

## Hangman Creek Watershed Leak Detection Program



### Introduction:

A Water System Leak Detection Program was initiated by the WRIA 56 Watershed Implementation Team in the fall of 2010. The program was designed to provide leak survey and repair services to several small towns and utilities in an effort to conserve water use in their distribution systems. These watershed systems have 1,343 connections and a combined annual water use of 794.4 mg (2004 MPS report).

Unaccounted water use can be a major challenge in small towns due to costs of locating leaks and completing repairs. Unaccounted water use was adequate for three of them, moderate for two, and high to very high for two systems. Total unaccounted water use for these systems in 2004 was approximately 13% of annual water use or 103.74 mg (2004 MPS report).

Water System	# Connections	Unaccounted Water Use
Fairfield	256	(10%) - Ok
Latah	88	(27%) - High
Rockford	225	(<25%) - Moderate
Spangle	141	(39%) Very High
Tekoa	375	(<25%) - Moderate
Waverly	55	(5%) - Good
Hangman Hills Water District	203	*Unknown
Notes: *No information was collected on Hangman Hills Water District prior to this work. MSP report ref		

**Leak Detection Services:**

The Spokane Conservation District contracted with American Leak Detection Services to conduct the leak survey work. In addition to the surveys, American Leak Detection coordinated and held a leak detection workshop for all the small towns in the Hangman Creek Watershed as also invited the neighboring towns as well. The workshop was well attended. The small towns coordinated and scheduled dates with the consultant to conduct the surveys.

**Materials and Methods:**

Field technicians conducted leak surveys in February through April 2011. Standard microphone equipment was utilized to test all AC, CI, metal, C900, ductile and PVC lines. Technicians checked all meters, hydrants and valves. If probable leak noises were detected and noted, then these areas were re-tested to determine if real leaks existed. A FCS Tricor Correlator was utilized to better locate leaks where necessary.

**Results:**

Leak survey work on seven small towns and utilities yielded nine leaks (see table below). The majority of the leaks were found to be on private residences (four). Two leaks were located on main lines, one hose bib, one hydrant, and one well-head. Although the survey found many possible leak noises at each town, further investigation revealed few actual leaks.

Other interesting information about the water systems was exposed during the surveys. The Town of Rockford has 25 meters that are broken or unreadable. Several sites do not have meters and are relying on residential meter reading practices. In Latah, The survey work helped locate 14 gate valves that were previously unknown. In Tekoa, some of the valves are located underneath asphalt and will need to be dug out and located in case the particular line needs to be shut-off in the future.

<b>Water System</b>	<b># Areas Surveyed</b>	<b># Leaks</b>	<b>Type(s) of Leak</b>	<b>System Rating</b>
Fairfield	63	1	Residence	Very Good
Latah	32	1	Main line	Very Good
Rockford	67	1	Hydrant	Fair
Spangle	57	0		Very Good
Tekoa	76	2	Residence, main line	Good
Waverly	40	0		Very Good
*Hangman Hills Water District	54	4	Well head, hose bib, 2 residence	Good
Notes: *No information was collected on Hangman Hills Water District prior to this work.				