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Timescales and Costs – Remediation Strategy Scunthorpe

The provision of this letter follows the site meeting which took place at the Koppers UK Ltd Scunthorpe site in September 2015. The information provided below represents the timescales and range of costs associated with the remedial strategy for the facility at Dawes lane, Scunthorpe.

The remediation strategy (ref: RUK16-21865_Scunthorpe Lagoon Assessment and Remediation Strategy 2015) should be read in conjunction with this accompanying letter.

Timescales

The timescales detailed in Table 1 below are provided based on the remediation of both the lagoon and landfill areas, as well as the additional drilling and removal of DNAPL in the area to the east of the lagoon.

The timescales assume that the treatment and discharge of the lagoon water will be conducted by the Remediation Contractor (under a bespoke discharge consent), rather than through the operational discharge consent which has recently been agreed by the site with the regulators. If the operational consent is used to reduce the water levels in the lagoon, it is likely that the timescales outlined in Table 1 will increase.

Should the Waste Management Licence associated with the landfill be surrendered following the remedial works, it is possible that the Regulators may require additional monitoring for a period of time e.g. 6 – 12 months, in order to confirm that the remediated ground is not producing any elevated gas concentrations. An allowance for additional gas monitoring has not been allocated within the above timescales, and discussions would need to take place with the Regulators in that eventuality.

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Ref UK16-21865 Rem Strat

Table 1: Remedial Works Timescales

Activity	Timescales (months)
Final remediation design, field trial and pilot testing, regulator communications	Month 0 – 6
Remediation of landfill and lagoon works	Month 6 – 14/16
Additional drilling (DNAPL and deep Mudstone strata)	Month 14 – 16
Validation testing, reporting and regulatory agreement of works	Month 16 – 18
<p>Notes:</p> <ol style="list-style-type: none"> 1. The timescales are based on the entire remedial strategy being undertaken. 2. A more detailed breakdown of specific timing elements will be provided in the method statement prior to works commencing. 3. The timescales do not allow for additional remedial works to be completed. The timescales will be further clarified following the remedial trials. 	

Costs

The costs for undertaking the remedial works as outlined in the scope of works above are currently provided as a range of **£2,295,000 – £2,660,000**. This sum is inclusive of all anticipated professional fees and expenses (except any waste arisings disposal) in accordance with the scope outlined above, but exclusive of value added tax (VAT) at the prevailing rate.

The costs will be further refined once remedial trials have been undertaken.

Note: Where a range of costs is given below, those provided by preferred contractor 1 are presented on the left hand side, and those provided by preferred contractor 2 are presented on the right hand side, hence why the costs associated with Landfill Stabilisation (Area B) are reversed. The range of costs is based on initial estimates compiled by the preferred remediation contractors (before remedial trials have been conducted).

Table 2: Remedial Works Costs

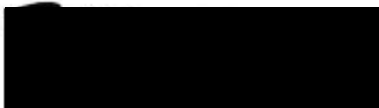
Activity	Range of Costs (£)
Remedial Works	
Project Set-up, Enabling & Management (further investigation, pilot trials on materials, health and safety, environmental management, licensing of works)	115,000 – 260,000
Preliminaries and Site Set-up (project management, mobilisation to site, site preparation and installation of equipment, further treatment trials if necessary)	275,000 – 460,000
Lagoon Dewatering (treatment of lagoon water and discharge off-site, dewatering of excavations)	105,000 – 170,000
Lagoon Stabilisation (Areas A & C – 17,000m ³) (ex-situ handling and treatment of lagoon sludge material, neutralisation and stabilisation using suitable materials)	725,000 – 760,000
Landfill Stabilisation (Area B – 10,500m ³) (ex-situ handling and treatment of landfill material, neutralisation and stabilisation using suitable materials)	630,000 – 385,000

Activity	Range of Costs (£)
Installation of Surface Water Drainage, Capping of Remediated Area (installation of drainage horizon, subsoil and topsoil materials, installation of land drainage)	175,000 – 260,000
Material Shortfall (import and replace recycled aggregate to make up backfill deficit)	30,000 – 125,000
Boreholes (installation of DNAPL recovery wells, site visits for removal of DNAPL, installation of boreholes into deeper Mudstone strata including ENVIRON supervision, monitoring of Mudstone boreholes)	45,000
Ramboll Environ Supervision of Works (initial set-up, engineer/consultant on-site to oversee works, collect validation samples where necessary, chemical analysis of validation samples, equipment hire, travel expenses)	170,000
Sub Total	2,270,000 – 2,635,000
Reporting and Meetings	
Report Preparation and Production (Validation report, including figures, borehole logs, evaluation of findings, chemical analysis)	10,000
Regulatory Liaison and Meetings (Preparation for and attendance of meetings with Environment Agency, Local Authority, Client, site visits)	15,000
Total Remediation Cost (exc. VAT)	£2,295,000 – £2,660,000
Disposal of Hazardous Materials (A volume of 2000m ³ that will be unavailable for treatment has been assumed. Based on the chemical concentrations present it is assumed that this material would be disposed as hazardous waste) Note: This cost is not currently included in the remediation	150,000
Remediation of Wider Site Area (main Permitted area and remainder of site) (costs estimated based on hotspot clean-up of contamination, permit surrender support, provision of a decommissioning plan, health and safety support). The extent of the remedial works required would be further defined following discussions with the Regulators regarding the surrender of the Environmental Permit. More / less remediation may be required based on the Regulator's stance on the contamination present).	300,000 – 400,000
Notes: 1. The final cost of the works will be provided once full remedial trials have been undertaken and all techniques to be used and volumes to be remediated have been decided. The selected remediation contractor will provide one cost for the works in full. 2. Ramboll Environ supervision is based on site attendance for 2 days per week for the duration of the works i.e. 78 weeks. This is to facilitate appropriate project management and suitable validation sampling. Should the timescales of the works be altered or further supervision be required the cost of supervision may need amendment. 3. Validation sample lab analysis costs are based on a standard turnaround of 10 days.	

Activity	Range of Costs (£)
<p>4. Asbestos testing allows for asbestos screen analysis only. Should quantification be needed for disposal services this would be charged at £125 per sample.</p> <p>5. No provision for soil or groundwater disposal has been accounted for within the above costings (outside the current remediation strategy). Any additional disposal costs would be communicated with the client prior to removal being completed.</p> <p>6. The costs do not include for any further delineation of any contamination that is found, or for remediation outside the scope discussed in the Remediation Strategy document.</p> <p>7. An allowance has been made for Ramboll Environ to prepare for and attend four (4) 1-day meetings with Regulators and the Client. Should there be additional meeting/extended conference calls, these would be charged in addition at Ramboll Environ standard rates.</p>	

Should you require any further information please do not hesitate to contact Steve or myself.

Yours sincerely



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