

# Watering Facility (Nose Pump)

## Vermont Conservation Practice Job Sheet

**614**


### SPECIFICATIONS

Site-specific requirements are listed on the following page(s) of this job sheet. Specifications are prepared in accordance with the Watering Facility 614 practice standard found in the Vermont NRCS Field Office Technical Guide. Information contained in this document is considered part of the conservation plan.

Client Name:		Town:	
Farm:		Tract:	
Designed By:		Date:	
Total Number of Water Nose Pumps Planned:			

**Purpose:** *Check all that apply*

**This practice will provide access to drinking water for livestock in order to:**

 Meet daily water requirements

 Improve animal distribution

If you have questions about this planned **Water Facility** practice contact:

Name:		Tel:		Email:	
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### Estimated Total Maximum Daily Water Requirements:

Type of Livestock:	Number Planned:	Estimated Gallons Per Day Per Head	Gallons Needed:
Dairy Heifers		15	
Beef Cattle		20	
Horses		12	
Other:			
<b>Estimated Total Gallons of Water Needed Daily:</b>			

### Water Supply Sources:

Water Source	Horizontal Distance	Vertical Height (Lift)

### Materials:

MATERIALS NEEDED	TYPE	SIZE	QUANTITY
Nose Pumps			
Water Supply Pipe			
Lumber (Hemlock or Cedar)			

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## Watering Facility – Job Sheet

### GENERAL SPECIFICATIONS

- Nose pumps are generally not the least cost or the most desirable watering facility option unless the site is too distant from farmstead facilities, water lines, springs, etc. to make conventional pipeline and water tubs impracticable or cost prohibitive.
- The livestock watering system shall have capacity to meet the water requirements of the livestock.
- Due to the water requirements of dairy milkers, nose pumps may not be a viable option unless the number of animals being served is very low.
- The site should be well drained, or if not, drainage measures will be provided. Areas adjacent to the nose pump that will be trampled by livestock shall be graveled, or otherwise treated to provide firm footing and to reduce erosion.
- Design and install watering facilities to prevent overturning by wind and animals.
- Nose pump sites must be chosen that have a low risk on contaminating surface or ground water.
- Water intake pipes shall be protected to prevent damage by livestock.
- Nose pump(s) will be protected from freezing by draining and storing under cover.

### OPERATION / MANAGEMENT AND MAINTENANCE:

The following O&M activities will be planned and applied as needed:

- Repair damaged components as necessary.
- Install and maintain fences as needed to prevent livestock damage to the system and appurtenances.
- Maintain the area adjacent to the nose pump(s) in a stable, well-drained condition to prevent rutting, ponding and erosion from livestock use. Maintain surface treatment for livestock footing.
- During winter months, the nose pump and hose must be removed and placed under cover, drained of water, and stored out of reach of children.

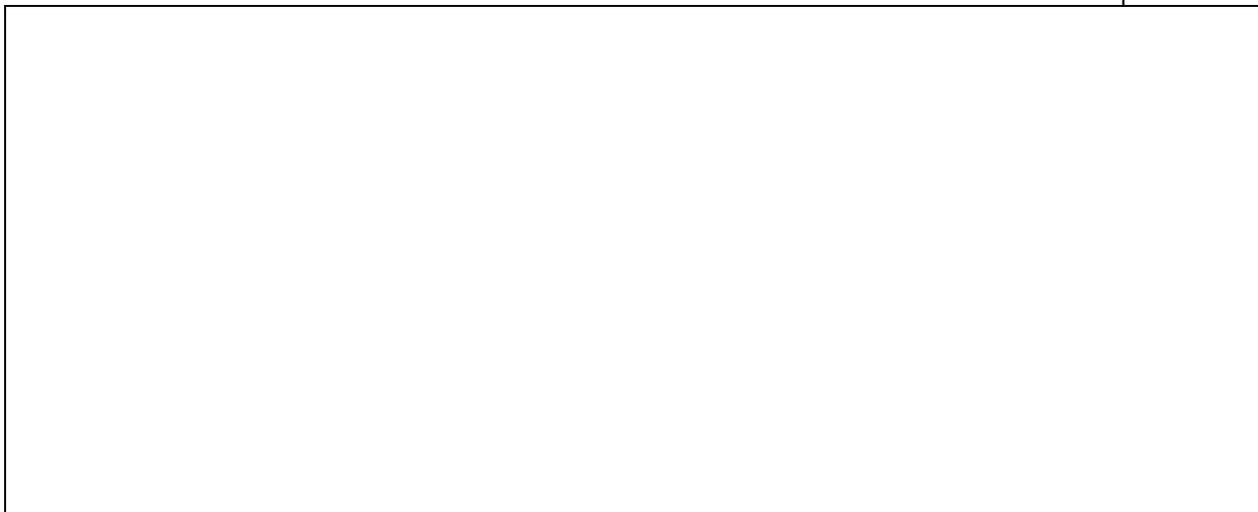
### Specific Additional Requirements or Instructions for Your Nose Pump Installation:

## Watering Facility – Job Sheet

If needed, an aerial view or a side view of the practice can be shown below. Other relevant information, complementary practices and measures, and additional specifications may be included.

**Recommendation:** Import digital photographs to indicate practice before and after effects. For instructions regarding graphics to importing this document go to: [ftp://ftp-fc.sc.egov.usda.gov/VT/Technical/Help/Adobe\\_PDF\\_Help\\_1.pdf](ftp://ftp-fc.sc.egov.usda.gov/VT/Technical/Help/Adobe_PDF_Help_1.pdf)

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## NOSE PUMP GENERAL INFORMATION

Livestock are attracted to nose pumps since they have a bowl which retains some water (the bowl slopes to the rear). To access the water, they push a lever that is in the way, and by doing so, a diaphragm is operated. This creates suction that draws water to the bowl (approximately 1 pint of water per stroke). Since the animal's nose is used to operate the pump they are called 'nose pumps'.

Practical limits of the pump (through a 1 inch polyethylene pipe) are typically lifts to 20 feet from the water supply surface to the nose pump, and a maximum of 200 feet horizontally. For each unused foot of vertical lift, these pumps can typically pull 10 feet horizontally. Example: if 10 foot of vertical lift is needed, then the pumps would be able to pull approximately an additional 100 feet horizontally (10 feet vertical lift 'unused' x 10). Check the specifications provided by the individual nose pump manufacturer. Understand that these pumps will work better when located closer to water sources, as opposed to the maximum manufacturer specified limits.

Livestock best suited to operate a nose pump are larger-sized animals such as beef, dairy heifers, and horses; livestock of this size are most able to operate the diaphragm lever. Nose pumps are not recommended for use with smaller livestock classes, such as sheep. Young calves are not suited to operate the pump, but they will be able to use the pump at approximately 400 pound weight. Smaller calves can only use this system if a small shallow tank is placed under the pump to collect overrun water resulting when larger livestock use the nose pump and extra water (that cannot be held in the nose pump reservoir) runs over the reservoir into the small shallow tank (see example at right).



To avoid one animal from controlling the water, two nose pumps can be provided, as shown in this photograph. The nose pumps must be mounted securely to a rigid base. A raised mount, similar to the one shown at right, is recommended to help prevent livestock from stepping in, or defecating on the water bowl.

For ease of moving the pumps, use optional quick disconnect fittings and install extra hose assemblies at each platform. The nose pump(s) can then be moved to a platform in the next pasture, and quickly connected to the hose assembly at the new platform location.

Fencing is required to ensure livestock approach the pump(s) from the front, since they must not step on the water supply pipe.

Livestock will need some training to learn to operate the plunger. A cow will learn to do this very fast. The pump must be solidly mounted, because during the learning process the cow will aggressively push from all angles trying to get to the water. Next the reservoir must be filled with water by pumping the plunger by hand. You may need to pump water into the reservoir two or three times to get the livestock started.

## **ADDITIONAL INFORMATION**

### **Nose Pumps have the following advantages:**

- they are easily moved, set up, and maintained,
- no energy source is needed,
- they can be used to access sources of surface water,
- they can be set back from the water source, reducing contamination concerns.

### **Nose Pumps have the following disadvantages:**

- they are generally for larger sized livestock,
- they are limited to approximately 20 feet of lift and 200 feet distance, (or combination thereof),
- a single pump serves a relatively small number of livestock,
- the water delivery is very slow since each stroke provides only approximately ½ pint to 1 pint depending upon the manufacturer,
- they can not be used in freezing conditions; nose pumps are designed to provide water for spring through fall pasture situations.

### **Consider the following points for a successful nose pump installation:**

- allow for one nose pump per approximately 20 head, depending upon the manufacturer (check individual manufacturer specifications),
- securely mount each nose pump to a raised base,
- if raised base is made of lumber, it should be pressure treated,
- use a foot valve at the supply end of the pipe to maintain water in the line,
- train livestock to use the nose pump prior to putting them out on pasture, training should be before the weather gets extremely warm, and no other water sources should be available for the livestock,
- "For certified organic operations do not use unapproved building materials (PT lumber) around water systems".

The primary source of information for this job sheet is the British Columbia Fact Sheet titled '*Using Livestock Energy To Pump Livestock Water*' written by Lance Brown, Engineering Technologist. It is available at: <http://www.agf.gov.bc.ca/resmgmt/publist/500series/590305-7.pdf>

Other grazing information available from the University of Vermont Pasture Network: <http://www.uvm.edu/~pasture/>