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	Pit Excavation			
	Department QHSE	Document Ref. No. QHSE-DOCS-RA-0000	Issue Date 00-00-0000	Revision 00

Company Name:	ABC	Prepared by:	
Functional Area/SOW:	Pit Excavation up to 3.0 m, Pit Excavation beyond 3.0 m, Rock by excavation blasting, Piling Work, and Narrow deep excavations for pipelines, etc.	Approved by:	

S/N	Activities	Hazard / Hazardous Situation	Who Might be at Risk?	Impact	Initial Risk			Control Measures	Residual Risk			Action by
				Effects of Hazards/Consequences	L	C	RR		L	C	RR	
1	Pit Excavation up to 3.0m	- Falling into pit - Earth Collapse - Contact with buried electric cables Gas/ Oil Pipelines	AC Technicians fall from height. Others working below are also at risk.	- Personal injury - Suffocation/Breathlessness Buried - Electrocution Explosion	3	5	15	- Provide guard rails/barricades with warning signals. - Provide at least two entries/exits. - Provide escape ladders. - Provide the suitable size of shoring and strutting, if required. - Keep soil heaps away from the edge equivalent to 1.5m or depth of pit whichever is more. - Don't allow vehicles to operate too close to excavated areas. Maintain at least a 2m distance from the edge of the cut. - Maintain a sufficient angle of repose. Provide a slope not less than 1:1 and a suitable bench of 0.5m width at every	2	2	4	Project Manager/ Engineer Project Supervisor QHSE Officer

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								1.5m depth of excavation in all soils except hard rock. - Battering/benching the sides. - Obtain permission from competent authorities, before excavation, if required. - Locate the position of buried utilities by referring to plant drawings. - Start digging manually to locate the exact position of buried utilities and thereafter use mechanical means.				
2	Pit Excavation beyond 3.0m	All technicians, and tradesmen nearby, may suffer sprains, bruising, or fractures if they trip over objects, such as work debris, or slip-on spillages.	- Same as above Plus Flooding due to excessive rain/ underground water - Digging in the vicinity of existing Building/Structure - Movement of vehicles/equipment close to the edge of the cut.	- Can cause a drowning situation - Building/Structure may collapse Loss of health & wealth - May cause cave-in or slides. - Persons may get buried.	3	5	15	- Prevent ingress of water. Provide ring buoys. - Identify and provide a suitable size dewatering pump or well-point system. - Obtain prior approval of the excavation method from local authorities. Use the under-pining method. - Construct a retaining wall side by side. - Barricade the excavated area with proper lighting arrangements. - Maintain at least a 2m distance from the edge of the cut and use stop blocks to prevent over-run.	1	2	2	Project Manager/ Engineer Project Supervisor QHSE Officer

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								Strengthen shoring and strutting.				
3	Narrow deep excavations for pipelines, etc.	All operatives in the vicinity could suffer from smoke inhalation or burns.	- Same as above Plus Frequent cave-in or slides - Flooding due to Hydrostatic testing	- May cause severe injuries or prove fatal - May arise drowning situation	3	5	15	- Prevent ingress of water. Provide ring buoys. - Identify and provide a suitable size dewatering pump or well-point system. - Obtain prior approval of the excavation method from local authorities. Use the under-pining method. - Construct a retaining wall side by side. - Barricade the excavated area with proper lighting arrangements. - Maintain at least a 2m distance from the edge of the cut and use stop blocks to prevent over-run. - Strengthen shoring and strutting.	1	2	2	Project Manager/ Engineer Project Supervisor QHSE Officer
4	Rock-by excavation blasting	Operators/Technicians risk injury, particularly to the back, from lifting and handling heavy or awkward objects, e.g., Split AC indoor and outdoor	- Improper handling of explosives - Uncontrolled explosion - Scattering of stone pieces in the atmosphere - Entrapping of persons/animals.	- May prove fatal - May cause severe injuries or prove fatal - Can hurt people - May explode suddenly	3	5	15	- Ensure proper storage, handling & carrying of explosives by trained personnel. - Comply with the applicable explosive acts & rules. - Allow only authorized persons to perform blasting operations.	1	2	2	Project Manager/ Engineer Project Supervisor QHSE Officer

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		units and other supporting structures.	Misfire					- Smoking and open flames are to be strictly prohibited. - Use PPE like goggles, face masks, helmets, etc.				
5	Piling Work	- Failure of pile driving equipment - Noise pollution - Extruding rods/casing - Working in the vicinity of 'Live- Electricity'	Operators/Technicians	- Can hurt people - Can cause deafness and psychological imbalance. - Can cause electrocution/ Asphyxiation	3	3	9	- Inspect Piling rigs and pulley blocks before the beginning of each shift. - Use personal protective equipment like earplugs, muffs, etc. - Barricade the area and install sign boards. Provide first-aid. - Keep sufficient distance from Live-Electricity as per IS code. - Shut off the supply, if possible. - Provide artificial/rescue breathing to the injured.	1	2	2	Project Manager/ Engineer Project Supervisor QHSE Officer

OSH Risk Matrix

Probability	Consequence				
	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Rare (1)	1	2	3	4	5
Possible (2)	2	4	6	8	10
Likely (3)	3	6	9	12	15
Often (4)	4	8	12	16	20

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Frequent/Almost Certain (5)	5	10	15	20	25
15 - 25	Extreme Risk	Activity or Industry Should Not Proceed in Current Form			
8 - 12	High Risk	Activity or Industry should be modified to include remedial planning and action and be subject to detailed OSH Assessment			
4 - 6	Moderate Risk	Activity or industry can operate subject to management & Modification			
1 - 3	Low Risk	No Action is Required Unless Escalation of Risk is Possible			

	Name	Date:	Signature
Project Manager:			
Project Engineer:			
QHSE Officer:			