

PROJECT NAME

ACTIVITY– INSTALLATION OF SUMP PUMP

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Serial No.	Sub-Activities	Hazards Identified (Generic & Task)	Risks Involved (People & Property)	Risk Rating			Control Measures	Residual Risk
				Severity	Probability	Initial Risk		
1.	Prepare work area	<ul style="list-style-type: none"> Unauthorized, untrained workers 	<ul style="list-style-type: none"> Cuts Abrasions 	2	A	L	<ul style="list-style-type: none"> TBT/DSTI to be conducted by the foreman/ safety officer prior to work commencement Task specific safety training to be provided Authorized personnel to undertake the job Daily safety inspection should be carried and eliminate the hazard. 	Low (ALARP)
2.	Manual Handling	<ul style="list-style-type: none"> Incorrect lifting of loads Sharp edges. Placing the object while fingers underneath. Slip/trip/fall (same level) Unsafe posture 	<ul style="list-style-type: none"> Back Injuries Cut to finger Strain Musculoskeletal Injuries 	3	C	M	<ul style="list-style-type: none"> Any lifting tasks shall be carried out by persons physically capable to do so No employee should be asked to carry loads above his capacity and in any case no load shall exceed 30kg per man. Mass of the load is more then to be equally shared Deploy enough number of personnel for lifting shall be appointed to the task depending upon the type of load to be lifted. Use easy mode of transport like trolley etc. Load not to be lifted above your shoulder height Keep your fingers away from pinch point While placing the load Area to be illuminated with adequate lighting. PPE to be worn at all times. (helmet, shoe, overall, vest, gloves, goggles, mask) 	Low (ALARP)

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3.	Stacking and Storing	<ul style="list-style-type: none"> • Unauthorized, untrained workers • Material fall from height • Improper stacking • Collapse of materials 	<ul style="list-style-type: none"> • Crush • Cut and abrasion • Damage to property 	3	B	M	<ul style="list-style-type: none"> • All materials shall be stored below 2 meter height. • If the material is too heavy, use hydraulic trolley to shift the material. • No storage of materials to be done in the work place, only required quantity to be taken for the job. • Personnel protective equipment must wear at all time during the activity. (Helmet, shoe, vest, overall, gloves, goggles, mask.) 	Low (ALARP)
4.	Transportation of materials to site using with trailer, pickup, fork lift and crane	<ul style="list-style-type: none"> • Unauthorized, Untrained Workers • Failure of lifting equipment • Failure of lifting tools & tackles • Unsafe lifting. • Swinging of material • Damaged sling/wire rope or a chain • Poor maintenance of vehicle • Speedy operation • Over turn • Over load 	<ul style="list-style-type: none"> • Fatality • Fractures • Property damage • Injury to personal • Sprain and strain 	4	C	H	<ul style="list-style-type: none"> • Ensure the crane and forklift engaged is tested and having valid license and the operator has valid license and approved 3rd party certificate. • Engage trained and certified banks man. • Barrication and warning signs in to the area where lifting operation is carried out and restrict the entry. • Check list should be carried out to their vehicles by the operator prior to start any work • Use tagline for control of swing and alignment. • The crane must be stopped when the wind speed exceeds 38km/hr. • SWL should be clearly marked on the crane and should be check that is functioning. 	M (ALARP)

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							<ul style="list-style-type: none"> • The crane and trucks shall be periodically maintained and a periodical check has been done by the maintenance team. • Vehicle not to be left unattended at site (ie, to be switch off mode if required and keys removed) • SWL shall not be exceeded. • Load should be secured properly with the equipment. • Operators and rigger must wear high level of reflecting vest and adequate PPE (Shoe, helmet, leather gloves, goggles, over all) • Vehicle routes to be kept free of obstructions (with spillages being cleaned up promptly) • Any reversing that is necessary should be overseen by a trained flagman / Banks man. • Operator should follow the site speed limit and obey the traffic rules. • Colour coded system to be implemented to all lifting equipments as per the month. 	
5.	Traffic and road management	<ul style="list-style-type: none"> • Collision with vehicles/ fixed installations • Poor identification • Unauthorized/ untrained Operator/ driver, banks men • Poor access for vehicle • Public movement 	<ul style="list-style-type: none"> • Fatality • Property damage • Fracture • Penalty/ compensation 	4	B	M	<ul style="list-style-type: none"> • Prior to start obtain all relevant approval from traffic department in connection to the use of road. • PTW to be approved from Company/Contractor prior to start the activity. • Trained and experienced operator/ driver and banks men to be appoint for the activity. • Restricted to unauthorized and public to enter the area. • Public vehicles and transport to be restrict to enter the work area and proper alternative way to be provided. 	Low (ALARP)

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							<ul style="list-style-type: none"> Warning sign boards to be placed and area to be well barricaded. High visibility vest to be provided to flagman to increase visibility. Flagman to be positioned to the areas wherever required. Close supervision to be done at all times. 	
6.	Installation of sump pump by using chain blocks and lifting gears	<ul style="list-style-type: none"> Uncontrolled movement of load Unauthorized, Untrained Workers Damaged chain blocks lifting gears Slip, trip and fall Collision 	<ul style="list-style-type: none"> Fatality Fractures Eye damage Skin damage Property damage 	4	B	M	<ul style="list-style-type: none"> Authorized personnel to undertake the job 3rd party certified chain blocks to be used And to follow the colour code. Chain pulley block's hook shall have safety Latch. Visual inspection shall be carried out prior to use of chain block & lifting gears. Ensure the sump pump are tightly secured before starting the hooking up activity. Warning signs and barrication to be provided around the area to restrict the other workers into the hazardous area. Chain pulley block should be used to lift the object for vertical purpose only. Provide padding for the materials at sharp corners. Ensure that all accessories like chain, hooks, pins, latch & break in good working condition. Hoisting hook provided to install chain block, shall be tested and certified by third party inspector. Maintain a good housekeeping policy to prevent slip, trip, fall hazards Close supervision to be done at all times. Proper communication to be maintained between the workers while doing the activity 	Low (ALARP)

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							<ul style="list-style-type: none"> • Appropriate PPE to be worn while during the installation (Helmet, shoe, vest, overall, Leather gloves, goggles.) 	
7.	Working at confined space	<ul style="list-style-type: none"> • Low level of oxygen • Unauthorized and untrained workers 	<ul style="list-style-type: none"> • Breathing Problem • Fatality • Suffocation 	4	C	H	<ul style="list-style-type: none"> • Oxygen level should be checked prior to enter the work area. • Continuous monitoring/proper supervision should be available at the workplace. • The area should be barricaded properly. • Don't allow any unauthorized persons. • Get permits to work (PWT) from HSE dept. • Only trained and competent person should Do the work. • Suitable type of breathing apparatus should Be provided if there is a deficiency of oxygen. • No person must be allowed to enter until a competent person is satisfied that entry is safe. • Emergency arrangements should be available. • Continue to monitor this area. 	Medium (ALARP)
8.	Working with Hand tools (Hack saw, wood saw, screw driver, spanner)	<ul style="list-style-type: none"> • Slip, trip and fall • Damaged warn out hand tools • Flying objects • Mushroom Heads • Using incorrect type 	<ul style="list-style-type: none"> • Fatigue • Trigger finger • Cuts and abrasions 	3	C	M	<ul style="list-style-type: none"> • Defective tools should not be issued or used to perform the task, to be checked by store keeper • Don't extend the spanner by using a pipe as an extension bar • Hand tools shall be free from oil, grease & etc. 	Low (ALARP)

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							<ul style="list-style-type: none"> • Chisel's head shall have safety cap to avoid finger injury. • Never use a file as a lever • Never use a screw driver as a chisel • Use eye/ face protection when there is flying materials hazard, wear gloves while required to protect the hands • Use right tools for the job 	
9.	Working with power tools (Drill machine)	<ul style="list-style-type: none"> • Defective equipment • Electricity • Improper use of equipment • Poor maintenance • Untrained workers • Flying object • Noise and vibration • Fire • Dust 	<ul style="list-style-type: none"> • Hearing losses • Eye injury • Crushing • Back injury • Burns • Electrocutation • Ringing in the ear / Deafness 	3	C	M	<ul style="list-style-type: none"> • PTW to be applied and obtained prior to start, If spark producing activity is performed • Defective tools should not be issued or used to perform a task. • Monthly inspection should be carried out by the electrician and record to be kept at the store • All portable power tools should be fitted with adequate fuse protection either in the tool body or in its electrical plug. • The weight, size and type of tool should be selected to suit the job being carried out. • Don't lay the cables around the access way, it should be proper routing • Industrial distribution board and socket only to be used at site • No joints shall be made in electrical cable. • Cable hangers shall be used to avoid the direct contact of power tools cable with the scaffolding members. • Electrical connection shall be routed through ELCB only. 	M (ALARP)

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							<ul style="list-style-type: none"> • Correct rate of ELCB should be used (Ex:- 30ma only acceptable) • Only those persons who have been adequately trained and experienced in the use of the tool should be allowed to use the same. Power tools shall have inspection sticker. • Tools should be stored and maintained in good working condition. • Appropriate PPE Should use (Goggles, Mask, Ear plug, Gloves, Shoe, Helmet, Overall, Vest) 	
10.	Working with ladder	<ul style="list-style-type: none"> • Person/ material falling from height • Over reaching • Over loading • Obstructing the access way • Slippery or uneven surface 	<ul style="list-style-type: none"> • Sprain and strain • Fracture • Injury to the person 	3	C	M	<ul style="list-style-type: none"> • The ladder should extend minimum one meter from the top for safe movement • Heavy materials should not be carried • Do not erect in slippery, uneven surface • Should be set up with a 4 vertical to 1 horizontal slope (4:1) • Inspection and maintenance to be registered and recorded by the store keeper • Step ladder must fully open and lock and the devices to be as per manufacturer • Defective ladder should not be used and report it immediately • Do not work from the top of two rungs • Remember the 3 point contact • Do not work in front of the door. If work is carried then locked the door or blocked off • Ladder to be used for short duration works only limited to 15 min. • Colour coded system to be implemented 	Low (ALARP)

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				Severity	Probability	Initial Risk		
11.	Emergency procedure During installation	<ul style="list-style-type: none"> • Unauthorized/ untrained Person • Faulty Instrument • Improper identification • Electricity 	<ul style="list-style-type: none"> • Fatality • Property damage • Fire 	5	B	H	<ul style="list-style-type: none"> • Only qualified and trained person to do the job. • Emergency procedure to be briefed to all personnel prior to start the activity. • Emergency evacuation plan shall be readily available according to site condition and developed to the all workforce. • Trained first aider, fire warden and emergency vehicle to be available at the site during the activity. • Calibrated instrument only to be used. • All personnel shall be aware of first aid treatment related to electric injuries. 	Low (ALARP)
12.	While working at night shift	<ul style="list-style-type: none"> • Poor illumination • Slip/trip/fall 	<ul style="list-style-type: none"> • Fatality • Cuts 	3	B	M	<ul style="list-style-type: none"> • Proper illumination to be provided • light post to be secured from fall • Proper cable management system to be Followed • All materials to be staged in proper manner without obstacles 	Low (ALARP)
13.	Working in hot weather	<ul style="list-style-type: none"> • Heat Stress 	<ul style="list-style-type: none"> • Dehydration • Sunburn • Skin Cancer 	2	B	M	<ul style="list-style-type: none"> • Drink plenty of water • Employees shall be trained about heat stress symptoms & first aid measures. • Avoid highly physical tasks during the hottest part of the day • Isotonic drinks to be provided 	Low (ALARP)
14.	Work Completion	<ul style="list-style-type: none"> • Poor housekeeping • Slip/trip/fall 	<ul style="list-style-type: none"> • Fire 	2	A	L	<ul style="list-style-type: none"> • General housekeeping, Remove all surface, unwanted waste materials from the building • All necessary precautions will be adopted to prevent fire 	Low (ALARP)

RISK MATRIX

Probability

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					A	B	C	D	E
Severity	People	Assets	Environment	Reputation	Improbable 1 in 100,000 Years	Remote 1 in 10,000 Years	Occasional 1 in 1000 years	Probable 1 in 100 years	Frequent 1 in 10 years
5-Catatrophic	Multiple fatalities or permanent total disabilities	Extensive damage	Massive effect	International impact	<p style="text-align: center;">Medium Risk (ALARP)</p>	<p style="text-align: center;">High Risk</p>			
4-Severe	Single fatalities or permanent total disabilities	Major damage	Major effect	National impact					
3-critical	Major injury or health effects	Local damage	Localised effect	Considerable impact					
2-Marginal	Minor injury or health effects	Minor damage	Minor effect	Minor impact					
1-Negligible	Slight injury or health effects	Slight Damage	Slight effect	Slight impact					
					<p style="text-align: center;">Low Risk</p>				

HIGH	<p>3-E 4-C,D,E 5-B,C,D,E</p>
MEDIUM	<p>1-D,E 2-B,C,D,E 3-A,B,C,D 4-A,B 5-A</p>
LOW	<p>1-A,B,C 2A</p>