

Our ref: R1742B-L120417
Your ref: WA/2017/123424/03-L01

13th April 2017

Miss Sarah Green
by e-mail: planning_TMH@environment-agency.gov.uk

Dear Sarah

Upper Heyford – Discharge of Condition 25 (verification report) of 10/01642/OUT

Following submission of our recent letter (R1742b-L070317) to address outstanding comments on the submitted Dorchester Phase 1b: Area 2 Remediation Earthworks Completion Report (ref. R1742-R10-v2, February 2016), further correspondence has been received within your letter dated 5th April 2017.

Your letter firstly makes comment that there are a number of inconsistencies within the details you have reviewed and that you have no record of being sent a copy of the SGP Remediation Strategy dated May 2014 (ref. R1742-R01-v3).

SGP acknowledge this and confirm that whilst we are in receipt of correspondence between the EA and Cherwell District Council (ref. WA/2012/113687/01-L01) confirming receipt of the superseded Waterman's Strategy, no correspondence has been made available to acknowledge receipt of the SGP Strategy by the EA from CDC. I enclose a copy of the SGP Remediation Strategy as requested with a copy of correspondence received from CDC's Environmental Protection Officer approving the report.

The SGP remedial strategy was produced for contractual issues in order to remove obsolete references to the consultants and contractor, and irrelevant geotechnical details included in the approved Waterman Strategy. The SGP strategy embodied all technical details concerning contamination remediation standards and verification that were included in the Waterman Strategy. Waterman (Section 5) referred to the removal of LNAPL contamination where encountered within excavations and if required from specific LNAPL extraction wells. SGP included this remedial requirement within the revised Strategy (Section 4.6.8) which was worded as follows:

Assuming that no significant groundwater contamination is identified, specific measures to remediate the groundwater on the site are not required at this time. Any measurable occurrences of free phase hydrocarbon will be removed from the water table by skimming or absorbents as appropriate to the extent feasible.

During the removal and remediation of UG-NSA-1-3, SGP carried out a round of groundwater monitoring within BH-NSA-06 and recorded the presence of LNAPL. A sample of the LNAPL was collected and scheduled for oil fingerprint analysis which confirmed a weathered heavy fuel oil with characteristics of low mobility, low solubility and low volatility.

The assessed information concluded that LNAPL remains in-situ undergoing natural attenuation as evident by the laboratory testing (weathered heavy oil). Removal of LNAPL from the borehole was considered impracticable due to the limited volume present and negligible risk to off-site receptors. It was concluded that recovery of LNAPL from the bedrock in the vicinity of BH-NSA-06 would not be practicable due to the dissemination within fine rock fractures and from the evidence of mobility with respect to any migration back into the UG-NSA-1-3 excavation void and therefore removal in accordance with the Strategy would not be required following further assessment.



Detailed Explanation: In the Waterman Remediation Strategy of September 2012 (item 4.1 Tank removal validation), it is stated that:

'In the unlikely event that gross contamination remained with the bedrock, an assessment of the risks posed on the practicalities of remediation would be carried out. An appropriate approach would then be agreed with the regulators.'

Gross contamination was not present at UST-NSA-01-03 following remediation. All significant contamination (see R1742-R10-v2, Section 3.2.4) was removed from these USTs during remediation, and verification testing of the excavation sides demonstrated compliance with the risk-based remedial standards (derived from the Waterman controlled risk assessment) approved by the EA. Following remedial earthworks, examination of the groundwater surface did not show any reversed migration of fuel oil from the bedrock back into the excavation void under a temporarily reversed groundwater gradient. Therefore, no further remediation was required, and the source was declared to have been remediated in accordance with the Remedial Strategy.

There was never any explicit or implicit requirement to remediate fuel oil at BH-NSA-06 in documentation between Waterman and EA seen by SGP. It was explicitly stated that contamination within the bedrock would not be chased out unless risk assessment demonstrated this to be necessary. All emphasis was placed on remediation of the UST sources.

SGP acknowledge that the EA agree that migration of residual contamination is not taking place and whilst low level hydrocarbon concentrations were reported within the groundwater at downgradient borehole BH-NSA-43 (max aliphatic C12-C16 at 0.422 mg/l) these are not typical of the dominant heavy end fractions associated with free product of a heavy fuel as reported within BH-NSA-6 and are likely to be attributed to breakdown products confirming weathering and degradation of the LNAPL.

SGP conclude that remediation works have been completed in accordance with the Strategy (both Watermans and SGP) with the removal of residual contamination associated with UST-NSA-01-03 and the verification testing confirming the efficient completion of works. A minor volume of LNAPL (2cm thick layer) was recorded within BH-NSA-6 which was not recorded within the nearby downgradient boreholes, the limited presence of LNAPL does not constitute as 'gross contamination remaining within the bedrock'. There was no requirement within the Strategies (both Waterman and SGP) to chase out residual contamination within the bedrock and that should gross contamination remain within the bedrock then an assessment of the risks posed and the practicalities of remediation would be carried out. Whilst gross contamination has not been recorded, SGP provided additional assessment of the presence of LNAPL as reported within our earlier correspondence (ref. R1742b-L070317) which concluded that recovery of the LNAPL would not be feasible and that risk to controlled waters is negligible.

I trust that the addition of the SGP Remediation Strategy (attached to this correspondence) and further explanation are sufficient to address your outstanding comments on this matter.

Yours sincerely
for: Smith Grant LLP

D Wayland BSc MSc MCIWEM
Senior Consultant

Attached: R1742-R01-v3 (SGP Remediation Strategy)

From: "Tony Smith" <tony.smith@smithgrant.co.uk>
To: dan.wayland@smithgrant.co.uk
Date sent: Thu, 27 Nov 2014 13:02:09 -0000
Subject: (Fwd) Upper Heyford - NSA remediation, Phases 1A and B1&2A earthworks completion reports
Send reply to: tony.smith@smithgrant.co.uk
Priority: normal

----- Forwarded message follows -----

Priority: normal
From: "Sean Gregory" <Sean.Gregory@Cherwell-DC.gov.uk>
To: <tony.smith@smithgrant.co.uk>
Copies to: "Andrew Lewis" <Andrew.Lewis@Cherwell-DC.gov.uk>
Subject: Upper Heyford - NSA remediation, Phases 1A and B1&2A earthworks completion reports
Date sent: Wed, 1 Oct 2014 11:49:55 +0000

Hi Tony,

Thankyou for sending the following reports through earlier this year:

Remediation Strategy (reference R1742-R01-v3, dated May 2014)
Dorchester Phase 1A Remediation Earthworks Completion Report (reference R1742-R02-v2, dated March 2014)
Bovis Phase B1 and B2A Remediation Earthworks Completion Report (reference R1742-R03-v1, dated March 2014)

Apologies for the delayed comments regarding these reports. I can confirm that your remediation strategy is acceptable for my purposes relating to the risk assessment to human health. I would note that I'd like to see a minimum of three validation samples for the verification of clean cover where the volume of soil being considered is below the proposed sampling frequency i.e. 1 per 500m³. It is noted that the sampling frequencies reported in the remediation earthworks completion reports for Dorchester Phase 1 and Bovis Phases B1&B2A comply with this already.

I can confirm that the Dorchester Phase 1A Earthworks completion report is acceptable in line with your remediation strategy. It is noted that there is still some capping to be undertaken and this will be completed using topsoils already validated for the site. To this end, I would like an update on where these works are presently and to be sent a copy of the latest material management plan for the site for my records.

I can confirm that the findings of the Bovis Phase 1 and 2B earthworks completion report is acceptable and I look forward to receiving the further investigation information relating to plots 28 and 29. It is noted that the C4SL's have been used as a comparison reference in this report. This is acceptable for a reference point isn't accepted as a suitable risk assessment validation criteria for planning purposes. Can you provide me with an update on where we are with the works on site and the further assessment aspects of the remediation completion.

It would be useful to get an update on the works on site and get a copy of the materials management plan for the site for my reference.

I trust this is satisfactory for your requirements at this stage.

Best regards,

Sean

Sean Gregory
Environmental Protection Officer
Cherwell District Council
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mail to: sean.gregory@cherwell-dc.gov.uk
www.cherwell.gov.uk

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