




## Application SCR evaluation template

Name of activity, address and NGR	<p>Seal Sands Chelates/Fine Chemicals operated by The Dow Chemical Company Limited            Seal Sands            Middlesbrough            Cleveland            TS2 1UD</p> <p>NGR: 455300 524000</p> <p>Application ref: EPR/BV2719IH/S005</p>
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Document reference, date and version of application SCR	<p>Dow Seal Sands Site Condition Report: Surrender Application, GCU0208003, June 2019, issue1</p> <p>            Dow Chemical Company Limited.vsd</p> <p>The surrender SCR also lists the following supporting documents. These are saved to EDRM:</p> <p>            SOMultiLink.vso</p> <ul style="list-style-type: none"> <li>• AK (2003) AK EHS &amp; Risk Environment, Health, Safety &amp; Risk Technical Report: PPC Site Report: Phase 1(a) Dow Chemical Company Ltd, Seal Sands Middlesbrough. Kvaerner E&amp;C UK Limited, Report Ref. 445002/01/01/180/REP/0001.</li> <li>• Dow Chemicals Seal Sands PPC Permit BV2719_Section_1.4.1_Improvements_4june19.docx</li> <li>• ERM (2015) Contaminant Delineation &amp; Surrender Condition Investigation, Seal Sands. Report Ref. 0264462.</li> <li>• Geosyntec (2018) Chelating Agent Baseline Review and Additional Tasks: Former Dow Chemical Company, Seal Sands Production Facility. Report Ref. GCU0208003_R2.</li> <li>• Geosyntec (2019) Soil &amp; Groundwater Delineation and Surrender Condition Investigation 2018 at the Former Dow Chemical Company, Seal Sands Production Facility. Report Ref. GCU0208002-P-v3.</li> <li>• URS (2006) First Phase Reporting of the Site Protection and Monitoring Programme Dow Chemical Company Ltd, Seal Sands. Report Ref: 44319801</li> <li>• Dow_Accident Management Plan - Feb 2013.pdf</li> <li>• Dow_2012_Site Closure Plan Feb 2012.pdf</li> <li>• Dow_2014_Demolition_Health &amp; Safety Plan.pdf</li> <li>• Dow_2014_Site Closure Plan June 2014.pdf</li> <li>• AECOM_60491892_Dow Seal Sands Pre-Demolition Sampling (25-04-16).pdf</li> <li>• Dow_Seal_Sands_Equipment_Lists.zip</li> <li>• DOW Chemicals H&amp;S File.pdf</li> <li>• 03 - DDM Ltd Special Waste Disposals Asphalt – 01.pdf</li> <li>• 04 - DDM Ltd Concrete &amp; Brick Rubble Waste Disposals – 01.pdf</li> <li>• 04 - DDM Ltd Special Waste Concrete Contaminated Waste – 01.pdf</li> <li>• 05 - DDM Ltd Inert Soil Waste – 01.pdf</li> </ul>
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<b>1.0 Site details</b>
<b>Has the applicant provided the following information as required by the application SCR template?</b>
Site plans showing site layout, drainage, surfacing, receptors, sources of emissions/releases and monitoring points
<p>The site was reclaimed from salt marsh in the late 1960's using dredged alluvial deposits from the River Tees. It is understood that a large volume of furnace slag was used to contain the dredged material on site until it stabilised. A slag wall is known to be present along the River Tees frontage. A chemicals site was developed on the land in the late 1970's. The Chelate Plant was built and commenced operations and in 1979 and Multi-Product Plant No.1 was constructed in 1988. The Dow Chemical Company Ltd took over occupation of the site in 1989. A second Multi-Purpose plant was developed in 1998.</p> <p>URS (2006) First Phase Reporting of the Site Protection and Monitoring Programme Dow Chemical Company Ltd, Seal Sands. Ref: 44319801</p>  <p>SOMultiLink.vso</p>

<b>2.0 Condition of the land at permit issue</b>
To be completed by GWCL officers (Receptor)
<b>Has the applicant provided the following information as required by the application SCR template?</b>
<p>a) Environmental setting including geology, hydrogeology and surface waters</p> <p>b) Pollution history including:</p> <ul style="list-style-type: none"> <li>• pollution incidents that may have affected land</li> <li>• historical land-uses and associated contaminants</li> <li>• visual/olfactory evidence of existing contamination</li> <li>• evidence of damage to existing pollution prevention measures</li> </ul> <p>c) Evidence of historic contamination (i.e. historical site investigation, assessment, remediation and verification reports (where available))</p> <p>d) Has the applicant chosen to collect baseline reference data?</p>
<p>Applicants are not necessarily required to collect baseline reference data as part of the application. However, at sites where historic contamination may be an issue, they may choose to establish baseline conditions that can be referred to at surrender. Without this it may be difficult for them to prove that they have not caused the contamination.</p>

<b>3.0 Permitted activities</b>	
(Source)	
<b>Has the applicant provided the following information as required by the application SCR template?</b>	<b>Response (Specify what information is needed from the applicant, if any)</b>
<p>a) Permitted activities</p> <p>b) Non-permitted activities undertaken at the site</p>	
<p>A permit was issued under the Pollution Prevention and Control (PPC) Regulations to <i>The Dow Chemical Company Ltd</i> on 21/04/04 to carry out the following activities, listed in Part 1 of Schedule 1 to the PPC (now EPR) Regulations:</p> <ul style="list-style-type: none"> <li>• Section 4.1 Part A (1) (a) (iv) – producing organic chemicals such as organic compounds containing nitrogen, such as amines, amides, nitrous-, nitro- or azo-compounds, nitrates, nitriles, nitrogen heterocyclics, cyanates, isocyanates, di-isocyanates and di-isocyanate prepolymers;</li> <li>• Section 4.2 Part A (1) (a) (i) – producing inorganic chemicals such as gases, such as ammonia, hydrogen chloride, hydrogen fluoride, hydrogen cyanide, hydrogen sulphide, oxides of carbon, sulphur compounds, oxides of nitrogen, hydrogen, oxides of sulphur, phosgene;</li> </ul>	

### 3.0 Permitted activities

(Source)

Has the applicant provided the following information as required by the application SCR template?

Response  
(Specify what information is needed from the applicant, if any)

- Section 4.2 Part A (1) (a) (iv) – producing inorganic chemicals such as salts, such as ammonium chloride, potassium chlorate, potassium carbonate, sodium carbonate, perborate, silver nitrate, cupric acetate, ammonium phosphomolybdate;

and the following directly associated activities:

- Storage and handling of raw materials
- Storage, handling and dispatch of intermediates, by-products, finished products, waste & other materials
- Control & abatement systems for emissions to air and releases to sewer
- Utilities and Services

### 3.0(a) Environmental Risk Assessment

(Source)

The H1 environmental risk assessment should identify elements that could impact on land and waters, cross-referenced back to documents and plans provided as part of the wider permit application.

AK (2003) AK EHS & Risk Environment, Health, Safety & Risk Technical Report: PPC Site Report: Phase 1(a) Dow Chemical Company Ltd, Seal Sands Middlesbrough. Kvaerner E&C UK Limited, Report Ref. 445002/01/01/180/REP/0001.

First document in:



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This document dates from 2003 and describes the risk assessment undertaken for the original permit application.

### 3.0(b) Will the pollution prevention measures protect land and groundwater?

(Conceptual model)

Are the activities likely to result in pollution of land?

If Yes, specify what additional controls/checks may be necessary



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For dangerous and/or hazardous substances only, are the pollution prevention measures for the relevant activities to a standard that is likely to prevent pollution of land?

(This may consist of improved infrastructure, targeted surveillance monitoring by the operator and/or inspections by compliance teams)

### Application SCR decision summary

Tick relevant decision


Sufficient information has been supplied to describe the condition of the site at permit issue

Information is missing- the following information must be obtained from the applicant. (Advise the permitting team on what additional information is needed)	
Pollution of land and water is unlikely; or	
Pollution of land and water is likely (Advise the permitting team on what additional controls/checks may be necessary)	
Historical contamination is present- advise operator that collection of background data may be appropriate	
Date and name of reviewer:	

## Operational phase SCR evaluation template

Sections 4.0 to 7.0 may be completed annually in line with normal record checks.

<b>4.0 Changes to the activities</b> (Source)	
<b>Have there been any changes to the following during the operation of the site?</b>	<b>Response (Specify what information is needed from the applicant, if any)</b>
a) Activity boundaries b) Permitted activities c) "Dangerous substances" used or produced	
a) Activity boundaries – no change b) Permitted activities – no change c) "Dangerous substances" used or produced – no change	

<b>5.0 Measures taken to protect land</b> To be completed by EM/PPC officers (Pathway)
Has the applicant provided evidence from records collated during the lifetime of the permit, to show that the pollution prevention measures have worked?
Taken from the surrender SCR:  Throughout the life of the operational plant under the environmental permit, Dow continually reviewed and improved operating procedures and pollution prevention measures. For a summary of improvement measures, please refer to the attached: Dow Chemicals Seal Sands PPC Permit BV2719_Section_1.4.1_Improvements_4june19.docx.   Dow Chemical Company Limited.vsr  The areas of the site where permitted activities were undertaken were either bunded or covered by concrete hardstanding and activities were undertaken in accordance with safe working procedures. Any isolated small-scale spills that may have occurred would either be within bunded areas or to areas of concrete hardstanding and been directed to the sites effluent drainage & treatment system. The treatment system had instrumentation and procedures to sample/check before releasing under consent to municipal drain system. Dow undertook regular EH&S audits and/or self-assessments to demonstrate good control.  Soil and groundwater monitoring data collected between 2005 and 2018 is summarised in Geosyntec 2018 and indicates that there has been no deterioration of land during the permitted operations at the site. Geosyntec 2018 (Sections 3, 5 & 7) indicates that soil and groundwater conditions have improved since production activities ceased at the site in June 2014. Soil and groundwater concentrations of the main chemicals of potential concern (chelating agents etc.) in 2018 are lower than 2005 baseline levels.

<b>6.0 Pollution incidents that may have impacted on land and their remediation</b> To be completed by EM/PPC officers (Sources)
Has the applicant provided evidence to show that any pollution incidents which have taken place during the life of the permit and which may have impacted on land or water have been investigated and remediated (where necessary)?
Taken from the surrender SCR: No significant pollution incidents that may have damaged the land are known to have occurred at the site during Permitted operations (2005-2014). Isolated small-scale spills have been recorded at the site and are summarised in Section 3.3 of Geosyntec (2018). Spills would have occurred either within bunded areas or to areas of concrete hardstanding and been directed to the sites effluent drainage system. No investigations or remediation of pollution incidents was required between 2005 and site closure in 2014.

## 7.0 Soil gas and water quality monitoring (where relevant)

Where soil gas and/or water quality monitoring has been undertaken, does this demonstrate that there has been no change in the condition of the land? Has any change that has occurred been investigated and remediated?

Taken from surrender SCR:

Soil and groundwater quality data was collected since 2005 (original baseline for sites environmental permit), as follows:

- 2005: Soil & Groundwater data – original baseline for permit (URS 2006)
- 2007: routine groundwater
- 2011: routine groundwater
- 2014: routine groundwater
- 2015: soil & groundwater data – post production & pre-demolition assessment
- 2018: soil & groundwater data – post-demolition closure assessment

The following soil and groundwater investigations (which are included with this submission) were undertaken prior to and after demolition:

- 2015: ERM (2016)
- 2018: Geosyntec (2019)
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Reports can be found on Page 95 and Page 417 of this PDF:



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Results from these investigations indicated declining concentrations in both soils and groundwater when compared to monitoring data collected in 2005 (original baseline assessment) and during period of active production of chemicals at the site up to mid-2014. The available data indicates that the land has not deteriorated and is in a satisfactory state. The reader is referred to Sections 3, 5 & 7 of Geosyntec (2018) (Page 329 of the above). This report provides a detailed closure assessment of available soil & groundwater data and a review of chelating agent baseline quality data.

## Surrender SCR Evaluation Template

If you haven't already completed previous sections 4.0 to 7.0, do so now before assessing the surrender.

<b>8.0 Decommissioning and removal of pollution risk</b>
To be completed by EM/PPC officers
Has the applicant demonstrated that decommissioning works have been undertaken and that all pollution risks associated with the site have been removed? Has any contamination of land that has occurred during these activities been investigated and remediated?

Active production of chemicals at the site ceased in June 2014.

Decommissioning is described within the attached site closure plans:

- Dow\_2012\_Site Closure Plan Feb 2012.pdf
- Dow\_2014\_Demolition\_Health & Safety Plan.pdf
- Dow\_2014\_Site Closure Plan June 2014.pdf



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Demolition & verification reports are as follows:

- AECOM\_60491892\_Dow Seal Sands Pre-Demolition Sampling (25-04-16).pdf
- Dow\_Seal\_Sands\_Equipment\_Lists.zip
- DOW Chemicals H&S File.pdf
- 03 - DDM Ltd Special Waste Disposals Asphalt – 01.pdf
- 04 - DDM Ltd Concrete & Brick Rubble Waste Disposals – 01.pdf
- 04 - DDM Ltd Special Waste Concrete Contaminated Waste – 01.pdf
- 05 - DDM Ltd Inert Soil Waste – 01.pdf



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Decommissioning works are summarised in DOW Chemicals H&S File.pdf. It was undertaken during 2016 & 2017 and involved:

- Emptying of tanks and pipelines
- Demolition of above ground structures
- Excavation & removal of below ground services (pipes, effluent drainage network, electric's etc.)
- Some clean demolition materials were crushed, and site land surface returned to grade.



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The following soil and groundwater investigations (which are included with this submission) were undertaken prior to and after demolition:

- 2015: ERM (2016)
- 2018: Geosyntec (2019)

Reports can be found on Page 95 and Page 417 of this PDF:



Dow Chemical  
Company Limited.vsi

Results from these investigations indicated declining concentrations in both soils and groundwater when compared to monitoring data collected in 2005 (original baseline assessment) and during period of active production of chemicals at the site up to mid-2014. The available data (presented in Geosyntec 2018 (Page 329 of the above)) does not suggest the presence of significant soil or groundwater contamination.



### 9.0 Reference data and remediation (where relevant)

To be completed by GWCL officers

Has the applicant provided details of any surrender reference data that they have collected and any remediation that they have undertaken?

(Reference data for soils must meet the requirements of policy 307\_03 Chemical test data on contaminated soils – quantification requirements). If the surrender reference data shows that the condition of the land has changed as a result of the permitted activities, the applicant will need to undertake remediation to return the condition of the land back to that at permit issue. You should not require remediation of historic contamination or contamination arising from non-permitted activities as part of the permit surrender.

Surrender Reference data has been collected which generally shows an improvement in soil and groundwater condition during the lifetime of the permit.

No remediation has been undertaken.

### 10.0a Statement of site condition

To be completed by EM/PPC officers

Has the applicant provided a statement, backed up with evidence, confirming that the permitted activities have ceased, decommissioning works are complete and that pollution risk has been removed and that the land and waters at the site are in a satisfactory state?

Operator confirms:

- the permitted activities have stopped (June 2014)
- decommissioning is complete (2016-17)

Area officer, Paul Saunders, also confirms that the activities have ceased and that the site has been cleared.

### 10.0b Statement of site condition

To be completed by GWCL officers

Has the applicant provided a statement, backed up with evidence, confirming that the permitted activities have ceased, decommissioning works are complete and that pollution risk has been removed and that the land and waters at the site are in a satisfactory state?

Yes

### Surrender SCR decision summary

To be completed by GWCL officers and returned to NPS

Tick relevant decision

Sufficient information has been supplied to show that pollution risk has been removed and that the site is in a satisfactory state – accept the application to surrender the permit; or

✓

Insufficient information has been supplied to show that pollution risk has been removed or that the site is in a satisfactory state – do not accept the application to surrender the permit. The following information must to be obtained from the applicant before the permit is determined:

Date and name of reviewer John Collins, 28/10/2019