



# Safety Codes Council

## **COUNCIL ORDER No. 15472**

### **BEFORE THE PLUMBING SUB-COUNCIL**

**On August 29, 2017**

**IN THE MATTER OF** the *Safety Codes Act, Revised Statutes of Alberta 2000, Chapter S-1.*

**AND IN THE MATTER OF** the Order Pursuant to Section 49(1) of the *Safety Codes Act*, issued January 1, 2017, 2016 by the Accredited Municipality against property owner (Appellant).

**UPON REVIEWING** the Issued Order **AND UPON HEARING** the Appellant and the Respondent, **THIS COUNCIL ORDERS THAT** the Order is **VARIED.**

**From:**

1. Immediately discontinue the use of the existing disposal field so as to contain the effluent generated by the house in the new septic tank. The system is to be operated as a holding tank only. The sewage will have to be removed from the site in a proper manner.

**To:**

1. Immediately discontinue the use of the existing disposal field so as to contain the effluent generated by the house in the new septic tank. The system is to be operated as a holding tank only. The sewage will have to be removed from the site in a proper manner.
2. Immediately engage the services of a licensed installer or a licensed designer and provide new system design with application of for a PSDS permit in place within 40 days of the date of this Order.
3. The existing septic tank shall remain as a holding tank only until such time as an alternate system has been installed in compliance with Alberta Private Sewage Systems Standard of Practice.

See Reasons for Decision at the end of this document.

**Issue:**

1. The Appeal concerns the operation of a private sewage disposal system located on the Appellant's property.

**Appearances, Preliminary, Evidentiary, or Procedural Matters:**

2. Appearing for the Appellant, the Appeal Panel (Panel) heard from the property owner.
3. Appearing for the Respondent, the Panel heard from the Building Safety Codes Inspector for the Accredited Municipality (Municipality), and the Safety Codes Officer (SCO) for the Plumbing and Gas Disciplines for the Municipality.
4. Attending to provide technical support for the Panel was Technical Advisor from Alberta Municipal Affairs.
5. Attending on behalf of the Safety Codes Council (Council) and the Coordinator of Appeals to support the Panel and facilitate the appeal hearing were individuals working for the Council.
6. Attending as observers were the owners of the property directly south of the Appellant's property; and the daughter of the Appellant.
7. At the commencement of the hearing, the Appellant and Respondent confirmed there were no objections to any members of the Panel, and that the Council in general and the Panel in particular had jurisdiction to hear and decide the appeal.
8. The Panel Chair (the "Chair") then explained the process to be followed in hearing this appeal, and read out a list of the written material before the Panel, consisting of the documents listed below in The Record, paragraph 10 as items a) to h). The Appellant and Respondent confirmed that there were no objections to any of the written material submitted to the Panel prior to the hearing.
9. The Chair then asked the Appellant and Respondent whether they wished to submit any new evidence. The Appellant asked for the opportunity to provide new evidence. The Respondent confirmed that they did not object to the introduction of this new material. These items are listed below in The Record, paragraph 10 as item i).

**The Record:**

10. The Appeal Panel considered, or had available for reference, the following documentation:
  - a. Notice of Appeal;
  - b. Acknowledgement letter dated February 23, 2017;
  - c. Request for a Stay of the Order;
  - d. Stay of the Order Letter dated May 4, 2017;
  - e. Appeal Hearing Brief Preparation Guide;
  - f. Written Notification of Hearing;
  - g. Written Brief of the Appellant;

- h. Written Brief of the Respondent; and
- i. New evidence from the Appellant consisting of photographs and 2 written documents.

## Provisions of the Safety Codes Act:

11. The *Safety Codes Act* (S-1, RSA 2000), as amended provides, *inter alia*:

### Part 1 Responsibilities

#### Owners, care and control

- 5 The owner of any thing, process or activity to which this Act applies shall ensure that it meets the requirements of this Act, that the thing is maintained as required by the regulations and that when the process or activity is undertaken it is done in a safe manner.

### Part 5 Orders, Appeals

#### Council considers appeal

52(2) The Council may by order

- (a) confirm, revoke or vary an order, suspension or cancellation appealed to it and as a term of its order may issue a written variance with respect to any thing, process or activity related to the subject-matter of the order if in its opinion the variance provides approximately equivalent or greater safety performance with respect to persons and property as that provided for by this Act.

## Provisions of the Alberta Private Sewage Systems Standard of Practice (2015):

12. The Alberta Private Sewage Systems Standard of Practice (2015) provides, *inter alia*:

### Section 1.1. General

#### 1.1.3. Objectives

##### 1.1.3.1. General

- 1) The objective of an *on-site wastewater treatment system* is to treat *wastewater* and return it to the environment so that
  - a. risks to health are not created,
  - b. the impact on ground and surface waters is minimized, and
  - c. the environment is not harmed.

### Section 2.1. General System Requirements

#### 2.1.1. General System Requirements – Objectives and Design Requirements

##### 2.1.1.3. Objectives Achieved Within Treatment Boundary Limits

- 1) *Wastewater* quality treatment objectives set out in this Standard shall be achieved before the *wastewater* meets the intended *treatment boundary limits* applicable to the design and required by site conditions whether the *wastewater* is on the surface where intended by the design, or moving through the *soil* and subsoil.

## Section 8.1. Soil-based Treatment

### 8.1.1. Soil-based Treatment – Objectives and Design Standards

#### 8.1.1.4 Vertical Separation

- 1) *Soil-based treatment systems shall maintain a vertical separation between the soil infiltration surface and a restricting layer of not less than*
  - a. 1500 mm (5 ft.) when receiving primary treated effluent Level 1,
  - b. 900 mm (3 ft.) when receiving secondary treated effluent (Level 2 or better),
  - c. 900 mm (3 ft.) below a treatment mound as measured from the bottom of the required 300 mm (1 ft.) depth of sand layer intended to provide secondary treatment, or
  - d. the depth of soil required to achieve a 7-day effluent travel time to the design boundary depth, provided the treatment boundary limit depth does not exceed 2.4 m (8 ft.), as set out in Article 8.1.1.5.

## Position of the Parties

### ***Appellant***

*From the Appellant's submissions and testimony, and in response to questions posed by the Panel, the Appellant's position may be summarized as follows:*

13. The Appellant contends that the issuance of the Order was not proper, practical or reasonable on a number of grounds. These include:
  - a. the Order does not contain correct Code references.
  - b. an unsafe condition did not exist, therefore the Order was not required.
  - c. there is no evidence that the e-coli on the neighbour's property solely originates from the appellant's septic tank, but, could come from other sources.
  - d. the timeframe of issuing the Order did not allow further testing and evaluation of the unidentified coliforms.
14. The Appellant acknowledged that the issuance of the Order resulted from concerns brought to the attention of the Respondent by the Appellant's neighbour. These concerns related to effluent running onto the neighbour's property that was directly adjacent and south of the Appellant's private sewage disposal system. The neighbour had discovered a tiny pond several meters south of Appellant's property line.
15. The Appellant further acknowledged that they had spent approximately \$20,000 to install new septic tank system. However, the Appellant contends that:
  - a. The pond found on the neighbour's property was closer in proximity to the location of their own septic tank.
  - b. The neighbour's lawn and driveway showed flooding from Respondent's drainage ditch, which would be responsibility of the Respondent.
  - c. The neighbour's house and his yard have are situated several feet below natural grade line, lower than most all of surrounding properties.
  - d. During the building of their house, the neighbour had significant problems

installing his basement due to water issues.

- e. If a private sewage disposal system fails, then 95% to 99% of the time there will be soggy water effluent lying directly on top of the septic field on owner's property. There was no evidence of that happening with the Appellant's septic field system.
- 16.** Late in the summer of 2016, testing was conducted by a contractor working for the Respondent. Verbal comments made at that time to the Appellant were that no problems were found with the septic field, and that the septic tank was in good condition. However, the Appellant acknowledged that he was advised that they did suspect that the tank might be leaking.
  - 17.** The Appellant further acknowledged that the neighbour's pond tested positive for some kind of coliforms which were never identified as originating from humans or animals.
  - 18.** It was surmised that these coliforms were most likely animal in nature. There is an active agricultural pasture directly touching the west side of neighbour's property. This property is often frequented by animals, such as deer and cats.
  - 19.** Citing articles from Canadian and American government websites, it was pointed out to the Appeal Panel that almost all harmful coliforms come from animal sources and surrounding agriculture.
  - 20.** From July 12, 2016 until about late October 2016, the Appellant's septic field was shut down and the pump had been removed. During this time, it was inferred that the coliforms and other materials in the samples taken increased.
  - 21.** The Appellant suggested that the samples taken by the Respondent were not taken properly and therefore might be tainted. Samples were taken by a "catch can" in a hole dug into the ground. This method would allow a small amount of coliforms to settle to bottom each time the can filled to top, which in turn had a cumulative effect of adding more additional coliforms to the bottom of the can. This would result in higher counts of coliforms being found in the test results.
  - 22.** While the test results claimed that a high coliform count was found, they do not state what number was used to define what that was. The Respondent admitted they did not know what that number was as well.
  - 23.** The neighbour's water has been tested several times in the last few months, and indicates the water is suitable for drinking.
  - 24.** There is evidence of contaminated water flow from higher elevation properties located north and east of the Appellant's house. This water flow appears to feed the drainage ditch and visibly feeds onto the neighbour's low cut landscape.
  - 25.** Photographic evidence was presented to the Appeal Panel suggesting there was neither leakage from septic field, nor evidence of side hill leakage several feet onto the

neighbour's property. This photo evidence also showed natural snowmelt along both sides of fence and no evidence of any leakage coming from our side.

26. The Appellant also believes, and provided photos to support, that the neighbour's system is not meeting the vertical separation requirements in the Alberta Private Sewage Systems Standard of Practice (Standard of Practice).
27. Regardless, the Appellant obtained the proper approvals from the Municipality and installed a new septic tank system. A separate ground sump pump to remove any groundwater was also installed.
28. The Appellant asserted that the Respondent had given written approval of the installation of the new septic tank in the first week of November 2016. This approval stated that the new septic tank complied with agreed upon resolution of the neighbour's concerns. This decision was reversed in the last week of November 2016, at which time the Respondent began to work towards issuing the Order.

### ***Respondent***

*From the Respondent's submissions and testimony, and in response to questions posed by the Panel, the Respondent's position may be summarized as follows:*

29. The private sewage disposal system on the Appellant's property is a health hazard as it is not treating effluent effectively.
30. The new tank installed to address the original concerns brought forward by the neighbor did not stop ground water from coming to the surface. The Order was issued due to the Appellant's lack of response to work with the Respondent to remedy the situation.
31. The Respondent submitted as evidence in support of its position an October 3, 2016 report prepared by a Wastewater Company, which details the septic system inspections and testing performed on their behalf.
32. The report found evidence of effluent leaking from the septic field onto the neighbour's adjacent property.
33. On August 31, 2016, and September 2, 2016, tracer dye with a total of 400 imperial gallons of water was inserted into the lateral of the septic field in the area most prone to the slope. The tracer dye (uranine) was found in water samples collected from the bottom of slope/from the drainage ditch and the bottom of the slope.
34. Sloping conditions, shallow soil layers (i.e. bedrock), and groundwater levels on the property were identified as possible causes. Specifically, that it was likely that ground water under the septic field but above the bedrock could be migrating linearly down the slope carrying wastewater effluent with it.
35. The installed system also does not meet section 8.1.1.4.1.1) a) of the Standard of Practice, which requires 1500 mm (5 ft.) of vertical separation when receiving primary treated effluent Level 1.

36. Numerous tests were conducted on groundwater samples collected from Appellant's and neighbour's property by labs located in both Edmonton and Calgary. These tests were performed by qualified individuals, and according to established protocols. The groundwater samples provided were never rejected as being compromised.
37. The Respondent submitted copies of these groundwater tests in its written submission to the appeal. The tests revealed the presence of high levels of coliform that were "too numerous to count," and an e-coli concentration consistent with recent fecal contamination.
38. Numerous attempts were made to rectify the situation before issuing the Order on the Appellant's property.
39. Video was presented related to the excavation of the tank. The video showed groundwater coming from underneath the appellant's house. The Municipality recommended the installation of a sump pump beside the tank as a result.

### **Reasons for Decision (Findings of Fact and Law):**

*The Appeal Panel makes the following findings:*

40. The Panel agrees that the Appellant's private sewage disposal system is leaking and is not meeting the objectives detailed in Section 1.1.3.1.1) a), b), and c) of the Standard of Practice.
41. The Panel agrees with and accepts the findings contained in the October 3, 2016 report prepared by Wastewater Company for the Municipality and points the following section which says:

*"Due to some potential shallow soil layers underneath the septic field (massive structure and/or bedrock formations) effluent could be accessing these layers and moving linearly down the slope and augmenting out the toe of the slope and augmenting out the toe of the slope"*

(Page 177 of the Respondent's submission)

To the Panel this indicates how the dye test is reaching the neighbour's property.

42. The Panel also accepts the suggestion that sloping conditions, groundwater levels in the area, and shallow soil layers under the septic field make it likely that ground water is migrating under the septic treatment field and carrying effluent down the slope. The Panel references the aforementioned report above. Specifically, the section that states evidence was found that the laterals had effluent ponding levels in them above the rock layer.

*"It was observed that the lateral(s) had effluent ponding levels in them from above the rock layer; even though the pump system was not connected. This could be due to limiting or restrictive soil layers underneath the septic field and could allow for linear movement of effluent out of the septic field to the toe area of the side of the hill."*



(Page 176 of Respondent's Submission)

The Panel agrees this is a direct link to ground water and does not meet vertical separation as per Section 8.1.1.4 of the Standard of Practice.

- 43.** The Panel agrees that the Appellant's private sewage disposal system does not meet the vertical separation requirements detailed in section 8.1.1.4.1) of the Standard of Practice. In addition to evidence contained in the October 3, 2016 report cited above, the Panel references the photographic evidence presented by the Appellant as part of their submission. Specifically, the photo titled "Shows water table from last year about 6 feet down beside our house, our house about 16 to 18 feet higher than neighbour's dugout house." This photo shows clear evidence that the vertical separation requirements in the Standard of Practice have not been met.
- 44.** The Panel agrees that the Appellant's private sewage disposal system does not meet the objectives defined in section 2.1.1.3.1) of the Standard of Practice. These objectives require the treatment of effluent prior to it coming in contact with groundwater, or, travelling to neighbouring properties.
- 45.** The Panel notes that there may be other factors at play in regards to the presence of e-coli. However, the tracer dye found in the surface water samples collected from the ditch link the Appellant's private sewage disposal system as a possible contributing factor to e-coli being found.
- 46.** The Panel can find no evidence that suggests that the water samples were not collected, nor the tests were not performed in accordance to established protocol.

Signed at the City Edmonton )

in the Province of Alberta )

this 29 Day of August A.D. 2017 )

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Chair, Plumbing Sub-Council Appeal Panel