

Application SCR evaluation template

Name of activity and address	Kodak Alaris Limited Harrow Combined Heat and Power Plant Headstone Drive, Wealdstone, Harrow, Middlesex, HA1 4TY EPR/KP3931NL/S003
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Document reference of application SCR Date and version of application SCR	Document entitled 'Surrender Site Condition Report, document report number 934628, dated February 2017 and prepared by GHD Environment Limited.
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Supporting documents	<p>Appendix A: Supporting Information – historical and application stage:</p> <ul style="list-style-type: none"> • Appendix A1 – Drainage plans • Appendix A2 – Application support information • Appendix A3 – Aspects, impacts and analysis • Appendix A4 – Phase I executive summary • Appendix A5 – Environmental risk assessment • Appendix A6 – PCBs <p>Appendix B: Supporting Information – operational phase:</p> <ul style="list-style-type: none"> • Appendix B1 – Aspects, impacts and analysis • Appendix B2 – Spill procedure • Appendix B3 – Inspection records • Appendix B4 – Environmental audits • Appendix B5 – Diesel spill incident records • Appendix B6 – Enviroguards incident reports • Appendix B7 – Borehole locations, logs, data and photographs • Appendix B8 – Groundwater data <p>Appendix C: Supporting Information – decommissioning and surrender:</p> <ul style="list-style-type: none"> • Appendix C1 – Site closure plan • Appendix C2 – Decommissioning risk assessments and method statements • Appendix C3 – Decommissioning reports • Appendix C4 – Other decommissioning documentation • Appendix C5 – Photographic record post-decommissioning
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1.0 Site details
Has the applicant provided the following information as required by the application SCR template?
Site plans showing site layout, drainage, surfacing, receptors, sources of emissions/releases and monitoring points
<i>Provided in support of Environmental Permit application EPR/XP3733LN; accepted and determined on 21/12/2006 as part of the original application submission.</i>

2.0 Condition of the land at permit issue

(Receptor)

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

- a) Environmental setting including geology, hydrogeology and surface waters
- b) Pollution history including:
 - pollution incidents that may have affected land
 - historical land-uses and associated contaminants
 - visual/olfactory evidence of existing contamination
 - evidence of damage to existing pollution prevention measures
- c) Evidence of historic contamination (i.e. historical site investigation, assessment, remediation and verification reports (where available)
- d) Has the applicant chosen to collect baseline reference data?

The Application Surrender Report contains details of:

- a) *The environmental setting: geology, hydrogeology and hydrology (Made Ground and London Clay, overlying Woolwich and Reading Beds of the Lambeth Group, and Upper Cretaceous Chalk; unproductive aquifer in the London Clay and secondary aquifer in the Woolwich and Reading Beds, and a major confined aquifer (Chalk); groundwater beneath the site is not in hydraulic continuity with the surface water due to the impermeable clay close to the surface).*
- b) *Pollution history:*
 - *The site implemented an internal process called Enviroguards for significant environmental incident recording and investigations, and in the five years prior to the permit issue there were no incidents recorded.*
 - *Site history – the site consisted of undeveloped rural land on the north-west edge of London prior to its occupation by Kodak Limited in the late 1880s and was subsequently developed as a manufacturing facility. In addition to photographic film and paper manufacturing activities, the plant was historically used for the manufacture of synthetic chemicals, photo-chemicals and silver nitrate used in the photographic industry. Chemical manufacturing no longer occurs on the site;*
 - *Site reconnaissance was undertaken on 23rd February 2006 and no visual evidence of pollution was identified;*
 - *Substances that were associated with the site are provided in Appendix A3.*
- c) *Information on historic contamination was provided through documentation from a desk study in 2003 (executive summary provided in Appendix A4) – no previous site investigation or assessment reports were carried out at the site.*
- d) *No baseline data was collected prior to the issuing of Environmental Permit XP3733LN.*

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)**

- a) Permitted activities
- b) Non-permitted activities undertaken at the site

The site was permitted under Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more. For the operation of a combined heat and power (CHP) plant for the production of steam and electricity. The installation comprised of:

- *2 gas turbines each with a thermal input of 14.23 MW on natural gas with oil as a standby fuel.*
- *A waste heat boiler with a thermal input of 37 MW on natural gas with gas oil as a standby fuel.*
- *2 standby boilers each with a thermal input of 32 MW on natural gas.*

With the Directly Associated Activity of water treatment to provide demineralised water to the CHP plant.

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.

The Environment Agency reviewed the applicant's environmental risk assessment and assessment of the effectiveness of pollution prevention measures. The information submitted indicated that there was a reasonable possibility of future pollution of the land. Therefore it was determined that a Site Protection and Monitoring Programme (SPMP) would be required for assessment and approval, and improvement conditions were included within the permit.

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

(Conceptual model)

Are the activities likely to result in pollution of land?

As stated above, it was identified in the original Application Site Report that there was a reasonable possibility of land pollution. The permit was issued with conditions requiring the implementation and operation of a SPMP and improvement conditions relating to the protection of the environment from the permitted activities as follows:

- *Improvement Condition 2 required the operator to make good the hardstanding around the gas oil delivery point.*
- *Improvement condition 3 required the operator to produce a report summarising the results of review of the hardstanding and containment measures within the installation.*

The operator maintained a number of systems to ensure prevention of accidents, these included preventative maintenance regimes, employee training, documented procedures for transfer of potential pollutants and high level alarms within bunds and tanks. A number of primary, secondary and tertiary containment measures were also in place to minimise the potential for leaked pollutants to cause pollution should an accident occur. However, an accident management plan for the installation was not submitted with the original application to Environmental Permit EPR/XP3733LN and so an improvement condition was included within the permit (IC5).

Overall it was considered that the application adequately described the condition of the site and in particular identified any substance in, on or under the land that may constitute a pollution risk.

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?

The submitted information did not provide adequate detail in relation to the pollution prevention measures in place at the site. Therefore, improvement conditions were added to the permit as discussed above.

Application SCR decision summary	Tick relevant decision
Sufficient information has been supplied to describe the condition of the site at permit issue	Yes
Pollution of land and water is unlikely with the conditions set within the permit	No
Historical contamination may be present- advise operator that collection of background data may be appropriate	No
Date and name of reviewer: (signature of authorising officer on permit)	P Butler 21 st December 2006

Operational phase SCR evaluation template

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

4.0 Changes to the activities (Source)	
Have there been any changes to the following during the operation of the site?	Response (Specify what information is needed from the applicant, if any)
a) Activity boundaries b) Permitted activities c) "Dangerous substances" used or produced	<p><i>Environmental Permit EPR/XP3733LN was issued to Kodak Limited in December 2006. Since then there have been a number of transfers (permit number is now EPR/KP3931NL) and variations relating to monitoring, and two changes to the permitted activities which were as follows:</i></p> <ul style="list-style-type: none"> <i>Application EPR/XP3733LN/V004 – variation to operate a new 8 MWth natural gas fired steam generator.</i> <i>Application EPR/KP3931NL/V002 – variation to recognise the installation as a Chapter 2 activity under the IED. To remove standby boiler 4 from the permit.</i> <p><i>No relevant dangerous substances were known to have been used, produced or released as a result of the permitted activities that were not documented in the original Application Site Report. Polychlorinated biphenyls (PCBs) were removed from the site in the early 1990s (further details in Appendix A6 of the Application Surrender Report). Appendix B1 of the Application Surrender Report lists the potentially polluting substances identified in the most recent aspects and impacts analysis for the site.</i></p>

5.0 Measures taken to protect land (Pathway)
<p>Has the applicant provided evidence from records collated during the lifetime of the permit, to show that the pollution prevention measures have worked?</p> <p><i>The surrender application provided information on the preventative measures taken to protect the land, air and groundwater. The SPMP set out the inspection and monitoring programme for the site, to monitor the effectiveness of pollution prevention infrastructure and to provide a warning of loss of containment. This included regular inspections and checks of infrastructure to ensure the ongoing suitability and effectiveness of equipment and controls. Further details are summarised below:</i></p> <ul style="list-style-type: none"> <i>Inspection of bunds and tanks including a monthly visual inspection of all bunds and a six monthly thorough inspection by competent persons.</i> <i>Sub-surface structures were subject to a six-monthly inspection, carried out by competent persons and the results recorded.</i> <i>Roads, kerbs and walkways were inspected on an annual basis, as well as being informally inspected on an ad-hoc basis.</i> <i>Housekeeping inspections were carried out weekly on a rolling basis so the whole installation was inspected every four weeks.</i> <p><i>All inspection records were maintained in Zetasafe since 2014, and prior to this the records were logged in a spreadsheet. The inspection logs also contained any information pertaining to corrective actions to maintain the integrity of the containment infrastructure.</i></p> <p><i>As well as the use of bunds, the site was extensively concreted which reduced the potential for environmental impact from any potential uncontrolled releases. The concrete hardstanding across the area was found to extend to between 0.23m to 0.65m below ground level (bgl). Below the concrete is Made Ground, which extends between 0.55m and 1.20m bgl, followed by a layer of low permeability natural clay that extends to over 3m bgl.</i></p> <p><i>The site also had procedures in place for spills and the safe delivery and storage of chemicals, and annual training was carried out for all employees and contractors (as required).</i></p>

6.0 Pollution incidents that may have impacted on land and their remediation

(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)?

The Site Surrender Report identified one significant pollution incident during the lifetime of the permit, which occurred on the 18 August 2008. There was a release of a maximum of 60 litres of diesel to the surface water drains, and the following actions were taken:

- *Oil absorbing mats were placed in the down gradient drains.*
- *The catch pots within the affected water drains were pumped out.*
- *Litter and debris were cleared from Yeading Brook to ensure that any diesel contamination could be identified and contained.*
- *Oil absorbing mats were placed at the outfall of the site to Yeading Brook.*
- *The tarmac surfaces adjacent to the generator were dug out and the contaminated material sent off-site for disposal.*
- *Yeading Brook was inspected for a period of two weeks following the incident to ensure that the clean-up was effective.*

The site's Enviroguard reporting system identified six additional spill reports that occurred in the permitted installation area and the details are summarised below:

- *28 June 2014 – Yorks 5 and 6 centrifugal refrigeration units had been removed from their location and temporarily stored externally prior to off-site reclamation, and a small volume of oil contaminated surface water runoff was identified. The drains were immediately sealed off with clay mats and absorbent granules, and absorbent socks were placed around the machinery. No oil reached the surface water drains. There were no obvious oil leaks on the equipment and it appeared that the oil was being washed out of contaminated insulation.*
- *22 November 2014 – Disabling of the effluent catch tank and mixing system on the reverse osmosis plant resulted in a breach of the Trade Effluent Consent (TEC) to the Thames Water sewer, as a sample from Outfall A had a pH of 4-5. This was rectified.*
- *23 June 2015 – Phosphate solution for the treatment of Waste Heat Boiler (WHB) boiler water is prepared using a mixing and dosing rig in the boiler house basement. During a routine check it was discovered that the mixing vessel had overflowed, and that the bund protecting the rig was more than half full of liquid. Two valves on the phosphate mixing and dosing rig had been left open to allow the entire supply of Nalco 1742 stored in the boiler house to drain into the mixing and dosing rig. The bund successfully contained the spill. Actions included updating the boiler water chemical work instruction, installation of spring return valves on the rigs for the WHB and boiler 3, and emptying the bund and mixing vessel with disposal as hazardous waste.*
- *3 September 2015 – A leak of an emulsion of oil and water from the steam generator feedwater pump was identified during a routine inspection. The steam generator was immediately shut down and the spill was cleaned up. The pump contained 4.3 litres of oil and some of this had entered the drain in the boiler yard. The surface drains in this area went to foul sewer via an interceptor. When the interceptor was inspected it was found that the first chamber contained emulsified oil but the second and third chambers were clean. The interceptor was pumped out and the steam generator feed pump was repaired.*
- *18 April 2016 – During an external audit it was found that samples from Outfall A had a pH of 3, which is below the lower permitted level of pH 6 in the TEC. The effluent from the W9 Denim Water Plant discharges into Outfall A and it was discovered that the 3-way valve on the effluent buffer tank had failed and was allowing effluent that was out of specification to discharge to sewer. It was also noticed that the pH probe on the system had failed. The pH of the effluent leaving the tank was pH 1. Checks and repairs were made while monitoring the pH at the outfall.*

6.0 Pollution incidents that may have impacted on land and their remediation

(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)?

- *9 January 2017 – The Denim Water Plant was being removed by contractors, and during the lifting and removal of the acid tank (integrally banded and had contained 36% hydrochloric acid) it was tilted and a colourless liquid escaped from the bund onto the surrounding hardstanding. The operation immediately stopped, the drains in the area were protected and Kodak personnel were informed. It was estimated that less than 5 litres of liquid had been spilled, and it was noted that none of the liquid had reached any of the drains in the area (all foul). Inspection of the tank found that there was a breather in the main vessel that vented into the bund, and it appeared that vapour from this breather had collected in the bund over a number of years. The remaining liquid in the bund had a strong hydrochloric odour. There was less than 5 litres remaining in the bund. The spill was cleaned and an action was put in place to thoroughly inspect all vessels, ducts and pipeworks after cleaning by external contractors.*

No other environmental incidents were identified during the operation of the site that could have caused harm to land, air or groundwater.

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?

No soil, gas and water quality monitoring was undertaken at the site during its operational phase. However, various environmental desk studies and intrusive investigations have been carried out over the wider Kodak facility since 2003, and a programme of groundwater monitoring was implemented across the wider site between 2004 and 2017. The samples in the intrusive investigations and groundwater monitoring were assessed against available generic assessment criteria (GAC) comprising Drinking Water Quality Standards (DWQS), Environmental Quality Standards (EQS) and World Health Organisation (WHO) Health Criteria to determine if the concentrations detected represented a potential risk to human health or the environment. The findings of the soil and groundwater investigations are summarised below for information:

Phase I and II ESA, and initial groundwater quality monitoring – CRA 2003:

CRA (former company name of GHD) undertook Phase I and II investigations at the entire Kodak facility in June and December 2003. Window sampling was undertaken at 24 locations to 3m bgl, and three cable percussion boreholes were advanced to 11-15m bgl. The analysis results detected elevated concentrations of semi-volatile organic compounds (SVOCs) across the whole site, and elevated concentrations of total petroleum hydrocarbons (TPH) were also detected as diesel range organics in the western section of the site close to existing fuel tanks.

An initial round of groundwater monitoring was undertaken during the Phase II investigation, and samples were collected from seven shallow monitoring wells and two deep process abstraction wells across the facility. The results of laboratory analysis detected elevated concentrations of boron, manganese, calcium and magnesium above their associated DWQS, and elevated levels of aluminium above its EQS. TPH was also detected as diesel range organics in three of the shallow wells with a maximum concentration of 337 µg/l, but no GAC were available for comparison. No volatile organic compounds (VOCs) or SVOCs were detected in the any of the samples.

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?

Phase II contamination investigation – Geotechnical Environmental Associates (GEA) 2006:

A Phase II investigation at the wider Kodak facility was undertaken by GEA involving the advancement of 20 window sampling boreholes to 3m bgl, groundwater sampling at one location and a soil vapour survey at 15 locations. The resulting contamination investigation report was issued in March 2006.

Soil samples were analysed for a suite of metals, sulphate, TPH, polycyclic aromatic hydrocarbons (PAH) and total organic carbon (TOC). The soil vapour survey involved the on-site analysis of samples for VOCs with a photo-ionisation detector (PID), and the concentrations detected ranged from 1.2-13.2 ppm. The results of laboratory analysis indicated that none of the soil samples exceeded relevant commercial and industrial soil GAC.

Phase II ESA – CRA 2006:

A Phase II investigation was undertaken at the entire Kodak facility by CRA in June and August 2006 to assess shallow made ground soil conditions in areas identified as a potential risk during previous investigations. A total of 62 boreholes and 14 trial pits were excavated to a maximum of 2.5m bgl, where the natural London Clay deposits were encountered. The soil samples were analysed for a suite of metals, hydrocarbon and benzene, toluene, ethylbenzene and xylenes (BTEX) compounds, VOCs and SVOCs.

The results from the laboratory analysis detected elevated concentrations of a number of parameters above their respective GAC for commercial/industrial land use; with lead being found in two locations, TPH in four locations, and a SVOC (benzo(a)pyrene) in four locations. Black staining with no odour was also found at four locations within the clay deposits. These locations were predominantly in the south-western area and in the south-east portion of the facility, which has since been divested.

Site validation assessment – CRA 2008:

Following extensive site-wide demolition and redevelopment works in 2006 and 2007, a site validation assessment of the entire Kodak facility was undertaken in 2008 by CRA. A total of 503 soil samples were analysed for a suite of metals, hydrocarbons, BTEX, VOCs, SVOCs, PCBs, inorganics and tentatively identified compounds. The results of the laboratory analysis detected a SVOC (acenaphthylene) and lead across the facility, including some hotspots where the detected concentrations exceeded their relevant GACs. However, following statistical analysis it was concluded that none of the elevated SVOC detections were significant and only six of the elevated lead detections were significant. Three of these locations were in the south-eastern area of the wider facility, which has since been divested, and the additional three in the west north-west of the wider facility.

Groundwater quality monitoring – CRA 2004 to 2011:

An additional seven round of groundwater monitoring at the wider Kodak facility were undertaken by CRA between 2004 and 2011. The monitoring rounds involved the sampling of up to seven shallow monitoring wells and two deep process abstraction wells across the facility. Although none of the monitored wells fall within the permitted area, it is considered that the groundwater under the permitted area is in continuity with the rest of the wider Kodak facility.

The groundwater samples were analysed for a suite of metals, pH, cyanides, TPH, VOCs and SVOCs. Throughout all monitoring rounds, boron and manganese concentrations were consistently detected above their respective DWQS criteria. In 2011, a SVOC (bis(2-ethylhexyl)phthalate) was detected across the main site above both its associated EQS and WHO Health Criteria (there is no DWQS for this compound). No other parameters were detected above their associated GACS.

An environmental site investigation was carried out in 2016 and additional groundwater monitoring from 2012 to 2017. The results of these soil and groundwater investigations are summarised in Section 9 Reference data and remediation.

Surrender SCR Evaluation Template

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

8.0 Decommissioning and removal of pollution risk

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?

The applicant submitted the report 'Surrender Site Condition Report, GHD. Report for Kodak Alaris Ltd – 934628-RPT-4 rev.1 dated February 2017' to support their application the surrender permit EPR/KP3931NL. Environmental Permit EPR/KP3931NL is being surrendered due to the operator entering into a redevelopment agreement with Land Securities to redevelop the land of the wider Kodak facility. The entire site is the subject of an outline planning application (reference P/2165/15), which was approved in November 2015, for the demolition of the existing buildings and structures, and phased mixed-use redevelopment comprising of residential, student accommodation, employment, community, education and retail uses together with supporting social, transportation and amenity related infrastructure.

Operations at the site ceased in November 2016, and decommissioning began for all manufacturing and utilities operations. All hazardous materials were removed from the site and all equipment, vessels, tanks, pipework, bunds and sumps were inspected and cleaned. The decommissioning and shutdown programme was completed at the end of February 2017.

The Site Closure Plant for the site is included in Appendix C1 of the Surrender Report, and summarises the methodology and process for completion of the decommissioning works. A risk assessment and method statement were prepared for each decommissioning task, and these identified mitigation measures to ensure the condition of the land at the site would not be impacted by the release of pollutants. For example, these documents highlighted if there was a high risk of residual contaminants in the equipment and identified an appropriate decommissioning method and the need for spill kits and/or containment to be present as a precaution. The risk assessments and method statements from the decommissioning and shutdown programme are included in Appendix C2 of the Surrender Report.

Following completion of the tasks required to remove environmental hazards, decommissioning reports were prepared and these have been included in Appendix C3 of the Surrender Report. Additional evidence of decommissioning activities, including documentation and certification from contractors, have been provided in Appendix C4 of the Surrender Report.

Stack combustion residue:

Combustion residue was removed from the interior of all the stacks, with the exception of the west flue of the 64m stack. This stack is not to be demolished, in accordance with the planning consent granted in 2015, and to remove the residue (estimated <50kg) would have entailed cutting away a section of the structure. Therefore due to the minor volume of residue, the decision was made to defer this task for completion as part of the wider Kodak facility demolition. In support of this decision, the residue was sampled and the results showed that the main constituent was iron and lower levels of other heavy metals (concentrations <0.5%). The laboratory certificates from the analysis were included in the Surrender Report in Appendix C4.

Boiler House sumps – Sump No.4:

The Boiler House was constructed in the 1930s for plant and equipment associated with coal fired boilers, and featured a tunnel in the basement that housed an ash transport system. In the 1960s coal ceased to be used and the boilers were converted to heavy fuel oil (HFO) operation. The basement was repurposed to house HFO and gas oil fuel distribution equipment along with boiler feed water pumps. The ash transport conveyor was removed, and the tunnel was subsequently used as an access route for personnel for the installation of cableways and to locate condensate recovery equipment and pipework. There were several sumps located in the basement and one location in the tunnel (Sump No.4), which were known to be associated with historical operations. No spills have occurred in the vicinity of the sumps during the lifetime of the permit.

8.0 Decommissioning and removal of pollution risk

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?

During the decommissioning process all the sumps were cleaned out and checked, and it was found that the base of Sump No.4 was not thought to be in good integrity due to the presence of water ingress. The potential for ground pollution associated with this sump is considered to be low for the following reasons:

- Sump No.4 is located up gradient of the other sumps under the boiler plant.*
- The sump was not related to the storage of contaminated ash and so is unlikely to have been a source for uncontained polluting materials. Any contamination present from this would have most likely been historical and prior to the permitted activities.*
- The HFO and gas oil fuel distribution equipment housed in the basement was not in the vicinity of Sump No.4.*
- There have been no fuel line leakages or fuel spills in the vicinity of this sump during the lifetime of the permit.*
- The base of the sump is situated within London Clay, which would have provided some protection against migration of contaminants (if present).*

It is therefore considered that any contamination present is historical and prior to the permitted activities. During the lifetime of the permit the basement sumps were used primarily for the collection of leak-off water from boiler feed water pump glands, which was then pumped out periodically. Sump No.4 was not used at all as part of the permitted activities. Any historical contamination (if present) will be addressed during the demolition and remediation of the wider Kodak facility, and to the standards detailed in the Remediation Strategy submitted to the local council as part of the planning application in 2015.

Foul drain S1:

The foul drain designated as S1 on the site plant received all of the liquid effluent from the operation of the W9 reverse osmosis plant, which fell into three categories:

- 1. Sodium hydroxide solution (32% concentration) used for regeneration of the de-ionisation columns. Annual consumption was typically about 25 tonnes per year.*
- 2. Hydrochloric acid (36% concentration) used for regeneration of the de-ionisation columns. Annual consumption was approximately 25 tonnes per year.*
- 3. Water rejected from the reverse osmosis process. The average volume of this stream was 50,000 tonnes per year. The reverse osmosis supply water was sourced from the site's groundwater abstraction points and from the mains water supply.*

The sodium hydroxide and hydrochloric acid solutions were pre-treated in an effluent treatment tank prior to release to the foul drain. The purpose of this tank was to mix the two effluent streams to allow them to undergo a chemical neutralisation reaction before release. A pH meter on the process prevented the release of un-neutralised effluent and under normal operational conditions the risk of pollution to drain S1 was low as the effluent would have comprised of 1,000-parts reverse osmosis reject water to 1-part neutralised acid/caustic solution. Even on the occasions when the neutralisation process failed (see Section 6 above for the two recorded incidents), the pollution risk would still have remained low due to the dilution and flushing effect of the reverse osmosis reject water as this would have resulted in an effluent comprising 1,000-parts reverse osmosis reject water to 1-part dilute acid or caustic solution.

The inspecting officer has verified that the decommissioning is complete and all potential pollution risks have been removed from the site.

9.0 Reference data and remediation (where relevant)

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

No baseline data was required for the original determination in 2006, and no soil, gas and water quality monitoring was undertaken at the permitted site during its operational phase. Therefore the Surrender Report has been based upon environmental management system (EMS) reporting, plant inspection and maintenance records and decommissioning reports.

However, there has been an environmental site investigation and groundwater monitoring carried out for the wider Kodak facility. The results of which are summarised below for information:

Environmental Site Investigation, GHD 2016:

An environmental site investigation report was prepared in July 2017 by GHD to assist with the decommissioning of the wider Kodak facility. As part of this investigation five boreholes within the permitted area were advanced to 3m bgl. No visual or olfactory evidence of contamination was found in these boreholes. Two boreholes were found to contain concentrations of metals above the relevant human health GAC; these were for beryllium in one of the boreholes, and beryllium and lead in the other borehole. Asbestos was also detected in one of the boreholes. These boreholes were located in the north and south of the permitted area. These contaminants are not considered to be potentially polluting substances associated with the operations at the site.

The borehole and monitoring well locations, borehole logs, laboratory data and photographic records of soil arisings are provided in Appendix B7 of the Surrender Report.

Additional groundwater monitoring – 2012 to 2017:

Additional groundwater monitoring rounds were undertaken at the wider Kodak facility from 2012 to 2017, with the final round being carried out on 24th January 2017. These involved the monitoring of six boreholes, and the subsequent laboratory analysis for VOCs, SVOCs and metals. VOCs and SVOCs have not been detected in the groundwater samples above 50 ppb and 100 ppb respectively, and detections of metals have been generally consistent with the results of the prior monitoring rounds from 2004 to 2011. The most recent groundwater monitoring results are included as Appendix B8 of the Surrender Report.

10.0 Statement of site condition

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?

The Surrender Report contained details of EMS reporting, plant inspection and maintenance records and decommissioning reports.

The Surrender Report identifies any potential historical contamination at the site, and also assesses the potential for contamination (considered to be low risk). Any historical contamination (if present) will be remediated under the planning regime during the redevelopment of the wider Kodak facility (planning reference P/2165/15) to the standards outlined in the Remediation Strategy and subject to planning conditions.

A final site visit was undertaken on 23rd February 2017 by the inspecting officer, and it was confirmed that the decommissioning is complete and all potential pollution risks have been removed from the site.

The Environment Agency confirms that the permitted Harrow Combined Heat and Power installation has been returned to a satisfactory state.

Any historical contamination (if present) will be addressed during demolition and remediation of the wider Kodak facility, to the standards detailed in the Remediation Strategy which was submitted to Harrow Borough Council with the Planning Application in 2015. In addition, the base of the sump is situated within London Clay, which would provide some protection against vertical migration of contaminants to the Secondary and Principal aquifers. As no site investigation fully characterises a site and not all of the site area was accessible during the investigations to date, a site investigation may be required to establish ground conditions as part of the redevelopment which may indicate that remediation may be required.

Surrender SCR decision summary	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	✓
Date and name of reviewers: Kirsty Hobbs (NPS – Permitting Officer) – 16/05/2017 Theresa Cory (GW&CL – Technical Specialist) – 21/06/2017	