

# Job Hazard Analysis

(Always Wear Proper PPE)

<b>Project:</b>	<b>Superintendent:</b>
<b>Task: Manhole Vacuum Testing</b>	<b>Date:</b>

Step	Potential Hazards	Safe Procedures/ Crew Responsibilities
<b>Preparation</b>		<ul style="list-style-type: none"> <li>• Designate a Competent Person or persons</li> <li>• Review P3 (Preparation Planning Procedures) and Hazard Analysis with crew</li> <li>• Assess location and conditions*</li> <li>• Complete and review STA's daily</li> <li>• Review testing specifications</li> </ul>
<b>Dewater structure if needed</b>	Water in structure	<ul style="list-style-type: none"> <li>• Refer to 'Dewatering' JHA if there is water in structure</li> </ul>
<b>Prepare to enter structure</b>	Multiple confined space hazards listed below	<ul style="list-style-type: none"> <li>• Fill out Confined Space Entry Permit</li> <li>• Always have "top man" when working in confined space</li> </ul>
<b>Set up retrieval system</b>	Improper setup/inexperienced attendant	<ul style="list-style-type: none"> <li>• Train personnel on equipment to be used</li> <li>• Be sure to read instructions or have prior experience with tripod and winch</li> </ul>
	Falling or tripping into structure	<ul style="list-style-type: none"> <li>• Good housekeeping around structure</li> <li>• Use barricades to keep spectators away from hole</li> <li>• Leave cover in place if possible when placing tripod</li> <li>• Fully erect tripod before placing it over the opening</li> <li>• When testing air, wear harness and be attached to tripod</li> <li>• Attendant must use fall protection when hole is &gt;6' deep</li> <li>• Inspect and secure ladder for entry into structure</li> </ul>

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<b>Check air quality of space</b>	False air reading of air quality	<ul style="list-style-type: none"> <li>• Check calibration of air tester and make sure self-test is performed when unit is turned on</li> </ul>
	Hazardous or explosive gases or liquids coming from upstream, downstream, or from within the space	<ul style="list-style-type: none"> <li>• Be sure to lower the gas meter into all zones of the confined space for a minimum of one minute in each zone, and continue to monitor the air while personnel are in the confined space</li> <li>• Be sure to retest the air in the structure before each re-entry</li> </ul>
<b>Install test balls in pipes</b>	Stings or bites from insects, snakes, or other animals	<ul style="list-style-type: none"> <li>• Be aware of dangerous snakes, spiders, etc. in the area, be able to identify them, and know how to care for bites and stings</li> <li>• Have appropriate first aid supplies on hand</li> </ul>
	Hit by dropped test ball	<ul style="list-style-type: none"> <li>• Lower test balls with a rope prior to entry</li> </ul>
	Test balls failing or bursting	<ul style="list-style-type: none"> <li>• Keep everyone out of the structure when inflating or deflating</li> <li>• Never be inside of structure while filling test balls</li> </ul>
<b>Brace test balls</b>	Hit by bracing materials	<ul style="list-style-type: none"> <li>• Lower with a rope prior to entering</li> </ul>
<b>Install manhole vacuum testing equipment</b>	Back strain	<ul style="list-style-type: none"> <li>• Get help to install and remove heavy testing equipment</li> </ul>
	Pinched hands and fingers	<ul style="list-style-type: none"> <li>• Discuss the plan to avoid unexpected moves</li> </ul>
<b>Perform vacuum test</b>	Bracing is dislodged and ball hits testing equipment	<ul style="list-style-type: none"> <li>• Do not stand directly over manhole while performing test</li> </ul>
<b>Remove vacuum testing equipment</b>	Stored energy	<ul style="list-style-type: none"> <li>• Be sure to deflate/depressurize all testing equipment in proper sequence before removal</li> </ul>

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<b>Other Steps (if any):</b>	<b>Other Hazards:</b>	<b>Other Safe Procedures:</b>
		<p><b>*If work is to be performed in a travel way, complete and follow ‘Work in Travel Way’ Job Hazard Analysis</b></p>