment: Cabot Carbon, Barry (BU2110IS) – 8th February 2019</u>

Purpose of Compliance Assessment

This CAR1 covers:

- routine monitoring submissions – April 2017 – December 2018
- annual monitoring data – 2017 & 2018
- annual performance reporting – 2017 - 2018
- annual E.M.S. objectives / targets progress – 2017 & 2018
- annual fugitive emissions review – 2017
- biennial accident management plan review – rec'd Nov. 2018
- 4 year review of site Closure Plan – 2018
- SPMP – April 2018 letter and AECOM report
- Cabot responses to actions raised in 2018 EMS Audit CAR1 (June 2018)
- Some minor queries: CO CEMS unit, MCPD, surface water analytical suite
- Review of any outstanding actions or items from previous CAR1 forms

Routine Quarterly, Six Monthly and Annual Monitoring Submissions

The period covered is April 2017 – December 2018.

Carbon monoxide continuous monitoring at A1 (36 m silica production stack) – The daily average results are all compliant and so are the half hour maximum (>50% daily ELV in any 24 hour period), although there are several events close to this half hourly maximum. Any missing daily data has been explained – usually due to plant downtime / repairs. See further on in this assessment about discussions relating to the CO CEM unit.

Quarterly and annual monitoring at A1 – All results, monitoring method and monitoring frequency are compliant.

Annual monitoring at A2 (SMR plant), A3 (boilers) and A13, A24 (treated silica) 2017 & 2018 – All results, monitoring method and monitoring frequency are compliant.

Quarterly surface water monitoring at W1, W2 and W3 – All results were compliant, however there were two periods where no samples were taken. Q. Oct. – Dec. 2017 – no sample at W3 due to flooding and submergence of emission point; W1 and W2 for this quarter were compliant. For the quarter April – June 2018, no samples were retrieved from W1 – W3 incl. due to very dry weather – this does corollate with meteorological data.

Action 1 Cabot 8th February 2019: *The operator to confirm, as supplementary evidence, that during this period there were no spills or loss of containment incidents, that could have entered the surface water system. Brief reference to what sources of information (daily logs, alarms, exceptions, meetings, shift handovers etc.) were consulted to reach the conclusion of "no incidents threatening W1, W2, W3" should be included.* **Due: 31st March 2019.**

Annual Performance Data – 2017 & 2018

As required by various permit conditions various performance parameters / indicators are required to be reported by 31st January annually, for the previous calendar year. These performance indicators include: waste recovered or disposed, water use, energy consumption, waste silica, carbon dioxide (kg / t product), chlorosilane use and hydrogen use.

All the reporting requirements for these performance indicators have been reported for 2017 and 2018. In 2017 there was a drive to reduce waste silica to landfill and either recycle or turn waste into R.D.F. In 2018 more hazardous waste was recovered, although overall the total waste produced increased significantly. Usually an increase in waste is related to maintenance and repair activities. The trend over the last 11 years is inconclusive, with years increasing and decreasing with no particular underlying pattern. However, the waste silica per tonne of product over the last two years is lower than the preceding four years data.

Water use is stable in total usage and as m3 / t product. Electricity use is stable and natural gas usage has slightly increased. Energy per tonne of product is also slightly up – although the operator is pursuing a boiler banking initiative, which will reduce natural gas consumption in keeping the boiler at optimum start up temperature by using waste steam from burner B4. Chlorosilane use and hydrogen production are stable. Overall over a period of 12 years CO_2 produced t/t has reduced significantly.

Annual EMS Objectives

A brief summary of initiatives and progress towards identified targets has been submitted for both 2017 and 2018.

Key things to note are:

- Recertification to the revised ISO 14001 – 2015 standard
- An ISO 14001 audit in May 2018 reported zero major and zero minor non conformances
- Cabot have been diverting off quality silica to alternative manufacturers, with various initiatives leading to considerable tonnage of what would have been waste silica to landfill
- The site have pledged to act on the findings of a recent ESOS Energy audit
- Boiler banking and reducing natural gas usage – mentioned above in annual performance indicators

Overall the site is making good progress and there were relevant recommendations about target setting and seeking areas to explore additional environmental gains in the recent EMS audit feedback. In line with the site EMS, management meetings are used to discuss environmental targets and progress towards delivery.

Previous recommendations (e.g. CAR1 15/01/2016, 14/06/2016) still hold.

Recommendation 1 8th February 2019: *Cabot must ensure that any initiatives involving reuse, recovery and recycling of materials, are compliant with U.K. waste legislation. Diverting product that is not the specification a particular customer has requested, to another customer who can use that material, would not usually be regarded as a waste activity – simply Cabot sourcing customers for different grades of product produced. Diverting material that Cabot has decided to discard, to an organisation that intends to combust this as fuel, would normally be regarded as a waste recovery activity and therefore U.K waste legislation (registered waste carriers, permitted site to receive and store and treat waste, or disposal) would need to be complied with.*

Annual Fugitive Emissions Review

The 2017 review is assessed here, with the 2018 review not due to be submitted until March 2019.

Overall very few events amounting to 274 kg lost from all sources (including solid, gas and liquids). It can be seen in Appendix 3 of the submission that there is a lot of proactive and reactive work being carried out across the plant to reduce fugitive losses, some examples include:

- Tightening bellows
- Work orders raised for various new parts, e.g. valves
- Acid pump seals refitted
- Reaffirm tanker loading procedures to prevent powder releases
- Tightening ring joints on burner train A and replace gaskets

While most of this is reactive, the operator records and follows up and amends procedures as required.

Additionally, an Early Information Alert was issued in relation to a parked up tanker releasing powder as it pulled off and trees caught the valve handle – some follow up actions were mandated: cut trees; verify handle position and ensure end caps fitted. An investigation into a natural gas leak was also reported (internally) – this has led the operator to review its written scheme of examination for gas pipework, ensuring insulation cladding is removed for inspections and P&IDs reviewed.

Overall the regulator can take some confidence in the operator's ability to identify, react to, record and implement changes to prevent and reduce fugitive emissions. The site does not have much potential for significant fugitive losses from tank vents and volatile substances.

Previous recommendations (e.g. CAR1 24/06/2015, 15/03/2016) still hold.

Action 2 Cabot 8th February 2019: *Cabot is to take on board comments made in the above two CAR1 forms and produce the list of substances, phase, how stored, how used and cross reference this with possible mode of loss. This would then be the site wide assessment of fugitive emissions, which would identify what measures should be in place to prevent or reduce these emissions. This would complement the existing tables submitted.* **Due: 31st July 2019.**

Accident Management Plan Review Nov. 2017

The last document reviewed was dated 16th Jan. 2017, this latest review is dated Nov. 2018. The accident management plan has matured over the years and a review may simply be confirmation that nothing has changed. The site have had only a handful of incidents to respond to and none would be regarded as needing to initiate the site emergency and off site emergency plans.

The site described a HCl leak and the detection and response to this – all systems, personnel and equipment worked as intended – maintenance with PTFE carbon steel was carried out. The HCl detection and fume deluge and containment system worked as planned.

Included with the review were a number of test scenarios and the operator continues to pursue training staff and contractors and ensuring inductions and drills take place. This is sufficient evidence to demonstrate that the operator has foreseen, can respond to and recover from and let appropriate staff and stakeholders know about any incidents on site. The site liaises strongly with neighbouring sites on the Barry Chemical Complex and actively participates in the Chemical Industries Association Regional Responsible Care meetings.

Site Closure Plan

This plan is to be reviewed every four years, the last plan reviewed was the 2014 document, assessed in: CAR1 15/01/2016. This submission (26/11/2018) states that there are no plans in the foreseeable future to close the Barry Cabot plant and therefore the review concluded that the content of the original 2006 Closure Plan is deemed satisfactory – and that a formal Closure Plan would be drawn up is such plant closure plans become a reality.

Action 3 Cabot 8th February 2019: *It is a permit requirement to have a Closure Plan in place: permit condition – 2.11.1.3. It may be that, with no plans to shut the site, a framework document could satisfy this permit condition. However, such a plan should at least look at situations where (due to plant maintenance and / or infrastructure changes) there are opportunities to move below ground structures to above ground or conduct minor remediation; manage contractors on site so pollution is not introduced to ground and monitoring boreholes are protected; should anticipate and therefore plan for managing stockpiled raw materials, waste generation, equipment cleaning and decommissioning; managing staff during such closure operations. It should be remembered that elements of a Closure Plan link to general plant procedures and can be invoked for temporary, partial and full closure of the site – and that any implications to linked sites is considered. To that end Cabot are to prepare a Closure Plan that addresses the above and comments in CAR1: 15/01/2016.* **Due: 31st July 2019.**

Site Protection Monitoring Programme

The SPMP conditions were introduced to assess the state of groundwater and soil within site boundaries at the time of permit issue; progress to remediation of (then) identified pollution; zone sites based on activities involving priority substances and priority hazardous substances and reasonable or little likelihood of future pollution; propose ongoing monitoring; inspect and maintain physical pollution prevention infrastructure; record, respond to and clean up pollution incidents. This comprised the SPMP. In 2008 the (then) EA moved away from this approach in favour of a lifetime records approach – assuming that there was an existing site baseline report, no ongoing pollution, legacy contaminated areas and adequate pollution prevention infrastructure and systems. This is all contained in guidance document: H5 and Regulatory Guidance Note: RGN9.

However IED brought a mandatory requirement to monitor groundwater (every 5 years) and soil (every 10 years) back into EPR permits – usually varied into the permit when the industrial sector goes through its formal IED reviews upon the issue of the relevant BAT Conclusions. The timetable for this to occur in the chemical industry is still some time away.

In the meantime Cabot commissioned URS (now AECOM) to do an SPMP review (28/01/15) and from this another report of a phase of groundwater monitoring (AECOM 15/03/18) was submitted with recommendations concerning the future approach. NRW accepted that 2017 monitoring would constitute the first year of the 5 year cycle. The original site application report, Design SPMP, plus responses to queries from our Geoscience team and the SPMP First Phase Reporting, establish the site baseline site condition report.

IED refers to relevant hazardous substances, which come from the CLP Regulation – see Annex II – which in turn refers to Annex X Water Framework Directive. This in turn has been expanded by Directive 2013/39 EC, which repealed earlier water framework and groundwater directives – see Annex I – which is an expanded version of the former Annex X – List of Priority Substances. IED and the Baseline Report guidance: Communication to the Commission concerning Article 22 (baseline reports) 2010/75/EC IED, refer to *Relevant* Hazardous substances. In practical terms IED installations should also consider substances (if not already RHS) COMAH dangerous substances and waste waters and effluent in addition to Annex II IED and Annex I revised WFD 2013.

URS Site Protection Monitoring Programme Review final report – 28th Jan 2015 (47072112)

This report is a review and update of the SPMP from 2006 – it aims to revise the relevant hazardous substances that are stored in sufficient quantities to potentially cause pollution; review the S-P-R pollution linkages; review the physical site pollution prevention infrastructure; and make recommendations for the future. The review concludes thus:

- Addition of formaldehyde to analytical suite
- Reduction to every 5 years of GW monitoring
- Confirmation of improvements and changes:
    - Two new boreholes to replace two lost – see plan
    - Some below ground pipework moved above ground
- Overall little likelihood of pollution, except from below ground waste water / effluent systems
- Propose no justification for 10 year soil monitoring

Things the regulator will consider when the formal IED review is underway (and these 2015 URS and AECOM 2017 reports will be valuable evidence comprising the overall Site Condition Report):

1. At least one round of soil sampling should be added to the 2015 / 2017 report data set to form the reviewed, IED compliant SCR – unless robust justification (possibly in the form of records and previous soil data – 2006?) is provided in the response to the regulation 61 EPR request for information to demonstrate BAT conclusions standards – NRW permitting team to assess
2. A review of the borehole logs to ensure there are capable of providing samples in response zones where pollution would migrate through – it may be enough to refer back to the original ASR, conceptual site model and 1st Phase SPMP intrusive data
3. Review of the conceptual site model – to verify the S-P-R linkages, groundwater regime and soil / made ground regime

The 5 year GW and 10 year soil sampling regime will not formally be introduced until the IED permit review, where the operator will be expected to submit a review and update (if required) of their Site Condition Report – refer to guidance: *Communication to the Commission concerning Article 22 (baseline reports) 2010/75/EC IED*.

-

AECOM Site Protection and Monitoring Programme 2017 Groundwater Monitoring Report – 15 March 2018 (60560304)

As mentioned above, the previous report and this report will provide useful information to NRW when conducting the IED permit review and the requirement for 5 yearly and 10 yearly groundwater and soil monitoring, respectively. For the time being NRW accepts (but will not enforce) the 2017 groundwater monitoring round as year 1 of a 5 yearly cycle, with soil monitoring (dependant on justification not to conduct on a risk basis) being included with the IED review. The date of the issued permit from the permit review is usually the point from which to commence the 5 and 10 yearly cycles – however, if the operator so wishes, the 5 yearly cycle started with the 2017 data set, could be retained. The important thing is to have a reviewed SCR and no overly long gaps between data sets.

Referring to the AECOM report (Mar 2018) and groundwater monitoring in general, NRW offers these comments (notwithstanding that NRW will review formally during the IED review and some points or policy may differ from comments below):

- Report concluded CSM does not need to change or be refined and that S-P-R pollution linkages are as previously stipulated
- **Former / lost boreholes may offer a potential pathway for pollution migration – ideally these should be decommissioned to the recognised standard**
- It appears that the response zones for each borehole are representative of the shallow groundwater body and therefore capable of detecting contamination
- The list of potentially polluting substances (including relevant hazardous substances) has been revisited based on site inventory (very small volumes discounted, i.e. individual drums) and site zoning of reasonable likelihood of pollution – this needs periodic review
- **Borehole 108 does not have formaldehyde in its analytical suite – why? It is adjacent to the treated plant**
- **Field tests should be done after well purging to indicate local GW quality**

- **Any analysis by laboratories for regulatory purposes must be carried out by a laboratory accredited to MCerts for the analyte and medium concerned**

Action 4 Cabot 8th February 2019: *Cabot Carbon to provide a response to the points highlight in bold above.* **Due: 31st July 2019.**

Cabot responses to actions raised in 2018 EMS Audit CAR1 (June 2018)

Four actions were raised in the EMS audit and the operator submitted responses by the required date.

Action 1 concerned updating the Aspects and Impacts Register – the response confirmed that the register is reviewed every September; fuel from vehicle movements and any associated fire risk has been defended as a medium risk; general fire risk, considering existing site measures, to remain as medium risk and that this accurately reflects the ranking on the Aspects and Impacts register. **Action closed.**

Action 2 required the operator to list the sources of information they use for their Legal Register – the operator confirms that they use Legislation Update Service, CIA meetings, BRefs, Cabot Corporate department, NRW communications etc. **Action closed.**

Action 3 concerned the application of other directly applicable legislation – the operator indicated that they have looked at the applicability of certain legislation, e.g. batteries and water framework directive and have confirmed that as simply a user of batteries have no direct obligations and that substances under the WFD are considered under the SPMP and SCR. **Action closed.**

Action 4 required the operator to review their EMS alongside the revised ISO 14001 standard – the evidence for this is recertification under the new standard, issued (following an audit by SGS) in June 2018. **Action closed 2.**

Some minor queries: CO CEMS unit, MCPD, surface water analytical suite

Several minor queries and correspondence exchanged due to the above aspects of regulation.

1. After a short period of no supplier, Cabot have secured the services of ALS laboratories in respect of BOD, oil & grease and pH of surface water samples from W1, W2 and W3. The test house (currently) has MCerts accreditation for these analytes for water.
2. The operator had a query about the applicability of MCPD. AK sent an email outlining the situation (May

2018). The formal IED review will likely be ahead of the backstop date of 2025 and will introduce the minimum standards from the MCPD as BAT – see Chapter II of IED. Charges for medium combustion plant are currently on NRW website and will be in the Charging scheme – charges (relevant at the time) will be levied when the MCPD requirements are put into permits, i.e. at the IED review or Directive date of 2025 – whichever is the sooner.

3. In January 2018 the operator had a query about purchasing a new CO monitor and meeting the requirements of MCerts. This would trigger the additional requirements of the quality assurance standard: BS EN 14181 – this is a significant undertaking. It was proposed in an email sent by AK (Jan 2018) that Cabot may want to include a justification for not having CO continuously monitored as a permit ELV. It may be possible to justify continuous CO monitoring as a process parameter, not a ELV and therefore not subject to MCerts and BS EN 14181.

Review of any outstanding actions or items from previous CAR1 forms

There are no outstanding actions.

END.

This form will report compliance with your permit as determined by an NRW officer			
Site	Barry Site EPR/BU2110IS	Permit Ref	BU2110IS
Operator/Permit holder	Cabot Carbon Ltd	Date	09/02/2019

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.