# Outbreak of Norovirus at Silver Lake Elementary School --Silver Lake, Kansas, April 2008

Investigation by:
Shawnee County Health Agency
1615 SW 8th Ave.
Topeka, Kansas 66606
www.co.shawnee.ks.us/ha

Kansas Department of Health & Environment
Office of Surveillance and Epidemiology
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**Kansas Department of Health and Environment**
**Office of Surveillance and Epidemiology**

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**Reported by**
Titilayo Aghoghovbia

## Background

On April 18, 2008, Shawnee County Health Agency (SCHA) and Kansas Department of Health and Environment (KDHE) were notified of widespread gastrointestinal (GI) illness among students of Silver Lake Elementary School. Over 60 students were absent because of gastrointestinal symptoms that included vomiting, diarrhea and abdominal cramps on April 16 and 17. Teachers and other school staff were also affected.

Illness seemed limited to the one school in the affected county, although parents and siblings of some sick students were also affected.

KDHE and SCHA initiated an outbreak investigation to determine the cause of the illness and implement effective and appropriate prevention and control measures.

## Methods

*Laboratory and Clinical Investigation*

SCHA delivered 10 stool specimen kits to the school for distribution to symptomatic individuals for ova and parasites, bacterial and viral examination. Two kits were picked up and returned to SCHA for submission to the KDHE laboratories. The two specimens were from different households.

*Epidemiologic Investigation*
An initial linelist of ill persons was developed, documenting demographic data, grade, symptoms and date of onset. A preliminary epidemiologic curve developed from these data suggested a point source outbreak.

A retrospective cohort study was carried out. A questionnaire was developed by KDHE, to collect demographic information, food histories and information on symptoms and outcomes of illness. The questionnaires were delivered to the school by SCHA staff, to be self-administered, with parental assistance requested for grades three or lower. They were returned to the school and delivered by SCHA staff to KDHE for statistical analysis. Completed questionnaires were analyzed using SAS® 9.1.3. Aggregate descriptive analyses were performed and risk ratios (RR) and 95% confidence intervals (CI) were calculated to assess the association between exposures and subsequent illness.

Initially, a case was defined as vomiting or diarrhea in a student or staff member with an onset date between April 14 and April 22, 2008. The case definition was later refined when four sub-cohorts were developed for the four days school lunches that were served that week. The final revised case definition was then vomiting or diarrhea within 10 to 50 hours of consuming a particular school cafeteria meal.

A self-administered food-workers questionnaire was distributed to all the school's kitchen staff.

*Environmental Investigation*
KDHE's Bureau of Consumer Health staff inspected the school's kitchen and cafeteria. Water samples were also taken for analysis from the kitchen and bathrooms by the staff of KDHE's Northeast district office. The samples were tested for chlorine residuals and the presence of enteric coliforms.

**Results**

*Laboratory and Clinical Investigation*
Both stool specimens tested positive for norovirus genotype 2.

*Epidemiologic Investigation*
Questionnaires were returned by 306 out of 350 students (87%) and 57 out of 59 staff members (97%) (Table I).

**Table I: Characteristics of the study population (n=363)**

| | | Cases (n=134) | Non-cases (n=229) | Total (n=363) |
|---|---|---|---|---|
| Gender | | No. (%) | No. (%) | No. (%) |
| Students | Male | 66 (49) | 100 (44) | 166 (46) |
| | Female | 57 (43) | 83 (36) | 140 (39) |
| Teachers | Male | 0 (0) | 4 (2) | 4 (1) |
| | Female | 11 (8) | 42 (18) | 53 (14) |
| Age (years) | | | | |
| Students | Range | 5–13 | 5–13 | 5–13 |
| | Median | 10 | 9 | 9.5 |
| Teachers | Range | 25–61 | 21–58 | 21–61 |
| | Median | 44.5 | 45 | 44.5 |

A total of 134 persons met the initial case definition (i.e., reported vomiting or diarrhea between April 14 and April 22). Most of the respondents and ill persons were in grades 4-6 (Table II).

**Table II: Respondents and cases by grade**

| Grade | No. of respondents | No. met case definition (%) |
|---|---|---|
| Kindergarten | 41 | 3 (7) |
| 1 | 31 | 7 (23) |
| 2 | 33 | 17 (52) |
| 3 | 38 | 12 (32) |
| 4 | 46 | 26 (57) |
| 5 | 60 | 27(45) |
| 6 | 67 | 31 (46) |

Nausea (90%) and vomiting (88%) were the most common symptoms (Table III).

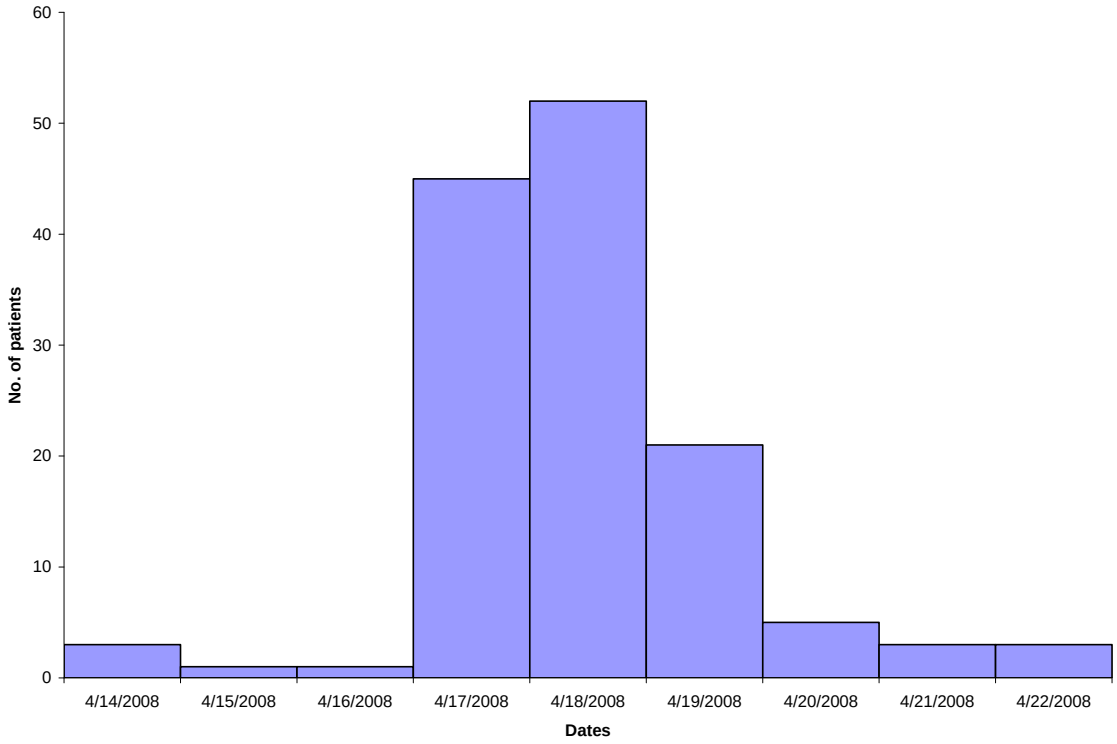
**Table III: Symptoms reported by cases**

| Symptom | No. (%) reporting symptom |
|---|---|
| Vomiting | 118 (88) |
| Diarrhea | 84 (63) |
| Nausea | 120 (90) |
| Abdominal cramps | 113 (84) |
| Fever | 44 (33) |

An epidemiologic curve of illness onset dates is shown in Figure I. It shows illness in an average of one to two persons per day from April 14–16, with a spike of illness on April

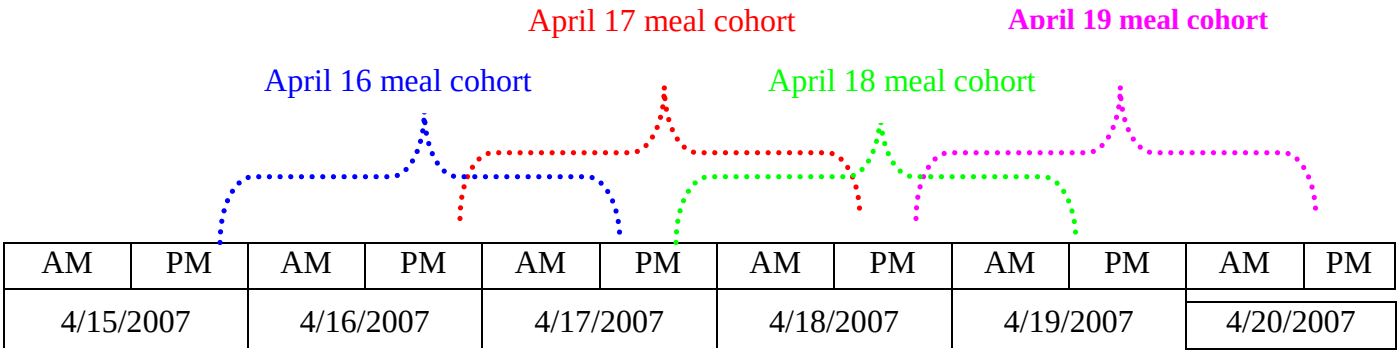
17, when 45 persons experienced symptoms. The outbreak peaked on April 18, when 52 persons first became ill, and subsequently began to wane dramatically, with only three new cases occurring on April 20 and 21. The epidemiologic curve supported the earlier suspicion of a point source outbreak.

Figure I: Epidemiologic curve of illness onset dates in cases




To determine if any meal or food item from the school cafeteria was statistically associated with illness, questionnaire respondents were grouped into sub-cohorts for analysis. Cases for each sub-cohort were defined as having vomiting or diarrhea from 10 hours after the beginning of the day's lunch period (which was 11:00 a.m.) to 50 hours after the end of the lunch period (which was 1:30pm). For example, a case in the April 16 sub-cohort would have eaten the April 16 lunch and developed symptoms between 9 pm on April 16 and 3:30p.m on April 18. Sub-cohorts for the April 15–18 lunches were thus developed. This classification process is illustrated in Figure II.

Figure II: Illness onset sub-cohorts grouped for analysis by cafeteria meal dates




Only April 17 was significantly associated with illness (Table IV), although April 16 approached statistical significance, and certain menu items eaten on April 16 were statistically associated with illness.

**Table IV. Relative risk of illness associated with school cafeteria meals, April 15-18, 2008**

| Meal Date | Total No. in Cohort | Ill persons (%) | Relative Risk | 95% Confidence Interval |
|---|---|---|---|---|
| April 15 | 271 | 13 (5) | 1.04 | 0.35–3.12 |
| April 16 | 291 | 66 (23) | 1.87 | 0.94–3.71 |
| April 17 | 236 | 61 (26) | 1.82 | 1.06–3.11 |
| April 18 | 187 | 28 (15) | 1.55 | 0.74–3.26 |

Several menu items were significantly associated with illness (Table V).

**Table V School cafeteria menu items and association with illness**

| Menu Item | Date Served | Ill/Exposed | (% Ill) | Ill/Not Exposed | (% Ill) | Relative Risk | 95% Confidence Interval |
|---|---|---|---|---|---|---|---|
| Tacos | April 15 | 9/194 | (5) | 5/134 | (4) | 1.24 | 0.41–3.83 |
| Lettuce | April 15 | 6/118 | (5) | 9/209 | (4) | 1.18 | 0.43–3.24 |
| Fruit | April 15 | 10/147 | (7) | 5/171 | (3) | 2.33 | 0.81–6.65 |
| Pretzel | April 15 | 11/186 | (6) | 4/146 | (3) | 2.16 | 0.70–6.64 |
| Juice | April 15 | 3/82 | (4) | 10/231 | (4) | 0.85 | 0.24–3.00 |
| Milk | April 15 | 13/253 | (5) | 2/76 | (3) | 1.95 | 0.45–8.46 |
| Peach | April 16 | 36/160 | (23) | 27/165 | (16) | 1.38 | 0.88–2.15 |
| Peas | April 16 | 16/60 | (27) | 51/270 | (19) | 1.41 | 0.87–2.30 |
| Birthday Cupcake | April 16 | 51/209 | (24) | 14/125 | (11) | 2.18 | 1.26–3.78 |
| Chicken Strips | April 16 | 64/241 | (27) | 4/96 | (4) | 6.37 | 2.39–17.02 |
| Milk | April 16 | 63/273 | (23) | 4/63 | (6) | 3.63 | 1.37–9.61 |
| Corn | April 17 | 31/99 | (31) | 45/197 | (23) | 1.37 | 0.93–2.02 |
| Kiwi fruit | April 17 | 27/87 | (31) | 48/208 | (23) | 1.35 | 0.90–2.00 |
| Apple | April 17 | 25/96 | (26) | 48/197 | (24) | 1.07 | 0.70–1.62 |
| Milk | April 17 | 62/222 | (28) | 13/76 | (17) | 1.63 | 0.95–2.80 |
| Barbeque Rib | April 17 | 56/160 | (35) | 19/140 | (14) | 2.58 | 1.61–4.12 |
| Potato | April 17 | 51/141 | (36) | 24/153 | (15) | 2.31 | 1.50–3.54 |
| Beef Stroganoff | April 18 | 14/94 | (15) | 20/146 | (14) | 1.09 | 0.58–2.05 |
| Green Beans | April 18 | 7/65 | (11) | 27/174 | (18) | 0.69 | 0.32–1.52 |
| Pears | April 18 | 16/96 | (17) | 17/144 | (12) | 1.41 | 0.75–2.66 |
| Milk | April 18 | 24/176 | (14) | 9/66 | (14) | 1.00 | 0.49–2.03 |
| Rolls | April 18 | 19/116 | (17) | 14/126 | (11) | 1.47 | 0.78–2.80 |

Questionnaires were completed by all food workers. One reported vomiting and nausea on April 20; none reported illness prior to April 14.

*Environmental Investigation*

A hand washing violation was observed by the food inspectors during the facility inspection. Water specimens taken from the kitchen and bathrooms tested negative for enteric coliforms, and had normal chlorine residuals.

## Discussion

This was a norovirus outbreak in a public elementary school, involving staff and students. The U.S. Centers for Disease Control and Prevention (CDC) estimates that 23 million cases of acute gastroenteritis (AGE) are due to norovirus infection and that at least 50% of all foodborne outbreaks of gastroenteritis can be attributed to noroviruses. [1] Noroviruses are highly contagious, with as little as 10 virus particles sufficient to cause

infection. They are transmitted primarily through the fecal-oral route, but can also be spread through person to person contact, and the aerosolization of vomitus. Outbreaks are often associated with fecally contaminated ready-to-eat foods, like salads, sandwiches and fruits. Humans are the only known reservoir of the virus.

The data collected suggests a point source outbreak of norovirus, with some person-to-person spread at the beginning and tail of the outbreak. However, even though only one date (April 17) was statistically associated with the outbreak, multiple menu items on multiple days were significantly associated with illness, including meals that are not usually vehicles of norovirus transmission, such as cooked meals that do not require handling post-preparation. This suggests a spurious association, and that it is more likely that norovirus was spread through several menu items, and possibly over more than one day.

Simple measures, including correct handling of cold foods, strict hand washing after using the bathroom and before handling food items, strict adherence to no bare hand contact with ready to eat foods, and excluding employees with gastrointestinal illness from food handling may substantially reduce foodborne transmission of noroviruses

*Strengths of the investigation*
Because of the high response rate, the risk of illness could be directly assessed. Human specimens were promptly collected, with the laboratory results of the human specimens confirming the cause of the outbreak. The environmental investigation, including collection of water samples, was also promptly done.

*Limitations of the investigation*
The cohort study was carried out one week after the event; it is possible that food histories and clinical histories in some students (especially in the lower grades) were as a result inaccurate or incomplete.

This was a take-home questionnaire; students absent on the day the questionnaires were distributed did not participate.

Food samples were not available for testing to confirm statistically implicated menu items as vehicles of transmission. However, norovirus is notoriously difficult to detect in foods.

**Acknowledgements**
The investigators of this outbreak thank the school staff, the Shawnee County Health Agency, and KDHE for the assistance provided during this investigation. KDHE is grateful for the assistance provided by the students and their parents in completing outbreak questionnaires and obtaining stool specimens for testing

**References**

[1]Mead PS. Food related illness and death in the United States. Emerging Infectious Diseases, 1999. 5(6):607-625.

[2] Centers for Disease Control and Prevention. “Diagnosis and Management of Foodborne Illnesses: A Primer for Physicians and other Health Care Professionals.” MMWR 2004:53

Please fill out this form. We want to figure out why some students and staff are sick and some are not. Answer all the questions even if you didn't get sick. Ask your teacher or parent if you need help. Your personal information will not be shared with anyone. Other answers will be combined and reported out as a group.

**1. Last Name: _____ 2. First Name: _____**

**3. Are you a:** ❑ Male ❑ Female **4. Age:** _____Years

**5. What grade are you in?**
- ❑ Teacher / Staff
- ❑ Kindergarten
- ❑ 1st Grade
- ❑ 2nd Grade
- ❑ 3rd Grade
- ❑ 4th Grade
- ❑ 5th Grade
- ❑ 6th Grade

**6. What is your teacher's name? _____**

**7. Did you eat the school lunch on Tuesday, April 15**?
❑ Yes ❑ No

**Please mark yes to the foods you ate, no to the foods you didn't eat, and if you don't remember mark that you can't remember.**

| | **Yes** | **No** | **Can't remember** |
|---|---|---|---|
| Ate Taco Bites? | ❑ | ❑ | ❑ |
| Ate Lettuce? | ❑ | ❑ | ❑ |
| Ate Cheese? | ❑ | ❑ | ❑ |
| Ate Fruit? | ❑ | ❑ | ❑ |
| Ate Pretzel? | ❑ | ❑ | ❑ |
| Drank Juice? | ❑ | ❑ | ❑ |
| Drank Milk? | ❑ | ❑ | ❑ |

Other? Please list: _____

**8. Did you eat the school lunch on Wednesday, April 16**?
❑ Yes ❑ No

**Please mark yes to the foods you ate, no to the foods you didn't eat, and if you don't remember mark that you can't remember.**

| | **Yes** | **No** | **Can't remember** |
|---|---|---|---|
| Ate Chicken Strips? | ❑ | ❑ | ❑ |
| Ate Peas? | ❑ | ❑ | ❑ |
| Ate Peach? | ❑ | ❑ | ❑ |
| Ate Roll? | ❑ | ❑ | ❑ |
| Ate Birthday Cup Cake? | ❑ | ❑ | ❑ |
| Drank Milk? | ❑ | ❑ | ❑ |

Other? Please list: _____

**9. Did you eat the school lunch on Thursday, April 17**?

❑ Yes ❑ No

**Please mark yes to the foods you ate, no to the foods you didn't eat, and if you don't remember mark that you can't remember.**

| | **Yes** | **No** | **Can't remember** |
|---|---|---|---|
| Ate BBQ Rib Sandwich? | ❑ | ❑ | ❑ |
| Ate Jo Jo Potatoes? | ❑ | ❑ | ❑ |
| Ate Corn? | ❑ | ❑ | ❑ |
| Ate Kiwi? | ❑ | ❑ | ❑ |
| Ate Apple? | ❑ | ❑ | ❑ |
| Drank Milk? | ❑ | ❑ | ❑ |

Other? Please list: _____

**10. Did you eat the school lunch on Friday, April 18**?

❑ Yes ❑ No

**Please mark yes to the foods you ate, no to the foods you didn't eat, and if you don't remember mark that you can't remember.**

| | **Yes** | **No** | **Can't remember** |
|---|---|---|---|
| Ate Beef Stroganoff? | ❑ | ❑ | ❑ |
| Ate Mashed potatoes? | ❑ | ❑ | ❑ |
| Ate Green Beans? | ❑ | ❑ | ❑ |
| Ate Rosy Pears? | ❑ | ❑ | ❑ |
| Ate Roll? | ❑ | ❑ | ❑ |
| Drank Milk? | ❑ | ❑ | ❑ |

Other? Please list: _____

**11. When did you first feel ill?**

**Monday, April 14** ❑
**Tuesday, April 15** ❑
**Wednesday, April 16** ❑
**Thursday, April 17** ❑
**Friday, April 18** ❑
**Saturday, April 19** ❑

**12. What time did you become sick?** ___:___ ❑ pm ❑ am

**13. Did you have diarrhea?** ❑ Yes ❑ No ❑ Don't know

**14. Did you have bloody diarrhea?** ❑ Yes ❑ No ❑ Don't know

**15. Did you vomit?** ❑ Yes ❑ No ❑ Don't know

**16. Did you have stomach cramps?** ❑ Yes ❑ No ❑ Don't know

**17. Did you have nausea?** ❑ Yes ❑ No ❑ Don't know

**18. Did you have fever?** ❑ Yes ❑ No ❑ Don't know

**19. Did you feel anything else? _____**

**20. Did you see a doctor?** ❑ Yes ❑ No

**21. Did you go to the hospital?** ❑ Yes ❑ No

**22. Are you still sick?** ❑ Yes ❑ No

**23. What day did you feel better?**

Tuesday, April 15 ❑
Wednesday, April 16 ❑
Thursday, April 17 ❑
Friday, April 18 ❑
Saturday, April 19 ❑

**24. Has anyone else at home been sick with vomiting or diarrhea since Monday, April 14?**
❑ Yes ❑ No

If yes, please list their name and mark who they are:

Name: _____ Mom❑ Dad❑ Brother or Sister❑ Other❑

Name: _____ Mom❑ Dad❑ Brother or Sister❑ Other❑

Name: _____ Mom❑ Dad❑ Brother or Sister❑ Other❑

**25. Is there anything else you want to tell us?**

_____

_____

_____

***Thank you for completing the survey.***

# KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT

FPCS Form 806

## Food Service Establishment Inspection Report

| # of Critical Violations | 1 |
|---|---|
| Re-inspection Required | Y (N) |
| Re-inspection Date | |

Insp. Date: 4/21/08
Time In: 9:55AM
Time Out: 11:15AM
Travel Time 20 Min.

| Inspector # | ID# | Type | Purpose | RAC: 1 ☐ 2 ☒ 3 ☐ |
|---|---|---|---|---|
| KS42 | 10380 | 201 | 03 | |

Establishment: Silver Lake Elementary Owner: USD #372

Address: 200 Rice Rd. City: Silver Lake KS

County: SN Zip: 666539 Phone: (785) 582-4081

| Compliance Status | R | Code Ref | COS | Potentially Hazardous Food Time & Temp<br>Violations Require Immediate Corrective Action | Observation |
|---|---|---|---|---|---|
| Y N N/O (N/A) | | | Y N | 1. Cooling | |
| (Y) N N/O N/A | | | Y N | 2. Cold Hold (41 F / (45 F)) | |
| (Y) N N/O N/A | | | Y N | 3. Hot Hold (140 F) | |
| Y N (N/O) N/A | | | Y N | 4. Proper Cooking Temp PHF | |
| (Y) N N/O N/A | | | Y N | 5. Reheating for Hot Holding | |
| (Y) N N/O N/A | | | Y N | 6. Date Marking---PHF | |
| (Y) N N/O N/A | | | Y N | 7. Date Marking Disposition | |
| | | | | | |
| | | | | | |

| Food/Location | Temp °F | Amb't Air | Food/Location | Temp °F | Amb't Air | Food/Location | Temp °F | Amb't Air |
|---|---|---|---|---|---|---|---|---|
| Green beans / warmer | 180° | | | | | | | |
| Ham sandwich / oven at 350 | 136° | | | | | | | |
| Milk / milk cooler | 37° | | | | | | | |
| Milk / WIC | 38° | 38° | | | | | | |
| no items / Maytag | | 40° | | | | | | |
| ~~Green beans~~ | | | | | | | | |

| Compliance Status | R | Code Ref | COS | Personnel/Handling/Source/Records<br>Violations Require Immediate Corrective Action *(or as directed)* | Observation |
|---|---|---|---|---|---|
| (Y) N | | | Y N | 8. Personnel Restricted / Excluded / Reporting | |
| (Y) N | | | Y N | 9. Discharge from eyes, nose and mouth | |
| (Y) N N/O | | | Y N | 10. Demonstration of Knowledge | |
| Y (N) | | 2301.14E | (Y) N | 11. Handwashing-When Employee handled soiled floor mats, then | |
| (Y) N N/O | | | Y N | 12. No Bare hand / RTE Foods | |
| (Y) N | | | Y N | 13. Personnel Practices (Eating / Drinking / Smoking) | |
| (Y) N | | | Y N | 14. Adulteration / Sound Condition | |
| Y N (N/O) | | | Y N | 15. Discard Adulterated Foods | |
| (Y) N | | | Y N | 16. Food Source / Food Law | |
| Cont. #11 | | | | handled clean cutting boards + knives. No handwash | |
| | | | | | |

Distribution: Department Copy –White Establishment Copy–Pink Inspector Copy–Yellow

Date: 4/21/08 Est.: Silver Lake Elementary City/Co. Silver Lake ISD ID# 10380

| | | | | | |
|---|---|---|---|---|---|
| Y N N/O N/A | | | Y N | 17. Cross-Contamination Raw & RTE Foods |
| Y N | | | Y N | 18. Water-Capacity / Hot & Cold |
| Y N | | | Y N | 19. Water-Under Pressure / Fixtures |
| Y N N/O N/A | | | Y N | 20. Receiving Temp / Condition |
| Y N N/A | | | Y N | 21. Records-- tags, HACCP plans, processing, labeling |
| | | | | |

| Compliance Status | R | Code Ref | COS | Facility & Equipment Requirements/Good Retail Practices (GRP) Violations Require Immediate Corrective Action *(or as directed)* Observation |
|---|---|---|---|---|
| Y N N/O N/A | | | Y N | 22. Pasteurized Foods / Susceptible Population |
| Y N N/A | | | Y N | 23. Additives / Unapproved |
| Y N | | | Y N | 24. Insect / Rodent-Presence / Infestation |
| Y N N/O N/A | | | Y N | 25. Potable Water |
| Y N | | | Y N | 26. Handwash Sink: No. / Loc / Acc |
| Y N | | | Y N | 27. Food Contact Surfaces Clean |
| Y N N/O N/A | | | Y N | 28. Food Contact Surfaces Sanitized |
| Y N | | | Y N | 29. Adequate Warewashing Facilities |
| Y N N/A | | | Y N | 30. Manual Warewashing / Sanitizing (200) ppm/temp Quat |
| Y N N/A | | | Y N | 31. Mechanical Warewashing / Sanitizing (168) ppm/temp |
| Y N | | | Y N | 32. Toxic Items Stored |
| Y N | | | Y N | 33. Toxic Items Labeled / Used |
| Y N | | | Y N | 34. Adequate Sewage / Disposal System |
| Y N | | | Y N | 35. Toilet Facilities |
| Y N | | | Y N | 36. Backflow / Airgap |
| Y N N/A | | | Y N | 37. Consumer Advisory |
| Y N N/A | | | Y N | 38. Approved Systems (HACCP / Time as PHC) |
| | | | | |
| | | | | |

**Good Retail Practices (GRP)**
GRP's are preventative measures to control the addition of pathogens, chemicals, and physical objects into foods. See page 3 for comments.

| Compliance Status | R | COS | Code Ref | GRP | Compliance Status | R | COS | Code Ref | GRP |
|---|---|---|---|---|---|---|---|---|---|
| Y N | | | 2-304.11 | 39. Personal Cleanliness | Y N | | | 4-602.13 | 48. Non-Food Contact Surfaces Clean Frequency |
| Y N | | Y | 3-304.12 | 40. In-Use / Between-Use Utensils Storage | Y N | | | 5-501.15 | 49. Outside Receptacles |
| Y N N/O N/A | | | 3-304.14 | 41. Wiping Cloths | Y N N/O N/A | | | 6-202.13 | 50. Insect Control Devices |
| Y N N/O N/A | | | 3-304.15 | 42. Glove-Use | Y N | | | 6-301.11 | 51. Soap Availability |
| Y N N/O N/A | | | 3-401.13 | 43. Plant Food Cooking | Y N | | | 6-301.12 | 52. Hand Drying Provisions |
| Y N N/O N/A | | | 3-501.13 | 44. Thawing | Y N | | | 6-501.11 | 53. Physical Facility Condition |
| Y N | | | 4-302.12 | 45. Food Temp Measuring Device | Y N | | N | 6-501.12 | 54. Cleaning Frequency ≥10 old mice droppings und |
| Y N N/A | | | 4-302.14 | 46. Sanitizer Test Strips | Y N N/O N/A | | | 6-501.112 | 55. Removing Dead Pests |
| Y N | | | 4-601.11C | 47. Non Food Contact Surfaces Clean | Y N | | | 8-304.11 | 56. Current License Displayed |

Date: 4/21/08 Est.: Silver Lake Elementary City/Co. Silver Lake/SN ID# 10380

| Status or Item # | R | Code Ref | COS | Other Violations (Cont.) Violations Require Correction as Indicated | Observation |
|---|---|---|---|---|---|
| | | | | | |

Inspector Comments / Corrections

Serving times:

1st 11:30 - 12:05
5th 11:35 - 12:10
2nd 11:45 - 12:20
3rd 12:00 - 12:35
4th 12:10 - 12:45
6th 12:15 - 12:50

No Breakfast served @ school

**COMPLIANCE ACTION**

| | |
|---|---|
| NONC Issued | Y (N) |
| Administrative Review | Y (N) |
| RCP Recommended | Y (N) |
| Voluntary Closure | Y (N) |
| Voluntary Destruction | Y (N) |

**HANDOUT NUMBERS**

2, 4, 54

**EDUCATION / TRAINING**

Y (N)

**Licensing Information Only**

*(Initial if Requirements are met.)*

Inspector_____
District Mgr._____
New Facility Y N
Plan Reviewed Y N
In Operation Y N
Operation Begins_____

Complete App Y N
Left Application Y N
Total Amount Due $_____
Fees Collected $_____
Method of Payment:
Check # _____
Cash Discover Card

Inspector (Signature) Jessica Wrosch (Print) Jessica Wrosch

Person In Charge (Signature) [redacted] (Print) [redacted]

Distribution: Department Copy –White Establishment Copy–Pink Inspector Copy–Yellow

**COMPLAINT/REFERRAL FORM** Kansas Department of Health and Environment - Division of Environment

This form is to be completed on All complaints received by or referred to the District offices. BEFS Reference #: 08-194

___BAR ___BOW ___BER ___BWM

**Time Rec'd:** 4pm **Person Rec'ing:** Vic Montgomery

**Date Rec'd:** 4-22-2008 **Organization of Person Rec'ing:**

Example: USEPA/Region 7, Water Compliance, KDHE/BOW

**Source:** __x_Telephone ___Written (attach copy) ___ Other (specify) e-mail

**Received From:** Name: Anonymous through Titi Aghoghoubia, Dept of Epidemiology, KDHE

Address:

City:

Telephone: *Day*: *Night*:

**Name of Person/Facility:** Silver Lake Elementary School

Address:

City: Silver Lake County: Shawnee

**Legal:** 1/4 1/4 1/4 **Sec.** **Twp.** **Range**

Other Directions:

**Description:** (Please describe the complaint, concern or issue to be addressed by this referral.)

Larger than normal number of 4th and 6th graders either didn't go to school or went home sick on April 19th with an unidentified gastrointestinal distress. Among the items the district was looking at for cause was the water supply. Titi A. requested we check out the water.

**TO BE COMPLETED BY DISTRICT**

**Referred To:** **Time:** **Date:**

**Action Required:** ___ Response Required __Investigation Required ___ Other (Specify)

**Response:** (When response is completed, complete this section, date & sign. Return a completed copy to BEFS & appropriate Bureau.)

April 23, 2008, 9am, I met with [redacted]. We checked out the city chlorination house where the water is disinfected prior to entering the distribution system for customer use. The chlorine residual records were up to date and matched what I had measured in town, 0.8 mg/l free chlorine. The school softens all the water entering the school, the lowest chlorine residual measured in the school was 0.5 mg/l free which is well above the minimum required. Bacteriological samples were collected in the boys bathrooms used by the 4th and 6th graders, the kitchen and a sink in the first grade section. All samples were negative for coliform bacteria.

The only problem observed in my inspection was in the teacher area (not available for student use) at each building. A home filtering system had been installed multiple years ago for the teachers to use. None of the devices had ever been maintained, school personnel said they were told maintenance would never be needed. Most manufacturer recommend changing the prefilters at least yearly and the membrane every one to two years.

Attachements – newspaper article, sample result sheets, RO onformation.

**Date:** 4/23/2004 **Signature:** *H. Vic Montgomery*

CC: BEFS-Topeka ___ BAR___ BER___ BOW_x__ BWM___ NEDO___ Julie Coleman __