

Affidavit of Nick Cooper**Level of Effort Conducted and Possible Identified Facilities for the Franklin Street Ground Water Contamination Site**

As an employee of the State of Indiana, I worked as a Senior Environmental Manager with the Indiana Department of Environmental Management, Site Investigation Program of the Federal Program Section. Under a Cooperative Agreement with the U. S. EPA, I assessed potential hazardous waste sites under the auspices of the Comprehensive Environmental Response Compensation Liability Act (CERCLA) that may pose a threat to human health and the environment.

From 2014 through 2016 I completed a Preliminary Assessment (PA) and collected ground water and soil samples for a Site Inspection (SI) and an Expanded Site Inspection (ESI). As part of the PA, SI and ESI activities I extensively searched historical county maps, phone and city directories, and Sanborn Maps at the Indiana State Library, conducted numerous interviews with local citizens, and conducted reconnaissance visits in Spencer, Indiana in an attempt to identify possible sources that may have contributed to the chlorinated solvents that have impacted the Bean Blossom Patricksburg Municipal Wells #1, #2, and #3. Additional facilities were identified in a review of the Wellhead Protection Plan for the municipal wellfield.

The information I obtained from the State Library, the Wellhead Protection Plan, interviews, and the reconnaissance visits was used to collect environmental samples at strategic locations during the SI and ESI. Below is a summary of the level of effort that I performed for the SI and ESI sampling events in an attempt to identify attribution from possible sources of ground water contamination. Additional information regarding the activities that I completed for the PA, SI and ESI can be found in those reports. Statements regarding upgradient, downgradient, depth of wells, etc. that are mentioned in this affidavit were confirmed and attested to by Jeff Bahling, an IDEM Geologist. Refer to Reference 59 for Jeff Bahling's affidavit.


Nick Cooper

6/19/17
Date

LEVEL OF EFFORT AND ATTRIBUTION

PreCERCLIS/Preliminary Assessments

As a result of 2011 and 2012 perchloroethylene (a.k.a. tetrachloroethylene, or PCE) detections in the finished water from the BBP wellfield, IDEM Site Investigation staff completed a Pre-CERCLA Screening (PCS) in January 2013. A Preliminary Assessment (PA) Report was completed in December 2014. As part of the PA, IDEM staff sampled untreated raw water from BBP's southern wellfield at Wells #1, #2, and #3. PCE was detected in ground water from all three (3) wells, and exceeded the EPA Drinking Water MCL at Well #2.

From the PA, several facilities that utilize PCE, including three (3) historical dry-cleaners, were identified within the town of Spencer. Miller's Cleaners, Ranard's Cleaners, and Richardson Cleaners were the only known dry cleaning locations in Spencer. The dry-cleaners were identified using historical county maps, phone directories, and interviews with local residents. The most recent dry-cleaner operated from the early 1980s until 2002 and was located less than 0.5-mile northeast of the well field. Other potential sources were identified in the Wellhead Protection Plan (WHPP) completed for BBP in Spencer, Indiana in 2001. The revised WHPP (Ref. 10) and associated site reconnaissance efforts identified additional potential sources of contamination within the wellhead protection area (WHPA).

Site Inspection (SI)

IDEM staff conducted an SI June 23-24, 2015 (Ref. 6, p 1). Ground water samples E2TG4, E2TG5, and E2TG6 were obtained from municipal wells BBP #1, #2, and #3, respectively. PCE was detected in each of the three (3) municipal drinking water wells at concentrations of 1.3 µg/L, 14 µg/L, and 0.71 µg/L for Well #1, #2, and #3, respectively (Table 2 of the Franklin Street Ground Water Contamination HRS Documentation Record, Figure 4).

One (1) groundwater (E2TJ8) and one (1) soil samples (E2TJ9) were collected from one (1) boring completed on the property of the former Ranard's Cleaners dry-cleaner (Ref. 6, p. 16). PCE was detected in the groundwater at a concentration of 220 µg/L (Table 2 of the Franklin Street Ground Water Contamination HRS Documentation Record, Figures 4, 5, 7, and 8). The subsurface soil sample, collected above the water table, was found to have a PCE concentration of 4 ug/kg (Ref. 6, pp. 16, 35, 534). This result is inconclusive of a source because the detection was below the CRQL.

One (1) ground water sample (E2TG8), downgradient from ground water sample E2TJ8, was collected from a private residential well located at 203-211 South Main Street. This private well, not used for drinking water, is located approximately 0.19-mile southwest, downgradient, from the former Ranard's Cleaners as discussed above and also downgradient from a second former dry-cleaning facility, Miller Cleaners. PCE was detected in the sample at a concentration of 140 µg/L (Table 2 of the Franklin Street Ground Water Contamination HRS Documentation Record; Figures 4, 5, 6, and 7).

One (1) groundwater (E2TH4) and one (1) soil sample (E2TH5) was collected from one (1) soil boring completed on the Spencer Presbyterian Church property located at 156 North Main Street. This ground water sample was obtained upgradient to the former Miller Cleaners/Raynards Cleaners properties. PCE was detected at a concentration of 0.15 µg/L in this sample, indicating other nearby sources (Table 1 of the Franklin Street Ground Water Contamination HRS Documentation Record; Figures 4, 5, 6, and 7). The detection in this sample was below the CRQL.

Although PCE was detected in sample E2TG8, downgradient from Ranard's Cleaners and Millers Cleaners, it could not be determined that the PCE was emanating from the former Ranard's/Miller Cleaners. Another source may be present as indicated by the presence of PCE in the upgradient ground water sample (E2TH4).

Two (2) groundwater samples (E2TJ4 and E2TJ6) and two (2) soil samples (E2TJ5 and E2TH7) were collected from one (1) soil boring completed on the Demil property located at 640 East Franklin Street. The Demil property operates a Humvee demilitarization and dismantling facility. PCE was detected in groundwater at concentrations of 0.22 µg/L and 0.19 µg/L in samples E2TJ4 and E2TJ6, respectively (Ref. 6, pp. 190, 194; Figures 4, 5, 6, and 7). The reported concentrations of PCE were below the CRQL. No detections of chlorinated VOCs were detected in the subsurface soils and no source area(s) could be confirmed.

One (1) ground water sample (E2TJ2) and one (1) subsurface soil sample (E2TJ3) were collected from the property of the former Richardson Cleaners dry-cleaner facility. PCE was detected at 180 µg/l in the ground water sample (Table 2 of the Franklin Street Ground Water Contamination HRS Documentation Record, Figure 4). PCE was detected at 1,200 µg/kg in the subsurface soil sample (Ref. 6, p. 188; Figures 4, 5, 6, and 7). The subsurface soil sample result may be biased. The subsurface soil sample was obtained first by the direct push probe. At that time the borehole where the subsurface soil was collected was dry. However, the ground water table later rose above the interval where the subsurface soil was collected indicating that the soil sample may not have been collected from above the true water table.

Based on the on-site ground water sample results, the fact that the water table rose above the subsurface soil sample interval (indicating that the subsurface soil sample may have been collected in the contaminated portion of the aquifer), and that PCE was detected in the background ground water sample (see next paragraph), it is not possible to conclude the contaminated subsurface soil is from the former dry-cleaner.

One (1) groundwater sample (E2TH0) was collected from a private residential well located at 851 East Franklin Street. This sample was collected as a background sample to E2TJ5, E2TJ6, and E2TJ2. No well record exists for this well and the total depth is unknown. PCE was detected in this well at a concentration of 0.33 µg/L (Ref. 6, p. 172; Figures 4, 6, and 7). The PCE detection was below the CRQL. The detection of PCE at this location may indicate that other unidentified sources are present upgradient to Richardson Cleaners and the Demil facility. However it also MAY indicate that the contamination from Demil has just migrated over slightly in that direction where sample E2TH0 was obtained.

One (1) ground water sample (E2TJ0) and one (1) soil sample (E2TH3) were collected from Spencer Coin Operated Laundry facility. The Spencer Coin Laundry is located approximately 0.25-mile west of the former Ranard's Cleaners. PCE was detected in ground water sample E2TJ0 at 5.7 ug/L (Table 2 of the Franklin Street Ground Water Contamination HRS Documentation Record, Figure 4); however, no detections of chlorinated VOCs were detected in the subsurface soil sample E2H3 (Ref. p. 176; Figures 4, 5, 6, and 7).

One (1) groundwater sample (E2TH1) was collected from a private residential well located at 1391 South Pottersville Road. The sample was collected as a background sample south of the impacted PPB municipal wells. This well was installed in 1968 and has a total depth of 76 feet bgs. No VOCs were detected in this sample (Ref. 6, pp. 173, 174; Figures 4, 6, and 7).

Additional Investigations

After the SI was completed, additional direct-push drill rig sampling was completed in the BBP Water Corporation's wellfield by IDEM's Drinking Water Branch on June 25 and August 5, 2015. The sampling included a total of six (6) soil borings, from which twelve (12) total groundwater samples were collected (Ref. 6, pp. 19, 20).

These borings were completed to help determine from which direction the groundwater plume was entering the wellfield. Multiple groundwater samples were collected from each boring, including a shallow and a deep sample from each boring. The table below lists the boring number, ground water sample ID, and the depth that those samples were obtained.

Boring #	Sample ID	Depth (ft)
1	DK32000	60
1	DK32001	30
2	DK32002	64
2	DK32003	34
3	DK32004	59
3	DK32005	29
4	DK32007	29.5
4	DK32008	59.5
5	DK32009	29.5
5	DK32010	59.5
6	DK32011	29.5
6	DK32012	59.5
Test Well	DK32006	89

No PCE was detected in any of the groundwater samples. A map showing the locations of these borings and the analytical results from these samples can be found in Ref. 6, pp. 778 through 1505. Non-detections of chlorinated VOCs in the ground water from these borings (Ref. 6, pp. 781-798), which were collected relatively shallow compared to the completion depths of BBP Wells #1, #2, and #3, may indicate that the PCE ground water plume is migrating vertically downward between the source(s) and the municipal well field.

Expanded Site Inspection (ESI)

On April 18-19, 2016, IDEM staff conducted a ground water and subsurface soil sampling ESI. A total of 15 ground water samples and 10 subsurface soils samples were collected for laboratory analyses.

One (1) groundwater sample (E2W52) and one (1) soil sample (E2W53) were collected from a soil boring located on town of Spencer right-of-way property near the corner of East Hillside Avenue and North Central Avenue. These samples were collected to determine if any contamination could potentially be associated with Boston Scientific, a medical instrument manufacturing plant, and as a possible background sample. No chlorinated VOCs were detected in the groundwater or soil sample at this location (Ref. 10, pp. 295, 296; Figures 4, 5, 6, and 7). It should be noted that since ground water sample E2W52 was analyzed outside holding times, this sample could not be used. Therefore, any possible detections of VOCS from an upgradient source could not be confirmed.

One (1) groundwater (E2W54) and one (1) soil sample (E2WS55) were collected from a soil boring located on town of Spencer right-of-way property near State Road 46, approximately 200 feet west of Crane Avenue and east of Fairview Avenue. These samples were collected as background for samples from this ESI investigation and the 2015 SI investigation. No chlorinated VOCs were detected in the groundwater or soil sample at this location (Ref. 10, pp. 299,300; Figures 4, 5, 6, and 7). It should be noted that since ground water sample E2W54 was analyzed outside holding times, this sample could not be used. Therefore, any possible detections of VOCS from an upgradient source could not be confirmed.

One (1) groundwater sample (E2W56) and one (1) soil sample (E2W57) were collected from a soil boring located on town of Spencer right-of-way property on North Harrison Street (west side of street), between East Hillside Street and East North Street. These samples were collected as a background sample for samples collected during the 2015 SI investigation. No chlorinated VOCs were detected in the groundwater or soil sample at this location (Table 1 of the Franklin Street Ground Water Contamination HRS Documentation Record; Figures 4, 5, 6, and 7).

One (1) groundwater (E2W66) and one (1) soil sample (E2W67) were collected from a soil boring located on town of Spencer right-of-way property near the Owen County Heritage Museum on the corner of South Washington and East Market Streets. These samples were collected as a potential source sample to see if any contamination existed and was moving off-site from a printing business located immediately upgradient in the direction of groundwater flow from the sample location. No chlorinated VOCs were detected in the groundwater or soil sample at this location (Ref. 10, pp. 319, 320, 321, 322; Figures 4, 5, 6, and 7).

Due to the detection of PCE in the ground water at the Spencer Coin Laundry (401 West Morgan Street), downgradient samples were collected during the ESI across the street to the south at a current Circle-K gas station (formerly Crystal Flash) located at 404 West Morgan Street (Figure 4 of this HRS Documentation Record). Due to past petroleum releases, a monitoring well network was established at 404 West Morgan Street and on surrounding properties (Ref. 10, pp. 41, 20-21). Monitoring wells MW-5 and MW-10 from this network were sampled during the ESI (Ref. 10, pp. 41, 20-21, 719-720, 692-694). PCE and trichloroethylene (TCE) were detected in Sample # E2W70 (MW-5) at 1.7 µg/L and 1.2 µg/L, respectively (Table 2 of this HRS Documentation Record, Ref. 10, pp. 20-21). The Spencer Coin Laundry facility is located approximately 150 feet north (upgradient) of MW-5. Based on the direction of groundwater flow and relative concentrations reported at the laundry and downgradient petroleum facility, the laundry facility at 401 West Morgan Street has likely contributed to the contaminant plume affecting the Circle-K facility, and possibly the BBP well field (Ref. 10, p. 324; Figures 4, 6, and 7).

A second ground water sample (E2W71) was collected from MW-10, south and downgradient to E2W70, which is also considered downgradient to the Spencer Coin Laundry. No chlorinated VOCs were detected in a ground water sample collected from this monitoring well (Ref. 10, pp. 394, 395; Figures 4, 6, and 7). The Spencer Coin Laundry property could not be confirmed as a possible source.

One (1) groundwater sample (E2W58) and one (1) soil sample (E2W59) were collected from a soil boring located on town of Spencer right-of-way property on West Indiana Avenue (north side of street), approximately 200 feet west of North Wolf Street. These samples were obtained upgradient to the Spencer Coin Laundry and as a background sample for Circle-K/Crystal Flash gas station. PCE was detected in the groundwater sample at a concentration of 0.27 µg/L (Ref. 10, p. 316; Figures 4, 5, 6, and 7). The concentration was below the CRQL. No VOCs were detected in the soil sample. The detection of PCE in the ground water at this location may indicate that additional unidentified source(s) may be present in the area. However it also MAY indicate that the contamination from Richardson's has just migrated over slightly in that direction where sample E2W58 was obtained.

Two (2) groundwater samples (E2W60 and E2W62) and two (2) soil samples (E2W61 and E2W63) were collected at 10 Fletcher Avenue. This soil boring was located approximately 200 feet east of where ground water sample E2TJ2 collected during the 2015 SI investigation. The boring at 7 Fletcher Avenue during the 2015 SI investigation identified PCE in groundwater at a concentration of 180 µg/L (Table 2 of the Franklin Street Ground Water Contamination HRS Documentation Record; Figures 4, 5, 6, and 7). This soil boring and sampling was conducted to determine if there was a potential source to the east of the former dry-cleaning location investigated during the 2015 SI. No chlorinated VOCs were detected in either soil sample (Ref. 10, p. 527, 528, 531, 532). PCE was the only chlorinated VOC detected in E2W60, however the detection was below the CRQL. The detection of PCE at this location may indicate that additional sources of chlorinated VOCs may be present upgradient to the former Richardson Cleaners facility. However it also MAY indicate that the contamination from

Richardson's has just migrated over slightly in that direction where samples E2W60 and E2W62 were obtained.

One (1) groundwater (E2W64) and one (1) soil sample (E2W65) were collected from a soil boring located at the vacant lot at 157 East Jefferson Street. These samples were collected to determine if downgradient migration of PCE from the former Richardson Cleaners had occurred. No chlorinated VOCs were detected in the soil or ground water samples collected at this location indicating that PCE may not have migrated to this area from the former Richardson Cleaners property or that the downgradient plume may be migrating vertically downward (Ref. 10. Pp. 533, 534, 535, 536; Figures 4, 5, 6, and 7). As a result, the former Richardson Cleaners cannot be confirmed a possible source.

One (1) groundwater (E2W68) and one (1) soil sample (E2W69) were collected from a soil boring located on town of Spencer right-of-way property near the corner of West Wayne and South Montgomery Streets. These samples were collected to show possible downgradient migration from potential sources identified in the 2015 SI investigation. This sample was collected approximately 275 feet southwest of a private residential well where PCE contamination was discovered during the 2015 SI investigation. No chlorinated VOCs were detected in the groundwater or soil sample at this location (Ref. 10 537, 538, 539, 540; Figures 4, 5, 6, and 7), indicating no evidence of PCE migration downgradient from the private well where sample E2TG8 was collected during the SI. It is possible that the PCE detected in the private well may be migrating vertically downward and therefore not detected in sample E2W68.

One (1) groundwater (E2W76) and one (1) soil sample (E2W77) were collected from a soil boring located on town of Spencer right-of-way property on the south side of the West Jefferson Street, approximately 150 feet west of South West Street. These samples were collected as a potential source sample based on interviews with local residents. No chlorinated VOCs were detected in the groundwater or soil sample at this location (Ref. 10. Pp. 543, 544, 545, 546; Figures 4, 5, 6, 7).

Ground water sample E2W71 was collected downgradient from the Spencer Coin Laundry. No chlorinated VOCs were detected in this ground water sample (Ref. 10 pp. 326, 327; Figures 4, 6, 7). Since no detections of chlorinated VOCs were found downgradient from the Spencer Coin Laundry, the Spencer Coin Laundry cannot be identified as a source of chlorinated VOCs and additional unidentified sources may be present.

Potential Source(s) of Attribution

Below are brief narratives describing facilities located within one mile of the BBP municipal wells #1, #2, and #3 that may have utilized chlorinated VOCs in their operations.

**Former Ranard's Cleaners, Miller Cleaners, Dunigan Cleaner
3/17 East Franklin Street
Spencer, Indiana**

This location is a known former dry cleaning facility that operated under multiple names. A dry cleaner called Miller Cleaners originally operated at 16 South Main Street (on the west side of the town of Spencer square) beginning in at least 1948 (earliest record of business) (Ref. 19, p. 1-6). This dry cleaner was then listed as operating at 13 East Franklin Street, which is the north side of the town of Spencer square (Ref. 20, p. 1-4). Miller Cleaners, Dunigan Cleaners, and Ranard's Cleaners each then operated a dry cleaning business listed at 3 East Franklin Street for a number of years (Refer to the Historical Dry Cleaning Operations in Spencer Table of this affidavit for a summary of known dry cleaners and their known years of operation based on historical telephone directories). Overall, a dry cleaner operated on the north side of the town of Spencer square from at least 1959 through 2001 (Historical Dry Cleaning Operations in Spencer, IN Table of this HRS Documentation Record).

Ground water sample (E2TJ8) was collected on June 24, 2015, during the SI investigation (Ref. 6, p. 531-532, 571, 595-602, 765-766). This sample was collected at 17 East Franklin, which is located on the north side of the town of Spencer town square, just north of the Owen County Courthouse (Figure 4 of this HRS Documentation Record). The sample was collected on the north side of the building, just south of an alley which separates 17 East Franklin Street from other commercial properties (Figure 4 of this documentation record). The properties 3 East Franklin Street and 17 East Franklin Street are both on the north side of the square and are connected. PCE was detected in the ground water sample (Sample # E2TJ8) at this location at a concentration of 220 µg/L (Table 2 of this HRS Documentation Record; Ref. 6, p. 531-532, 595-602, 765-766).

**Former Richardson Cleaners
107 North Fletcher
Spencer, Indiana**

This location is a known former dry cleaning facility that operated under two (2) known names. A dry cleaner called Richardson Cleaners originally operated at the listed address of 107 North Fletcher Avenue beginning in at least 1948 (earliest record of business) (Ref. 19, p. 1-5). In 1959, this dry cleaner was listed at 17 North Fletcher Avenue (believed to be the same as 107 North Fletcher) (Ref. 20, p. 5-7). No known records exist between 1960 and 1972, but between that time period the dry cleaner changed to Owen Valley Cleaners

Overall, a dry cleaner operated at this address beginning in approximately 1948 until 1974 according to telephone directory records (Historical Dry Cleaning Operations in Spencer Table of this affidavit). The parcel where the soil boring was located and the adjacent parcels believed to be the location of the former dry-cleaner are now used as a parking lot for a McDonald's restaurant.

Ground water sample (E2TJ2) was collected on June 23, 2015, during the SI investigation (Table 2 of this HRS Documentation Record). This sample was collected at 7 Fletcher Avenue, at the approximate location of the former dry cleaning building (Ref. 10, pp. 1,525-1,528), which is currently a paved parking lot for a McDonald's restaurant adjacent to the north (Figure 4 of this HRS Documentation Record). PCE

was detected in the ground water sample at this location at a concentration of 180 µg/L (Table 2 of this HRS Documentation Record).

Spencer Coin Laundry
401 West Morgan Street
Spencer, Indiana

This location is a coin-operated laundry facility located at 401 West Morgan Street. This facility does not have any current or historical known on-site dry cleaning operations. Ground water sample E2TJ0 was collected on June 23, 2015, during the SI investigation (Table 2 of this HRS Documentation Record). The ground water sample was collected in the parking lot just south of the on-site building (Ref. 6, p. 18-19, 733-737, 670-671; Figure 4 of this HRS Documentation Record). PCE was detected in the ground water sample at this location at a concentration of 5.7 µg/L (Table 2 of this HRS Documentation Record).

Due to the detection of PCE in the ground water at 401 West Morgan Street, downgradient samples were collected during the ESI investigation. Across the street, to the south of the Spencer Coin Laundry is a current Circle-K gas station located at 404 West Morgan Street (HRS Documentation Record, Figure 4). Due to past petroleum related releases while this location was known as a Crystal Flash gas station, a monitoring well network was established at the at 404 West Morgan Street and on surrounding properties (Ref. 10, pp. 20-21, 41). Monitoring wells MW-5 and MW-10 from this network were sampled during the ESI (Ref. 10, pp. 41, 20-21, 719-720, 692-694). PCE and TCE were detected in Sample # E2W70 (MW-5) at 1.7 µg/L and 1.2 µg/L, respectively (Table 2 of this HRS Documentation Record, Ref. 10, pp. 20-21). Chlorinated VOCs were not detected in Sample # E2W71 (MW-10) (HRS Documentation Record, Figure 4 and Ref. 10, pp. 20-21).

Demil
640 East Franklin
Spencer, Indiana

This property operates a Humvee demilitarization and dismantling facility for U.S. Army vehicles that are no longer needed. Since April 2015, more than 1,100 early Humvees and armored Jeeps have been decommissioned and dismantled at this facility (Ref. 46, p. 2).

Two (2) groundwater (E2TJ4 E2TJ6) and two (2) soil samples (E2TJ5 and E2TH7) were collected from one (1) soil boring completed on the Demil property. Several low-level VOCs were detected in the ground water samples, including PCE at a concentration of 0.19 and 0.22 µg/L. These concentrations of PCE were detected below the CRQL. No detections of chlorinated VOCs were detected in the subsurface soils and no source area(s) could be confirmed.

Stello Products
840 Hillside Ave
Spencer, Indiana

This facility has operated a metal sign painting facility since 1949. The facility manufactures of finishes aluminum traffic signs, street signs, sign posts, custom license plates, custom signs, and aluminum blanks (Ref.45, p. 1). Ground water sample E2TG7 was collected downgradient from this facility. No chlorinated VOCs were detected in this sample suggesting that the Stello Products facility is not a possible source.

**Boston Scientific
780 Brookside Dr.
Spencer, Indiana**

This facility produces medical products. The facility manufactures over 700 Class I and II medical devices across 65 different product families (Refer to Ref. 47, p.1). Ground water sample E2W52 was collected downgradient from this facility. No chlorinated VOCs were detected in the sample however the sample was analyzed out of holding times. Additional ground water sampling will need to be conducted to determine if there is a chlorinated VOC release from this facility.

**Spencer Evening World
114 East Franklin St.
Spencer, Indiana**

Established in 1927, Spencer Evening World is a family-owned and operated newspaper and commercial printing company. The company also provides graphic design and printing solutions for various products, such as business cards, forms, newsletters and brochures. It is affiliated with World Arts and The Owen Leader (Ref. 49, p. 1). Ground Water sample E2W66 was collected in the right of way near this facility. No chlorinated VOCs were detected in the ground water.

**World Arts, Inc.
156 East Franklin St.
Spencer, Indiana**

Established in 1994, World Arts offers a full range of print-related services including graphic design, pre-press, print production, finishing, bindery, mailing and distribution (Ref. 50, p. 1). Ground water sample E2W64 was obtained downgradient from this facility. No chlorinated VOCs were detected in this ground water sample.

Historical Dry Cleaning Operations in Spencer, IN Table

Directory Year	Entity Name	Address	Description from Directory	Phone #	Reference
1948	Miller Cleaners	16 South Main St.	West Side Square	250	Ref. 19, p. 1-6
1959	Miller Cleaners	13 East Franklin St.	-	250	Ref. 20, p. 1-4
1973	Miller Cleaners	3 East Franklin St.	-	829-2611	Ref. 21, p. 4
1974	Miller Cleaners	3 East Franklin St.	-	829-2611	Ref. 22, p. 1-2, 4
1977	NO LONGER A DRY CLEANER LISTED FOR MILLER CLEANERS				Ref. 23, p. 1-3
1982	Dunigan Cleaners	3 East Franklin St.	Located on the Square	829-2611	Ref. 24, p. 1-6 & Ref. 25, p. 1-3
1983	Dunigan Cleaners	3 East Franklin St.	-	829-2611	Ref. 26, p. 1-3
1984	Ranard's Cleaners	3 East Franklin St.	-	829-2611	Ref. 27, p. 1-3
1986	Ranard's Cleaners	3 East Franklin St.	-	829-2611	Ref. 28, p. 1-4
1988	Ranard's Cleaners	3 East Franklin St.	-	829-2611	Ref. 29, p. 1-4
1989	Ranard's Cleaners	3 East Franklin St.	-	829-2611	Ref. 30, p. 1-4
2001	Ranard's Cleaners	3 East Franklin St.	-	829-2611	Ref. 31, p. 1-3
2002	Ranard's Cleaners	1018 Hyden Rd.	-	829-2611	Ref. 32, p. 1-3
2003	Ranard's Cleaners	1018 Hyden Rd.	-	829-2611	Ref. 33, p. 1-4
1948	Richardson Cleaners	107 North Fletcher Ave.	-	206	Ref. 19, p. 1-5
1959	Richardson Cleaners	17 North Fletcher Ave.	-	206	Ref. 20, p. 5-7
1973	Owen Valley Cleaners	17 North Fletcher Ave.	-	829-2512	Ref. 21, p. 7
1974	Owen Valley Cleaners	17 North Fletcher Ave.	-	829-2512	Ref. 22, p. 1-3
1977	NO LONGER A DRY CLEANER LISTED FOR OWEN VALLEY CLEANERS				Ref. 23, p. 1-2, 4

Summary of Investigation Efforts

Prior to conducting the 2014 PA, IDEM sampled raw (unfiltered) ground water from BBP Wells #1, #2, and #3. PCE was detected in all three (3) wells, with an EPA Drinking Water MCL exceedance in Well #2. In December 2014, IDEM completed a PA within the town of Spencer and three (3) historical dry-cleaners were discovered. These dry-

cleaners were identified using historical county maps, phone directories, and interviews with local residents. A site reconnaissance revealed other possible sources.

Subsequent SI and ESI soil and ground water sampling identified several potential sources of contamination within the town of Spencer. The highest levels of PCE detected in groundwater were discovered at a former dry-cleaner just north of the town square and from a historical dry-cleaner discovered just south of the current McDonald's restaurant on Fletcher Avenue. However, no detections of PCE were detected downgradient from these former facilities.

IDEM Drinking water staff attempted to determine the direction of the PCE ground water plume was coming from by sampling twelve (12) ground water samples collected from six (6) direct-push borings near the impacted BBP wells. No PCE was detected during this investigation.

Sampling completed for this ESI investigation did not add any other potential source(s) other than those identified during the 2015 SI. Background samples including E2W52, E2W54, E2W56, E2W58, and E2W60 (and duplicate E2W62) did not contain any detections of chlorinated compounds above their respective CRQLs. PCE was detected in E2W58 (0.27 µg/L) and in E2W60 (and duplicate E2W62; 0.18 µg/L), however both were below the CRQL. The presence of PCE in these ground water samples could indicate additional unidentified sources.

Conclusion

IDEM staff have confirmed the presence of PCE in BBP municipal wells #1, #2, and #3. Staff have conducted an extensive review of historical county maps, phone directories, interviews with local residents, and collected ground water and soil samples for an SI and ESI (as discussed above) in an attempt to identify possible sources. Based on the SI and ESI soil and ground water analytical results, there is insufficient evidence to attribute the ground water contamination in municipal wells BBP#1, #2, and #3 to sources at nearby facilities. Therefore, there is no identified source of contamination.