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ENVIRONMENTAL SERVICES

**METHOD STATEMENT**

**COOLING TOWER CLEANING**

**I N D E X**



## SCOPE:

This method statement covers the procedures to clean the cooling tower sump and basin.

## OBJECTIVE

This Method Statement is for guidance of the staff / Technicians who will be involved in carrying out the works

- This method statement is to ensure the work will be executed in an efficient and safe manner.

## TOOLS & EQUIPMENTS REQUIRED:

Jetting machine, vacuum machine, discharge hoses, electrical cables, pressure machine, low pressure machine, hand brushes, buckets, cleaning materials, Plastic covers.

## SAFTEY:

- All safety measures and precautions shall be maintained.
- All requirements stipulated in Safety Precautions.
- Safety hazards and precautions shall be maintained during work.
- PPE such as Rubber gloves, safety shoe, gumboot and uniform.

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**MATERIALS**

- Cleaning Chemicals.

**PRIOR ACTIVITIES:**

- PTW – Permit to work to be obtained
- Briefing the activity to all technicians by supervisor through tool box talk.

**RESPONSIBILITIES:**

- Site Engineers shall ensure that all tools and equipment are made available sufficiently in advance to the commencement of the work.

**PROCEDURE:**

1. All the staff to be provided with overalls, rubber safety boots, safety helmet with face shield if necessary and gloves.
2. Connect all the Electrical items, lights, pressure washers to a circuit breaker or fused plug.
3. Insert water hose to jetting machine for the cleaning applications.
4. Use cleaning brushes and wipers to physically clean the cooling tower basin and sump.
5. Drain the water using the existing cooling tower drain.
6. Upon completion of all drains or sections thereof clean manhole & surrounding areas using high pressure washing machine or manually & close the manhole.
7. Inform the customer and get his approval on the job satisfactorily carried out.
8. Prepare an After-Service Report.

**Pre-Operational Preparation**

1. Take measurement to determine the total surface area to be treated.
2. Locate power outlets and water taps.
3. Determine access configuration, location, and access to jobsite to prepare for equipment, access strategy and other material requirements.
4. Prepare and check working condition of tools & equipment.
5. Prepare material supplies.

**ON SITE OPERATION**

- Wear personal protective equipment. (impermeable rubber coat, pants, gloves and boots, helmet with face visor.

- Position machines & equipment relative to power supply and water sources.
- Ensure that power cords are well insulated and way above water.
- Brush stubborn stains from the surface when necessary

**CLOSING ACTIVITIES:**

- PTW – Permit to work must be closed

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## RISK ASSESSMENT

| Hazard | Potential Hazard | Initial Assessment | | | Control Measures (List the controls to manage each of the hazards) | Re-Assessment | | |
|---|---|---|---|---|---|---|---|---|
| | | L (1-5) | S (1-5) | Risk Rate | | L | S | Residual Risk |
| Electrical lights | Electrical shock & fire | 4 | 4 | 16 | Battery operated LED lights and head torches. Use of flame proof, waterproof & shatter proof electrical equipment. Preventive maintenance of all electrical equipments. | 2 | 4 | 8 |
| Pressure Washer | Bodily injury | 4 | 4 | 16 | Keep the area clear of non-essential, eye and hand protection to be worn always. TBT on the safe use of the machines. Maintain good housekeeping. | 1 | 4 | 4 |
| Slips/Falls. | Head & body injury | 3 | 4 | 12 | Provision of anti-slip boots. Thorough understanding of tank layout, provision of adequate lighting and proper training. Warning signs and isolate area. | 1 | 4 | 4 |
| Manual Handling | Physical Injury - Head, feet & body. | 3 | 4 | 12 | Clear tank entrance. Use ropes & hooks to secure objects & equipment. Hard hat and safety shoes to minimize the impact. (All PPE's) | 1 | 4 | 4 |
| Working at heights | Physical damage | 4 | 4 | 12 | Use full PPE's. Use of long handled tools wherever appropriate. Full body harness and lifeline. Safety briefing to be conducted before starting the job. Take utmost precaution & controlled operations. | 1 | 4 | 4 |
| Chemical hazard | Burns and skin irritation | 3 | 4 | 12 | All PPE's such as Face mask, gloves and eye protection. Dilute the chemical concentration with water before starting the cleaning works. Carry eye wash if required. | 1 | 4 | 4 |
| Hard/sharp objects. | Head & body injury | 3 | 4 | 12 | Barricade and isolate all with warning signs. Use all PPE's. Identify the areas and use padding or wrapping to sharp edges. | 1 | 4 | 4 |

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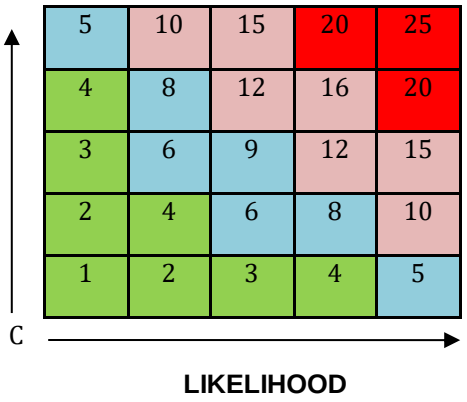
**LIKELIHOOD**

**1. Very Unlikely** – There's 1 in a million chance of the hazardous event happening.
**2. Unlikely** - There's 1 in 100,000 chance of the hazardous event happening.
**3. Fairly Likely** - There's 1 in 10,000 chance of the hazardous event happening.
**4. Likely** - There's 1 in 1000 chance of the hazardous event happening.
**5. Very Likely** - There's 1 in 100 chance of the hazardous event happening.

**CONSEQUENCE**

1.. Insignificant – No injury
2. Minor – Minor injuries needing First Aid
3. Moderate – Up to 3 days absent
4. Major – More than 3 days absent
5. Catastrophic - Death




| | |
|---|---|
| 17 – 25 | UNACCEPTABLE<br>Stop activity and make immediate improvements |
| 10 – 16 | TOLERABLE<br>Look to improve within specified timescale |
| 5 – 09 | ADEQUATE<br>Improve at next review |
| 1 – 4 | ACCEPTABLE<br>No further action. Ensure controls are maintained |

| | Name | Designation | Signature | Date | Remarks |
|---|---|---|---|---|---|
| **Prepared By;** | **Patrick** | **Safety Supervisor** |  | **30-07-2019** | |
| **Reviewed By:** | **Chit** | **HSE** |  | **31-07-2019** | |