





No mass gatherings or other community events were reported to occur during or preceding the outbreak. Mapping revealed a clustering of cases around a new sewer line construction site and a damaged water/sewer pipeline (Fig. 2). A total of 14 samples (5 samples collected on 5th April, 6 samples on 6th April and 3 samples on 16th April) were collected on convenience and sent to microbiology department, Govt. Medical College, Amritsar. All 14 were positive for anti-HEV IgM and negative for anti-HAV IgM.

#### Risk factors

Overall, 159 cases and 159 controls were included in the case-control study (Table 3). The median age of case was 33 years (range 7–75) and control was 34 years (range 9–75). On bivariate analyses, cases were significantly more likely to have a family size  $\geq 5$  (OR, 1.5; 95% CI, 1.0–2.4), to be non-Sikh (OR, 1.9; 95% CI, 1.2–3.0), to complain of foul smelling water (OR, 2.8; 95% CI, 1.8–4.5), and to use piped water for drinking (OR, 4.7; 95% CI, 2.5–8.7). Boiling water before drinking showed a protective effect (OR 0.1; 95% CI: 0.1–0.3). Income, food habits, toilet use, and hand washing practices were not significantly associated with having jaundice.

After controlling for religion, family size and water storage in house, a multivariate analysis indicated foul-smelling water (AOR, 4.0; 95% CI 2.2–7.2), drinking

(T3: Fig. 2) was non-functional from October 2012 to April 2013.

Chlorination of water supplies was irregular and unreliable; only 2 of the 4 tubewells had functioning chlorination systems. Of the 23 tap water samples (19 from case houses and 4 from control houses) collected on convenience. 14 tap-water samples were from same houses where serum samples were collected and sent to Public Health Lab for testing. 21 samples (19 cases plus 2 controls) were contaminated with fecal coliforms (median 44 CFU/100 ml).

The construction of a new sewer line being laid in Sher Shah Suri road, intersecting Baba Jiwan Singh Colony and Sat Kartar Nagar (Fig. 2



repair of pipelines [8]. Health educational activities in the community regarding personal and domestic hygiene were also provided through mass media and consumption of safe water was stressed.

Our study has several limitations. First, cases were self-identified and subject to ascertainment or recall bias. Second, we could not obtain an existing map of the

