

**October 4, 2022**

**Use of Digging Spoon in Proximity to Pipeline**

**PURPOSE/APPLICATION**

When working with Clients Integrity programs, trenching and/or excavating is a necessary task involved with that service to underground facilities and utilities. The exposure of existing underground facilities and utilities may be done by hand or by mechanical means, depending on the size of the excavation.

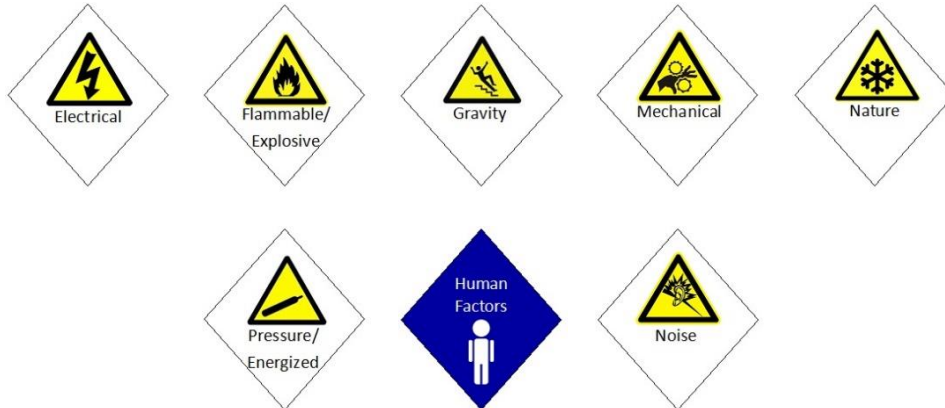
This SJP focuses on the use of specialized mechanical excavation attachment and the removal of soils under live piping or utilities.

**PPE**

**TRAINING**

- Air Horn
- High Visibility Vest
- Strike and Client Orientation
- Competency for Equipment Operators
- Strike Internal Spotter Training
- Ground Disturbance Training for Operators and Spotters

**HAZARD SOURCES**



**PRIOR ACTIVITIES**

1. Ensure all excavations are completed in accordance with Strike COP 07 Ground Disturbance and SWPs (e.g., Ground Disturbance Permits and Checklists, and line locate reports, daylight, etc.)
2. Inspect all tools and equipment prior to use
3. Obtain all required Safe Work Permit and/or Agreement

#	Job Steps	Hazards	Control Measures
1	Planning for spoon for use in the ditch to remove material from under the pipe.	<ul style="list-style-type: none"> <li>❖ Customer approval to use the spoon not received prior to use of the digging spoon</li> <li>❖ No specifications on the use of the spoon as to distance from the pipe the spoon is allowed to be used. The use of the spoon will be closer</li> </ul>	<ul style="list-style-type: none"> <li>▪ Strike Management and superintendent to receive customer approval prior to the use of the spoon and a copy of the approval must be readily available on each site the spoon is used. This could be in a ground disturbance plan and or a deviation approval</li> <li>▪ The approval must confirm the allowable distance of the spoon to the pipe and if it will be a field</li> </ul>

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		<p>than 1 meter in most cases</p> <ul style="list-style-type: none"> <li>❖ No plan in place to use the spoon</li> <li>❖ Operator and spotter not properly trained for ground disturbance</li> </ul>	<p>decision by the site rep and supervisor.</p> <ul style="list-style-type: none"> <li>▪ Strike Management and Superintendent to receive customer approval prior to the use of the spoon and a copy of the approval must be readily available on each site the spoon is used. This could be included in a ground disturbance plan and or a deviation approval</li> <li>▪ The approval must confirm the allowable distance of the spoon to the pipe and if it will be a field decision by the site rep and supervisor.</li> <li>▪ The site representative and supervisor will make a plane on the use of the spoon in the ditch in a case-by-case scenario</li> <li>▪ The site inspector, Supervisor, spotter, and the operator must all be comfortable with the operation and requirements of the spoon to remove material from under the pipe.</li> <li>▪ Ground disturbance training Level 2 for all personnel conducting, directing, and spotting any ground disturbance activities.</li> <li>▪ Ground Disturbance pre-job evaluation – Check list by Client Representative must be reviewed and signed off by the Supervisor and the Operator as a minimum. The spotter will be included in this process in most cases</li> </ul>
2	Preparing ditch for use of the spoon.	<ul style="list-style-type: none"> <li>❖ Ditch space not sufficient for the width/length and required movements of the spoon creating a tight area to the pipe.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Foreman to confirm the area cleared in the ditch will be large enough for the safe use and movements of the spoon around and under the pipe.</li> <li>▪ The site representative and site supervisor to review a plan to remove material from under the pipe with the operator and spotter prior to using the spoon.</li> </ul>

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3	Preparing spoon for use.	<ul style="list-style-type: none"> <li>❖ Spoon not properly attached the track bucket attachment system or moving, becoming loose while the wedge is being tightened into place from the track hoe with the potential of injury or damage to the client's pipe.</li> <li>❖ Spoon not properly attached, becoming loose or detached from the track hoe with the potential of injury or damage to the client's pipe or other equipment.</li> <li>❖ Ditch space not sufficient for the width/length and required movements of the spoon creating a tight area to the pipe.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Operator will place the spoon on the ground and confirm with the spotter/worker the spoon is attached to the track hoe bucket attachment prior to placing the wedge to secure the spoon.</li> <li>▪ Once the operator has confirmed the spoon is connected to the track bucket attachment system, they place the safety lock on the machine to prevent any movement</li> <li>▪ Workers will place the wedge to secure the spoon in place then insert the bolts and washers. Using the proper sized wrench tighten the wedge bolts till they are tight.</li> <li>▪ Once the bolts are tight the worker will hammer the wedge in tighter into place and then re-tighten the bolts. All hands must be free from the wedge area while hammering the wedge.</li> <li>▪ It is recommended the spoon connection points, wedge and bolts to be checked for tightens at the beginning of each use and after each coffee/lunch break at a minimum or as the site foreman requires.</li> <li>▪ Foreman to confirm the area cleared in the ditch will be large enough for the safe use and movements of the spoon around and under the pipe.</li> <li>▪ The site representative and site supervisor to review a plan to remove material from under the pipe with the operator and spotter prior to using the spoon.</li> </ul>
4	Determining the track hoe operator's competency with the spoon.	<ul style="list-style-type: none"> <li>❖ Operator not familiar the required movements of the spoon causing potential damage to the pipe or injuring the workers.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Operator must understand <b>the safe operation of the spoon as the movements are in reverse of the use of a digging bucket</b>. EG: curling the bucket in will move the tip of the spoon downward.</li> <li>▪ Foreman to observe the track hoe operator demonstrating the required</li> </ul>

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		❖ Operator is not deemed competent to use the spoon	<p>movements of the spoon away from the ditch prior to moving the spoon into the ditch.</p> <ul style="list-style-type: none"> <li>▪ Competency review should be completed prior to using the spoon in the ditch.</li> <li>▪ The site inspector, Foreman, spotter, and the operator must all be comfortable with the operation and requirements of the spoon to remove material from under the pipe.</li> </ul>
5	Use of the spoon in the ditch to remove material from under the piping.	<ul style="list-style-type: none"> <li>❖ Spoon being lifted over the pipe with protentional of damaging the pipe due to operator error or misjudgment of the length of the spoon</li> <li>❖ Spotter in to close of proximity to the spoon</li> </ul>	<ul style="list-style-type: none"> <li>▪ At no point will any part of the spoon be placed over top of the pipe</li> <li>▪ Spotter/Foreman to be positioned in the safest area possible to give direction to the operator and have clear visibility to the spoon and pipe at all times.</li> <li>▪ Client representative to be on site at all times there are activities around the piping with the track hoe and spoon.</li> </ul>
6	Removing the material from under the pipe.	<ul style="list-style-type: none"> <li>❖ Spoon brought in flat with potential of back hitting the ditch back causing the front of the spoon forward hitting the pipe</li> <li>❖ Too much pressure put the bottom of the pipe by the spoon</li> </ul>	<ul style="list-style-type: none"> <li>▪ Operator to bring the spoon into the ditch slowly and on angle and brought into a specified location of the ditch and pipe. In most cases the operator will start at one end and work toward the other end of the pipe end of the ditch.</li> <li>▪ The spoon will be brought in on angle under the pipe removing a small portion of dirt by going forward remove the material at small pieces at a time until enough room is made for the spoon to sit felt on the bottom of the ditch.</li> <li>▪ The dirt will be pushed towards the ditch banks/sides and will be removed with bucket once the required dirt is removed from under the pipe.</li> <li>▪ The operator will move the spoon make and forth (like a sawing motion) to cut under the dirt keeping minimal pressure upward towards</li> </ul>

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			the bottom of the pipe and continue to remove the material to the bank side as they go.
7.	Removing the material from the ditch.	<ul style="list-style-type: none"> <li>❖ Tring to remove material from the ditch with the spoon causing material for fall back under the pipe</li> <li>❖ Spoon suspended in air while the spotter tries to remove the bolts and wedge.</li> <li>❖ Improper tool for the job</li> <li>❖ Bucket not properly attached, becoming loose or detached from the track hoe with the potential of injury or damage to the client's pipe or other equipment.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Switch the spoon out with a digging bucket.</li> <li>▪ Operator to lay the spoon flat on the ground and lock the machine out</li> <li>▪ Spotter to proper sized wrench and hammer to remove the bolts and wedge.</li> <li>▪ Remove the bolts and place them somewhere they will not get lost or fall on the ground</li> <li>▪ Use the hammer to loosen the wedge standing on the side with no one standing in close proximity of the direction of the hammer swing.</li> <li>▪ Workers will place the wedge to secure the spoon in place then insert the bolts and washers. Using the proper sized wrench tighten the wedge bolts till they are tight.</li> <li>▪ Once the bolts are tight the worker will hammer the wedge in tighter pinto place and then re-tighten the bolts. All hands must be free from the wedge area while hammering the wedge.</li> <li>▪ It is recommended the bucket connection points, wedge and bolts to be checked for tightens at the beginning of each use and after each coffee/lunch break at a minimum or as the site foreman requires.</li> </ul>

**ADDITIONAL PRECAUTIONS**

**Note:** Reference AOH&S Regulations 442(1), (2), (3) & (4) for Classification of Soil Type definitions

**Note:** Even though AOH&S legislation allows a 30-degree cut back in "hard and compact" soil, the Strike minimum cut back in all soil types is 45 degrees from the vertical

- No worker may enter an excavation or trench that is more than **1.5 meters (5 ft) deep in Alta** and Sask and **1.2 meters (4ft) deep in BC**, unless the worker is protected from cave ins or sliding or rolling materials by cutting back the walls, installing temporary protective structures or a combination of both.

