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|----------------------|--------------------|---------------------|---|-----------------------------|----------------------|-----------------|-----------------------------------|
| Business Unit | Rock & Alluvium | Site Address | Bourne Estate, Portpool Lane, Holborn, London, EC1N 7SD | Principal Contractor | Higgins Construction | Con. No: | 13_0335 |
| HSE Assessor | Sally Lloyd-Raines | Operation | CFA PILING | Date: | 02/05/2014 | Ref. No: | Revision 35 Issued 16/04/14 |

Notes: If any of the following situations apply, append the relevant Risk Assessment.

Adjacent to Rail: No

Contaminated Ground: No

| HAZARDS | PERSONS AFFECTED | RISK | | | CONTROL MEASURES (List control measures that are provided and those required) | RISK | | |
|---|------------------|------|---|---|--|------|---|---|
| | | L | S | R | | L | S | R |
| Site Specific Hazards: (additional site specific hazards identified below, if any) | | | | | | | | |
| No Additional Site Specific Hazards identified | | | | | | | | |
| <i>Please see next page</i> | | | | | | | | |

| Section | HAZARDS | PERSONS AFFECTED | RISK | | | CONTROL MEASURES (List control measures that are provided and those required) | RISK | | |
|---------|--|--|------|---|---|--|------|---|---|
| | | | L | S | R | | L | S | R |
| 1 | Site Access / Egress | Piling Crew, visitors and other operatives on site | 3 | 4 | H | HIGGINS CONSTRUCTION to erect suitable pedestrian barriers to reduce the interaction between vehicles / plant and any site operatives and/or the general public. Employees to conform to site segregation rules and not block walkways. R&A operatives to Supervise and direct the piling rig and piling equipment delivery vehicles across public footpaths and access routes. HIGGINS CONSTRUCTION to provide security at site entrance to prevent unauthorised persons gaining access to the site and supervise delivery vehicles entering and leaving the site. Security Container to be positioned away from traffic routes. HS&E Standard H01 is to be complied with in full. | 1 | 4 | L |
| 2 | Congested Working | Piling Crew, visitors and other operatives on site | 2 | 4 | M | Equipment that is not required for current piling operations is to be stored outside of the piling area. Where spoil is to be loaded away, this is to be moved away from the piling rig before loading vehicles. | 1 | 4 | L |
| 3 | Use of Mobile phones or other mobile devices causing a distraction from site hazards | Piling Crew, visitors and other operatives on site | 2 | 2 | M | Foreman who uses mobile phone are only to do so in a place of safety and when safe to do so. Mobile phones must not be used when engaged in activities where distraction could pose a risk, e.g. rig manoeuvring. When using a Mobile phone, all operatives should move to a place of safety, such as a designated area. | 1 | 2 | L |
| 4 | Storage and Security | Piling Crew, visitors and other operatives on site | 3 | 3 | M | R&A operatives to stack piling equipment & materials in such a way as to not become unstable when moved / used. HIGGINS CONSTRUCTION to provide a secure site with lockable gate and provide, erect & maintain boundary fencing to prevent unauthorised access at all times. HIGGINS CONSTRUCTION to provide site security to guard against loss/theft of property and machinery. HS&E Standard S01 is to be complied with in full. | 2 | 3 | L |

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|---------|--|--|------|---|---|---|------|---|---|
| | | | L | S | R | | L | S | R |
| 5 | Striking services, electric cables, gas mains, telecoms, water supply, drainage. | Piling crew, visitors and other operatives on site Nearby residents if gas main | 2 | 4 | H | HIGGINS CONSTRUCTION to review service drawings HIGGINS CONSTRUCTION to scan for, locate, expose, divert, protect as necessary all existing underground services prior to the start of any piling operations and issue "Permit to Dig". R&A to notify HIGGINS CONSTRUCTION of any pressure loss / anomalies whilst drilling / injecting piles. All works to cease if electric cable strike suspected – Rig operator to stay in cab or Jump well clear, | 1 | 4 | L |
| 6 | Slips, trips and falls | Piling Crew, visitors and other operatives on site | 2 | 3 | L | Site and all walkways to be kept clear and tidy, with particular attention to designated pedestrian routes. Materials to be stacked and stored properly. HIGGINS CONSTRUCTION to provide background safety lighting in periods of darkness in areas used by R&A, including walkways and access routes | 1 | 3 | L |
| 7 | Drowning when working near deep water | Piling Crew, visitors and other operatives on site | 2 | 4 | H | HIGGINS CONSTRUCTION to provide, install and maintain fencing and/or guard rails to prevent R&A operatives from falling in to adjacent water. HIGGINS CONSTRUCTION to provide life jackets and rescue plan. HS&E Standard W04 is to be complied with in full. | 1 | 4 | L |
| 8 | Electrocution | Piling Crew | 3 | 4 | H | All portable electrical equipment to be a maximum voltage of 110volts dc. All portable electrical equipment to be checked before it is used and thoroughly inspected every 3 months by a competent person. PAT testing is required see MS/047 for colour coding test schedule. Damaged / Faulty equipment to be removed from use. HS&E Standard E01 is to be complied with in full. | 1 | 4 | L |

| Section | HAZARDS | PERSONS AFFECTED | RISK | | | CONTROL MEASURES (List control measures that are provided and those required) | RISK | | |
|---------|--|--|------|---|---|--|------|---|---|
| | | | L | S | R | | L | S | R |
| 9 | <p>Lifting operations. Falling plant and materials, Collisions with plant, persons and Overhead services Failure of lifting appliance</p> | Piling Crew, visitors and other operatives on site | 3 | 4 | H | <p>Lift Plan to be followed at all times (PMP Section 3) Only Fully Trained Banksman / Slingers are to control lifting operations on site and ensure that the loads are properly slung prior to any lift commencing.</p> <p>Banksmen to ensure that the lift path / route is clear of other site operatives and overhead services in particular H.V Cables and overhead pipe racks. Whilst lifting augers (during rigging), ensure that the 'female' coupling is facing the rig and the lift path is clear; do not pick up augers when 'male' coupling is facing the rig.</p> <p>Plant Manager to ensure that all rigs receive their 12-monthly thorough examination and that any defects are corrected Foreman to ensure rig is inspected after rigging and LOLER register completed.</p> <p>R&A foreman is to ensure that all Lifting Accessories have been given an examination every 6 months and certificates available.</p> <p>Banksman / Slinger to assess all loads before they are lifted to ensure that the Safe Working Load of the lifting equipment is not exceeded at any point during the lift</p> <p>Damaged slings to be cut-up and not used/discarded HS&E Standard L02 is to be complied with in full.</p> | 1 | 4 | L |
| 10 | <p>Use of attended excavator Accidental unlatching of bucket using "quick hitch " attachment mechanism</p> | Piling Crew, visitors and other operatives on site | 2 | 4 | H | <p>Foreman to check that bucket and excavator are a "matching pair" (many systems are in use). All excavators' operators must have received training on the type of quick hitch being used.</p> <p>Driver must be competent to operate system supplied, by demonstration if required.</p> <p>Where a locking pin is specified in the system, it must be in fitted in the correct place by the excavator Operator (R&A site team to check). HS&E Standard P01 is to be complied with in full.</p> | 1 | 4 | L |

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|---------|---|--|------|---|---|---|------|---|---|
| | | | L | S | R | | L | S | R |
| 11 | Plant / Vehicle operation Contact between plant and persons such as to cause injury. | Piling Crew, visitors and other operatives on site | 4 | 4 | H | <p>HIGGINS CONSTRUCTION to erect suitable signage and barriers to prevent any unauthorised site operatives gaining access into the piling area. R&A to cease all piling operations if any unauthorised persons enter the piling area</p> <p>Foreman to check all plant, machinery and equipment to ensure that guards are secured in place to prevent any physical contact with moving parts.</p> <p>HIGGINS CONSTRUCTION or R&A to design platform, HIGGINS CONSTRUCTION to Install & Maintain Piling Platforms to safely support bearing pressure of piling rig in it's Working Mode.</p> <p>The Working Platform Certificate provided by Rock & Alluvium is to be signed by the Principal Contractor and/or the Planning Supervisor and returned prior to Piling Operations commencing; confirming the design is in order and the platform construction is in accordance with the design.</p> <p>All excavations to remove existing foundations / underground obstructions should be backfilled with suitable material and compacted in accordance with the design.</p> <p>Rock & Alluvium personnel are not permitted to unsecure any load, handle or unfold concrete chutes of concrete delivery vehicles.</p> <p>HS&E Standard P01 is to be complied with in full.</p> | 1 | 4 | L |

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|---------|--|--|------|---|---|--|------|---|---|
| | | | L | S | R | | L | S | R |
| 12 | <p>Use of Abrasive Wheel Cutter (Stihl Saw).</p> <p>Cutting Rebar only</p> | Piling Crew, visitors and other operatives on site | 2 | 2 | M | <p>Only persons holding a Competence Certificate to use saw or change wheel.</p> <p>Additional PPE. Goggles to BS EN 166 B must be worn. Suitable gloves and ear protection to be worn.</p> <p>Use of this type of tool is to be limited to 1 hour per day. Tools must not to be used near combustible materials. If any fuel spillage on clothing, tool must not to be used.</p> <p>HS&E Standard P01 is to be complied with in full.</p> | 1 | 2 | L |
| 13 | <p>Working at Height (Ladders may be used by fitters)?</p> | Piling Crew, visitors and other operatives on site | 4 | 4 | H | <p>Ladders are not to be used on site, MEWP to be used at all times. If ladder required, it must be Industrial Class 1 EN131 (Blue Label), it must be inspected for damage prior to use, be adequately footed and three points of contact to be maintained at all times.</p> <p>HS&E Standard PW03 is to be complied with in full.</p> | 2 | 4 | M |
| 14 | <p>Loading and off-loading Vehicles</p> | Piling Crew, visitors and other operatives on site | 2 | 2 | M | <p>Lifting chains to be prefixed to Containers. Piling Equipment, Rebar or Cages to be delivered in vehicles with side rails and pre-slung with slings easily accessible from ground level.</p> <p>R&A to use unloading bay when available on site</p> <p>Where possible, items to be slung/un-slung from ground level. Where vehicle's flatbed is to be accessed, use appropriate access point. After slinging load, operative to dismount the vehicle's bed or stand at the headboard. Fall protection must be used.</p> | 1 | 2 | L |

| Section | HAZARDS | PERSONS AFFECTED | RISK | | | CONTROL MEASURES (List control measures that are provided and those required) | RISK | | |
|---------|--|-------------------------------|------|---|---|---|------|---|---|
| | | | L | S | R | | L | S | R |
| 15 | Rig instability / platform failure | Piling crew | 2 | 4 | M | <p>Copy of the working platform certificate to be signed and design must be available on site prior to commencing work.</p> <p>Weekly piling platform inspections must be carried out and the FPS platform certificate is to be signed off weekly by HIGGINS CONSTRUCTION.</p> <p>HIGGINS CONSTRUCTION is responsible for backfilling any areas where obstructions have been removed, it is vital that the area is fully reinstated in accordance with the piling platform design and the platform certificate is to be signed off.</p> | 1 | 4 | L |
| 16 | Auger tip blockage, extracting the augers after boring, pile shaft filled with disturbed material. Bore may become unstable. | Third parties and piling crew | 4 | 4 | H | Pre-charge the concrete line to a maximum of 15bar, if tip has not opened then stop pumping and back pump. Back screw the augers out of the bore until the tip can be accessed, remove reason for blockage. Re-drill pile 100mm beyond its scheduled design depth. All tip blockages shall be recorded. The pump operator and rig operator must maintain eye contact at all times during pre-charging of the augers. | 2 | 4 | M |

| Section | HAZARDS | PERSONS AFFECTED | RISK | | | CONTROL MEASURES (List control measures that are provided and those required) | RISK | | |
|---------|--|--|------|---|---|--|------|---|---|
| | | | L | S | R | | L | S | R |
| 17 | <p>Manual handling muscular-skeletal injuries.</p> <p>Note this applies to levering, pulling lifting and other manual tasks.</p> | Piling Crew, visitors and other operatives on site | 4 | 3 | H | <p>Manual Handling is to be reduced to a minimum by the use of the attendant excavator provided by HIGGINS CONSTRUCTION and R&A Hiab delivery vehicles or other mechanical means.</p> <p>Should the above not be possible;-</p> <p>Heavy loads are to be split into loads that the operative is comfortable with lifting.</p> <p>If this is still not possible;-</p> <p>The loads are to be lifted by multiple operatives ensuring that all operatives are aware what is required of them and that the weight of the item does not exceed the ability of the person lifting.</p> <p>If there are any manual handling tasks, ensure sufficient numbers of operatives are used, to spread the load.</p> <p>Operatives to “walk the route” before they carry any loads to ensure that there are no trip hazards / uneven surfaces / width restrictions / vehicle crossing points that could impede the Manual Handling Operations Muddy and slippery areas are to be avoided where possible.</p> <p>Operatives to wear protective equipment provided by R&A, this includes gloves suitable for the task being undertaken, typically to EN388: 3121.</p> <p>HS&E Standard M01 is to be complied with in full.</p> | 3 | 3 | M |
| 18 | Contact with rotating auger | Piling Crew and other operatives on site | 2 | 4 | M | <p>Guarding to the CFA rig is to be in accordance with the FPS / HSE Guidance on PUWER (Regulations 11 & 12), section 4.1; i.e. the bottom of the guard/gates to be no more than 750mm above ground level and top of the guard to typically be 1.8m from ground level.</p> <p>In accordance with the above guidance (section 3.3) the guard/gates need to be opened to allow the piling rig to achieve its full depth; this is acceptable if the auger rotation stops when anyone has to enter the ‘danger zone’; the banksman <u>must</u> police the area in front of the rig.</p> | 1 | 4 | L |

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| | | | L | S | R | | L | S | R |
| 19 | <p>Control of Substances Hazardous to Health (COSHH), particularly Ready-mixed Concrete.</p> <p>[Full COSHH Assessments available as Separate Document.]</p> <p>Fire risk</p> | Piling Crew, visitors and other operatives on site | 4 | 2 | H | <p><u>Wet Concrete can cause cement burns to the skin</u></p> <p>Operatives to avoid direct contact. PPE listed on COSHH is to be worn. Should any operative come into contact with wet concrete – they should thoroughly wash skin and clothing immediately.</p> <p>Should there be any eye contact with dust / concrete – the affected eye should be thoroughly irrigated with cold clean water preferably a proprietary eyewash solution.</p> <p>Flammable substances (mainly fuels, oils & greases) to be securely stored, particularly during out of hours.</p> <p>HS&E Standard H01 is to be complied with in full</p> | 2 | 2 | L |
| 20 | Noise [Noise Assessments are available for all Piling Plant] | Piling Crew, visitors and other operatives on site and persons working nearby during working day | 4 | 3 | H | <p>R&A operatives are provided with hearing protection and have been instructed they are to be worn when working near piling rig, pump or agitator.</p> <p>Piling rig / equipment is to be kept in good working order.</p> <p>HS&E Standard N01 is to be complied with in full</p> | 2 | 3 | L |
| 21 | Injury from Soil falling from auger flights [Refer to FPS/HSE Guidance on the Guarding and Cleaning of Augers] | Piling Crew, visitors and other operatives on site | 4 | 4 | H | <p>Mechanical Auger cleaner to be used</p> <p>R&A operatives are to ensure that there is no spoil / concrete / debris taken up on the flight.</p> | 1 | 4 | L |
| 22 | Piling Work – Protection of adjacent premises and personnel when working near site boundary | Piling Crew, visitors and other operatives on site MEMBERS OF PUBLIC | 3 | 2 | H | <p>When piling operations are in close proximity to the site boundary, the Principal Contractor is responsible for providing any exclusion/protection measures necessary to protect the general public. HIGGINS CONSTRUCTION to provide, erect & maintain polythene sheeting / debris netting to perimeter walls / fencing to prevent Mud / Concrete / Slurry splashing members of the public; strictly in accordance with FPS / HSE Guidance on PUWER (Regulations 11 & 12), section 4.3 CFA Piling</p> <p>:Exception</p> <p>HS&E Standard S01 is to be complied with in full.</p> | 2 | 2 | L |

| Section | HAZARDS | PERSONS AFFECTED | RISK | | | CONTROL MEASURES (List control measures that are provided and those required) | RISK | | |
|---------|--|--|------|---|---|---|------|---|---|
| | | | L | S | R | | L | S | R |
| 23 | Creation of open bore caused by use of additional bore to park auger string where two diameters being used | Piling Crew, visitors and other operatives on site | 2 | 4 | H | Where a redundant bore is used to park an auger string that is not being used, any empty bores must be covered whilst on site and backfilled before leaving site. The area must be thoroughly checked after the backfilling has been carried out and the area must be left at a similar level to the piling platform to ensure that the empty bore has been suitably filled and not just masked by spoil | 2 | 4 | L |
| 24 | Bursting of concrete hoses and or Hose joints causing damage and injury during concrete pumping | Piling Crew, visitors and other operatives on site | 2 | 3 | M | Hoses to be inspected by pump man daily at start of shift. Damaged sections are to be replaced. All concrete hoses fitted to the mast of the piling rig must have whip checks fitted at all times. Joints to be secured by R Clips or Split Pins. Rig "drop hoses" to be fitted with sleeved hoses for additional protection. Newer sections of hoses are to be used adjacent to the rig and pump. Hose runs to be planned to minimise trafficking over hoses. Hoses to be buried under road. | 1 | 3 | L |
| 25 | Clearing concrete pumping lines and auger at the end of a shift by compressed air. | Piling Crew, visitors and other operatives on site | 2 | 3 | M | All blowing out operations are to be under direct control of a trained Foreman, Foreman to remain at piling rig during procedure, banksman to control the compressor. Rig lines to be blown out away from the perimeter fencing at all times. Foreman to monitor concrete lines as the concrete moves through the lines, when the ball passes the back of the piling rig the air flow should be turned of and surplus air released through the exit valve. All persons not involved in this operation to be kept at a safe distance. Whip-checks to be used at all air hose joints including at both compressor and the blow-out gun. Operator to check adaptors are clear of debris before fitting to hose. Refer to Section 5 of PMP (HS&E-RA-H03-10 Blowing-Out of CFA Piling Rig.) | 1 | 3 | L |

| Section | HAZARDS | PERSONS AFFECTED | RISK | | | CONTROL MEASURES (List control measures that are provided and those required) | RISK | | |
|---------|--|---|------|---|---|---|------|---|---|
| | | | L | S | R | | L | S | R |
| 26 | Dealing with blockages in the concrete pumping lines | Piling Crew, visitors and other operatives on site | 3 | 3 | H | <p>Where the sponge ball will exit other than down the auger, a ball catcher must be fitted to the free end of the hose run.</p> <p>To prevent the hose end “whipping”, it must be restrained by fixing a strop to the pipe and securing it e.g. the excavator lifting point or the rig.</p> <p>Holding the hose down with an excavator bucket is not effective and should not be used as the only means of restraint, although it can be used <u>in addition</u> to the strop.</p> <p>Before releasing a joint, pressure should be released where possible by back-pumping. Eye protection to BS EN 166 B goggles or a full face protection must be worn to protect eyes from injury. Helmet visors are not adequate for this operation.</p> | 2 | 3 | M |
| 27 | Falling from rig mast | Person climbing | 2 | 4 | H | <p>MEWP to be used. Operator to have IPAF or CPCS Card and wear short restraint lanyard</p> <p>Rigs are not to be climbed even if mast has a fixed ladder.</p> | 1 | 4 | L |
| 28 | Fall from tracks. | Person climbing onto/off tracks | 2 | 3 | M | <p>Do not climb tracks unnecessarily.</p> <p>When both climbing and descending, use proper step.</p> | 1 | 3 | L |
| 29 | Steelfixing of rebar cages for piling | Piling Crew, visitors and other operatives on site Steelfixers | 3 | 3 | H | <p>Steel-fixing Area to be demarked off and segregated from trafficked areas.</p> <p>Heavy cages to be prefabricated off-site.</p> <p>Correct lifting ring or secured helical to be used to hoist the cages into the vertical position for insertion into the bore.</p> | 2 | 3 | L |

| Section | HAZARDS | PERSONS AFFECTED | RISK | | | CONTROL MEASURES (List control measures that are provided and those required) | RISK | | |
|--|---|---|------|---|---|--|------|---|---|
| | | | L | S | R | | L | S | R |
| 30 | Use of Mobile Elevated Work Platform (MEWP), Risk of overturning and 'crushing' | Piling Crew, visitors and other operatives on site MEWP operator | 3 | 4 | H | Only person qualified with an IPAF or CPCS certificate are to use MEWP. Full harness with short restrain lanyard to be used and attached to correct attachment point. Only stand on the platform floor, not on the rails. Check for presence of ramps, trenches, slopes, manhole covers, ground obstructions, overhead cables, building projections, vehicles etc. Before travelling MEWP ensure platform is in recommended travel position. Only travel with an appointed banks-man and at correct speed Before raising the boom, check that the machine is level and on firm surface; crush protection not required as there are no 'overhead obstructions'. Do not overload the platform or use it for lifting duties. In the event of rescue of MEWP operator required, trained (IPAF/CPCS) MEWP operator to lower the basket by use of the controls on the body of the plant. HS&E Standard P01 is to be complied with in full. | 2 | 4 | L |
| 31 | Risk of 'falling' into fresh pile | Piling Crew and other operatives on site | 3 | 3 | M | Piling platform to be maintained and cleared of surplus water/slurry by HIGGINS CONSTRUCTION, access to the immediate piling area to be controlled by the piling crew; recently constructed piles to be covered by boards or cones, work to be sequenced to minimise the risk. | 1 | 3 | L |
| 'LIVE RISKS' TO BE RECORDED BELOW | | | | | | | | | |
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| High Risk Operation NO | Temporary Works NO If Yes – refer to HS&E-STD-T01 | The above control measures have been implemented (Original signature required) Workplace Manager Date |
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ENVIRONMENTAL RISK ASSESSMENT

| Section | HAZARDS | ENVIRONMENTAL IMPACT | RISK | | | CONTROL MEASURES | RISK | | |
|---------|--|--|------|---|---|---|------|---|---|
| | | | L | S | R | | L | S | R |
| E1 | | Environmental Noise | 2 | 2 | L | Piling Rig and ancillary equipment is to be kept in good mechanical order. Where damage or wear to silencing system occurs, maintenance to receive priority. | 1 | 2 | L |
| E2 | Ecological damage | Damage to protected trees | 2 | 2 | L | Trees needing protection to be fenced off by HIGGINS CONSTRUCTION with relevant signage. | 1 | 2 | L |
| E3 | Water Pollution | Contamination of watercourse from silt laden groundwater generated by piling process | 3 | 3 | M | HIGGINS CONSTRUCTION to install a protective bund to prevent water/slurry from entering watercourse. | 1 | 3 | L |
| E4 | Air pollution from exhaust gasses | Degeneration of air quality | 2 | 2 | L | Plant to be kept in good mechanical order, machines to be switched off when not in use; avoid long idle times. | 1 | 2 | L |
| E5 | Vandalism of hydrocarbons storage | Ground and water pollution | 3 | 3 | M | All lubricants to be locked in COSHH cage within the container when not in use, overnight and at weekends. Bunded Diesel bowser to be lockable, including lockable hose storage. To be locked outside site hours and when not in use | 1 | 3 | L |
| E6 | Spillage of fuels and oils during recharging | Ground and water pollution | 3 | 3 | M | Fuel only to be stored in lockable bunded bowser or 205 litre (45 gallon) drums on spillage trays. Refuelling to be via siphon delivery hose from rig; engine to be switch off during refuelling. Oil and lubricants to be filled by funnel. Spill Kit to be available in case of spillage. | 2 | 3 | L |
| E7 | Inadequate waste Management | Visual Intrusion of litter | 3 | 1 | L | R&A foreman to ensure that all general rubbish is placed in the skips provided by HIGGINS CONSTRUCTION. HIGGINS CONSTRUCTION to set up, Site Waste Management Plan, and brief to R&A personnel | 1 | 1 | L |

| Section | HAZARDS | ENVIRONMENTAL IMPACT | RISK | | | CONTROL MEASURES | RISK | | |
|--|--|---------------------------------|------|---|---|---|------|---|---|
| | | | L | S | R | | L | S | R |
| E8 | Washing out ready-mixed concrete and clearing out pump and concrete delivery hoses at end of shift | Ground and water contamination. | 3 | 3 | M | The HIGGINS CONSTRUCTION is to construct/provide a lined pit/skip into which ready-mixed concrete trucks can wash off their delivery chutes. HIGGINS CONSTRUCTION or R&A to construct an area of approximately 5m x 8m with heavy gauge visqueen under 300mm of crushed for the pump & agitator set-up; additional use of large drip tray for sensitive sites. | 2 | 3 | L |
| 'LIVE RISKS' TO BE RECORDED BELOW | | | | | | | | | |
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Amendment Log

| Revision | By | Amendment | Date |
|----------|----|---|-------------------------|
| 1 to 28 | WL | Various Revisions | 03-11-08 to 04-08-09 |
| 29 | ND | Various sections re-worded and formatting fixed | 06-11-09 |
| 30 | MG | Revised section 23 blowing out | 14-01-11 |
| 31 | ND | Document Reviewed. Various sections revised. Additional lines added for 'live risks' to be recorded. | 16-05-11 |
| 32 | ND | Document Review | 23-02-12 |
| 33 | ND | Revised section 21 on Open Bores | 04-10-12 |
| 34 | ND | New Section 17 added; following sections renumbered, minor formatting changes. | 25-02-14 |
| 35 | ND | New Section 16 added; following sections renumbered; various sections revised and minor formatting changes. | 16-04-14 |

| RISK RATING = Likelihood (L) x Severity (S) | | HAZARD SEVERITY (S) | | | | |
|--|--|--|---|---|--|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | | Negligible Negligible injury, no absence from work | Slight Minor injury requiring first aid treatment | Moderate Injury leading to a lost time accident | High Involving a single persons serious injury/death | Very High Multiple serious injuries/death |
| 1 | Very Unlikely A freak combination of factors would be required for an incident / accident to result | LOW | LOW | LOW | LOW | LOW |
| 2 | Unlikely A rare combination of factors would be required for an incident /accident to result | LOW | LOW | LOW | MEDIUM | MEDIUM |
| 3 | Possible Could happen when accidental factors are present but otherwise unlikely | LOW | LOW | MEDIUM | HIGH | HIGH |
| 4 | Likley Not certain to happen but an additional factor may result in an incident/accident | LOW | MEDIUM | HIGH | HIGH | HIGH |
| 5 | Very Likely Almost inevitable that an incident / accident would result | LOW | MEDIUM | HIGH | HIGH | HIGH |

Likelihood

How often could the hazard occur? Consider the task, frequency, duration, method of work, employees involved.

Severity

How serious would the hazard's effects be if realised? Consider the type of hazard, biological, ergonomic, physical and chemical.

Risk = Likelihood x Severity

E.g. Likelihood (4) X Severity (3) = 12 **HIGH RISK**

| | |
|-------------------------------------|---|
| LOW RISK (Score 1-6) | May be acceptable, however, review task to see if risk can be reduced further |
| MEDIUM RISK (Score 8-10) | Task should only proceed with appropriate consultation with specialist personnel and HS&E team. Where possible the task should be refined to take account of the hazards involved or the risks should be reduced further prior to task commencement |
| HIGH RISK (Score 12-25) | Task must not proceed. It should be redefined further control measures put in place to reduce risk. The controls should be re-assessed for adequacy prior to work commencement. |

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| 5.1 Site Address | Bourne Estate, Portpool Lane, Holborn, London, EC1N 7SD |
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| 5.2 Location(s) of Spill Response Equipment | |
|--|-------------------------|
| Spill Kit | Site Security Container |

| 5.3 Spill Response Equipment Trained / Competent Person(s) | |
|---|--|
| All site crew | |

| | | | |
|--------------------------------------|------------|--------------------|------------|
| 5.4 Frequency of Spill Tests: | N/A | Issue Date: | N/A |
| Completed by: | - | Position: | - |

| | |
|---------------------------|----------------------|
| Client / Landowner | Principal Contractor |
|---------------------------|----------------------|

| | | |
|--------------------------------------|---|---------------------------------|
| 5.5 Spill Response Contractor | 0800-592-827 Adler & Allan Ltd. | Membership Number: CM191 |
|--------------------------------------|---|---------------------------------|

| | |
|-------------------------------|--|
| 5.6 Environment Agency | 0800 80 70 60 (24 hr Emergency Hotline) |
|-------------------------------|--|

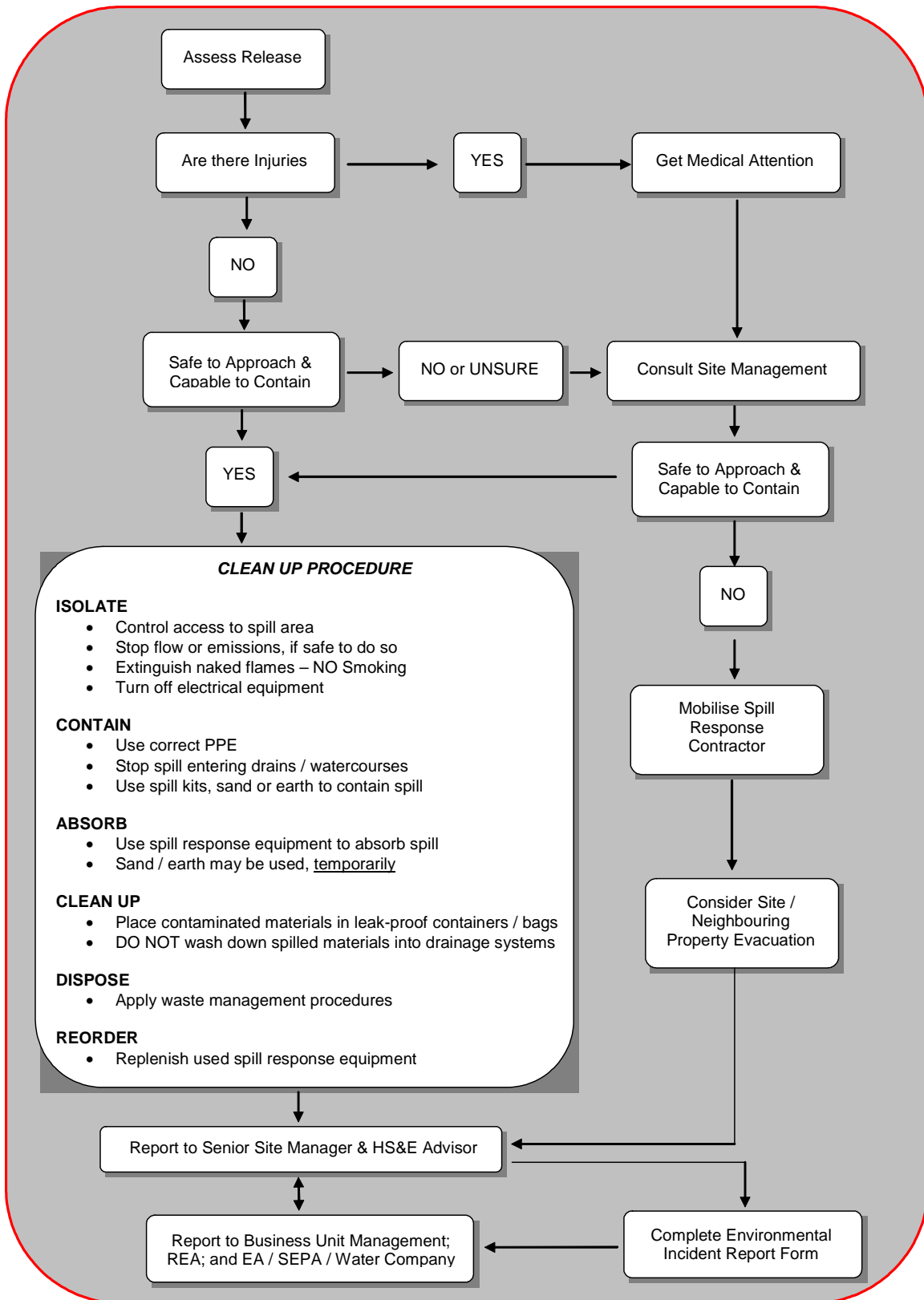
| | |
|-------------------------------|--|
| Local EA / SEPA Office | Refer to Rock and Alluvium Area Office |
|-------------------------------|--|

| | |
|----------------------------|----------------|
| 5.7 Local Authority | Not Applicable |
|----------------------------|----------------|

| | |
|----------------------------------|---|
| 5.8 Additional Contact(s) | Sally Lloyd-Raines, HSE Advisor, 01372 389 333 |
| | Peter Ward, Plant Manager, 07966 562317 |
| | Contract Supervisor, see documentation |

| 5.9 Rock and Alluvium / Galliford Try Contacts | |
|---|--|
|---|--|

| | |
|-------------------------------------|--|
| Head of Operations | Nick Dewey: 07843 328 141 |
| Regional Office | Head Office - Leatherhead: 01372 389 333 |
| Regional HS&E Advisor | Sally Lloyd-Raines: 01372 389 333 |
| Regional Environment Advisor | Amit Patel: 07976 361 119 |



IF IN DOUBT OR YOU REQUIRE ASSISTANCE CONTACT YOUR REGIONAL ENVIRONMENTAL ADVISOR

- **Assess Release** – Determine the size of the spill and whether there are any injuries to any person(s) involved.
 - If there are injuries medical attention should be sought and the most senior person on site informed
 - If there are no injuries, an assessment should be made as to whether the spillage is safe to approach and contain. If there is doubt, the most senior person on site should be consulted
 - Consideration should be given of the need to evacuate the site and / or neighbouring buildings. If necessary, the police and / or fire service should be contacted
 - If the competent or trained person cannot handle the hazardous material spill then the Company's spill response contractor should be contacted.
- **Isolate**
 - Control access to spill
 - Do not allow unauthorised access to spillage area
 - Identify the source of pollution and stop the flow or emissions as quickly as possible, if it does not endanger the health and safety of people
 - Switch off or suppress any potential sources of ignition
 - Extinguish naked flames and ensure there is no smoking
 - Turn off electrical equipment.
- **Contain**
 - Ensure the correct PPE is used
 - If the incident involves liquids, steps should be taken to stop it spreading, using earth, sand, or impervious material such as polythene
 - If the incident involves liquids, the flow should be diverted from drains and / or watercourses
 - Consideration should be given to the use of absorbent materials and / or booms, as a precaution, in environmentally sensitive locations
 - Use absorbent materials (sand or earth, as an alternative) to assist spill containment.
- **Absorb**
 - Spill response pads, sheets, booms and granules should be used to absorb the spilt material
 - Sand and earth may be used, as a temporary alternative.
- **Clean Up**
 - Contaminated sand, earth or absorbent materials should be placed into sacks or leak-proof containers, as appropriate
 - Spilled materials should **not** be washed into the drainage system.
- **Dispose**
 - Waste contaminated materials should be disposed of appropriately, refer to HS&E-PRO-W01; Waste Management
 - All used absorbent materials are classified as hazardous waste.
- **Reorder**
 - Replace used spill response equipment supplies.

Client specific spill response procedures should be adhered to when working on client site(s) or when stipulated in the contract.