

**REPORT ON  
ANNUAL GROUNDWATER MONITORING AND CORRECTIVE  
ACTION REPORT  
SEDIMENTATION POND  
A.B. BROWN GENERATING STATION  
POSEY COUNTY, INDIANA**

by Haley & Aldrich, Inc.  
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for Southern Indiana Gas and Electric Company  
Evansville, Indiana

File No. 129420  
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## 1. 40 CFR § 257.90 Applicability

### 1.1 40 CFR § 257.90(a)

***Except as provided for in § 257.100 for inactive CCR surface impoundments, all CCR landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under § 257.90 through § 257.98.***

The Sedimentation Pond at A.B. Brown Generating Station (ABB) is subject to the groundwater monitoring and corrective action requirements described under Code of Federal Regulations Title 40 (40 CFR) § 257.90 through § 257.98 (Rule). This document addresses the requirement for the Owner/Operator to prepare an Annual Report per § 257.90(e).

### 1.2 40 CFR § 257.90(e) - SUMMARY

***Annual groundwater monitoring and corrective action report. For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1).***

This Annual Report documents the activities completed in 2018 for the Sedimentation Pond as required by the Rule. Groundwater sampling and analysis was conducted per the requirements described in § 257.93, and the status of the groundwater monitoring program described in § 257.95 is provided in this report.

#### 1.2.1 Status of the Groundwater Monitoring Program

As provided in the notification on January 15, 2018 statistically significant increases (SSI) of Appendix III constituents were identified downgradient of the Sedimentation Pond. An evaluation of Alternate sources (ASD) was conducted; however, a successful alternative source demonstration was not achieved at this time. As a result, an Assessment Monitoring program was initiated as required by § 257.94(e)(2). The notification was placed in the facility's operating record as required by 257.106(h)(4).

#### 1.2.2 Key Actions Completed

The following key actions were completed in 2018:

- Conducted a statistical analysis of detection monitoring results to evaluate potential SSIs.
- Prepared 2017 Annual Report including:
  - The Annual Report was placed in the facility's operating record pursuant to § 257.105(h)(1);

- Pursuant to § 257.106(h)(1), the notification was sent to the relevant State Director and/or Tribal authority within 30 days of the Annual Report being placed in the facility's operating record [§ 257.106(d)];
- Pursuant to § 257.107(h)(1), the Annual Report was posted to the CCR Website within 30 days of the Annual Report being placed in the facility's operating record [§ 257.107(d)];
- Conducted an evaluation of possible alternate sources for Appendix III SSIs (Appendix A);
- Pursuant to § 257.106(h)(4), the notification was sent to the relevant State Director and/or Tribal authority within 30 days of establishing an assessment monitoring program;
- Collected and analyzed two rounds of Assessment Monitoring results in accordance with § 257.95(b) and § 257.95(d)(1) and recorded the concentrations in the facility's operating record as required by § 257.95(d)(1); and
- Established groundwater protection standards for those detected Appendix IV constituents in accordance with § 257.95(d)(2).

### 1.2.3 Problems Encountered

Problems such as damaged wells, issues with sample collection or lack of sampling, and problems with analytical analysis were not encountered at the ABB Sedimentation Pond in 2018.

### 1.2.4 Actions to Resolve Problems

Actions to resolve problems were not required.

### 1.2.5 Project Key Activities for Upcoming Year

Key activities to be completed in 2019 include the following:

- Statistical analysis of Assessment Monitoring analytical data to determine if statistically significant levels (SSLs) of the detected Appendix IV constituents are present;
- Based on the findings of the statistical analysis, conduct semi-annual groundwater monitoring and subsequent statistical analysis as required by § 257.94 or § 257.95; and
- Based on the findings of the statistical analysis, an evaluation of alternate sources, determination of nature and extent, and an assessment of corrective measures will be considered as required by § 257.95(g)(1) and § 257.95(g)(3).

## 1.3 40 CFR § 257.90(e) - INFORMATION

***At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:***

### 1.3.1 40 CFR § 257.90(e)(1)

***A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;***

As required by § 257.90(e)(1), a map showing the locations of the CCR unit and associated upgradient and downgradient monitoring wells for the Sedimentation Pond is presented as Figure 1. In addition,

this information is presented in the CCR Groundwater Monitoring Plan, which was placed in the facility's operating record by October 17, 2017 as required by § 257.105(h)(2).

### **1.3.2 40 CFR § 257.90(e)(2)**

***Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;***

Additional monitoring wells were not installed or decommissioned during 2018. However, location and construction details of the existing monitoring well network for the Sedimentation Pond is provided for reference as Table I.

### **1.3.3 40 CFR § 257.90(e)(3)**

***In addition to all the monitoring data obtained under § 257.90 through § 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;***

In accordance with § 257.95(b) and § 257.95(d)(1), two independent samples from each background and downgradient monitoring well were collected and analyzed. A summary table including the sample names, dates of sample collection, reason for sample collection (detection or assessment), and monitoring data obtained for the groundwater monitoring program for the Sedimentation Pond is presented in Table II of this report.

### **1.3.4 40 CFR § 257.90(e)(4)**

***A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels); and***

As required by § 257.93(h) a statistical analysis of the Appendix III constituents was completed by January 15, 2018. This statistical analysis determined that statistically significant increases of boron, calcium, chloride, fluoride, sulfate, and total dissolved solids were present downgradient of the Sedimentation Pond. An evaluation of alternate sources was initiated and completed on April 13, 2018 as required by § 257.94(e)(2). A source causing the SSI over background levels other than the CCR unit was not identified at that time and an Assessment Monitoring program was initiated. The Assessment Monitoring program has been established to meet the requirements of 40 CFR § 257.95.

### **1.3.5 40 CFR § 257.90(e)(5)**

***Other information required to be included in the annual report as specified in § 257.90 through § 257.98.***

Other information including development of groundwater protection standards, recording groundwater monitoring results in the operating record, and an evaluation of alternate sources is discussed in preceding sections.

## TABLES

**TABLE I**  
GROUNDWATER MONITORING WELL LOCATION AND CONSTRUCTION DETAILS  
A.B. BROWN GENERATING STATION - SEDIMENTATION POND  
MOUNT VERNON, INDIANA

| Well      | CCR Unit      | Date Installed | Easting    | Northing  | Top of Pad<br>Elevation<br>(ft msl) | Top of Riser<br>Elevation (ft<br>msl) | Surface Grout<br>(ft bgs) | Bentonite (ft<br>bgs) | Sand Pack<br>(ft bgs) | Screen Zone<br>(ft bgs) | Screen<br>Length (ft) | Well Radius<br>(in) | Status |
|-----------|---------------|----------------|------------|-----------|-------------------------------------|---------------------------------------|---------------------------|-----------------------|-----------------------|-------------------------|-----------------------|---------------------|--------|
| CCR-BK-1R | Background    | March 2016     | 2770919.08 | 974083.40 | 480.10                              | 483.39                                | 0.0 - 50.0                | 50.0 - 52.0           | 52.0 - 64.0           | 54.0 - 64.0             | 10                    | 2.00                | Active |
| CCR-BK-2  | Background    | March 2016     | 2769728.14 | 972854.33 | 427.50                              | 430.60                                | 0.0 - 11.5                | 11.5 - 13.5           | 13.5 - 25.5           | 15.5 - 25.5             | 10                    | 2.00                | Active |
| CCR-SP-1  | Sediment Pond | March 2016     | 2770030.26 | 970981.89 | 403.90                              | 403.51                                | 0.0 - 6.0                 | 6.0 - 8.0             | 8.0 - 20.0            | 10.0 - 20.0             | 10                    | 2.00                | Active |
| CCR-SP-2  | Sediment Pond | March 2016     | 2769939.51 | 970887.25 | 403.60                              | 403.23                                | 0.0 - 6.0                 | 6.0 - 8.0             | 8.0 - 20.0            | 10.0 - 20.0             | 10                    | 2.00                | Active |
| CCR-SP-3  | Sediment Pond | March 2016     | 2770027.64 | 970735.02 | 403.90                              | 403.57                                | 0.0 - 6.0                 | 6.0 - 8.0             | 8.0 - 20.0            | 10.0 - 20.0             | 10                    | 2.00                | Active |

**Notes:**

bgs = below ground surface

ft = feet

in = inches

msl = mean sea level

Datum of Elevations in NAVD 88

Statuses could include active, available, or decommissioned

**TABLE II**  
**SUMMARY OF GROUNDWATER QUALITY DATA**  
**SEDIMENTATION POND - JUNE THROUGH AUGUST 2018**  
**A.B. BROWN GENERATING STATION**  
**MOUNT VERNON, INDIANA**  
**FILE NO. 129420**

| Location Group   | Action Level    | Upgradient           |                   |                   |                   |
|--|-----------------|----------------------|-------------------|-------------------|-------------------|
|  |                 | CCR-BK-1R            | CCR-BK-1R         | CCR-BK-2          | CCR-BK-2          |
| Location Name  | Maximum         | CCR-BK-1R-20180608   | CCR-BK-1R20180827 | CCR-BK-2-20180608 | CCR-BK-2-20180820 |
| Sample Name  | Contaminant     |                      |                   |                   |                   |
| Sample Date  | Level/Regional  | 06/08/2018           | 08/27/2018        | 06/08/2018        | 08/20/2018        |
| Lab Sample ID  | Screening Level | 180-78556-5          | 180-81365-1       | 180-78556-6       | 180-81110-10      |
| <b>Detection Monitoring - EPA Appendix III Constituents (mg/L)</b> |                 |                      |                   |                   |                   |
| Boron, Total   | NA              | -                    | 0.08 U            | -                 | 0.08 U            |
| Calcium, Total   | NA              | -                    | <b>34</b>         | -                 | <b>36</b>         |
| Chloride   | NA              | -                    | <b>1.9</b>        | -                 | <b>15</b>         |
| Fluoride   | 4               | <b>0.37</b>          | <b>0.31</b>       | <b>0.16</b>       | <b>0.13 J+</b>    |
| Sulfate  | NA              | -                    | <b>21 J-</b>      | -                 | <b>18 J-</b>      |
| Total Dissolved Solids (TDS)                                       | NA              | -                    | <b>220</b>        | -                 | <b>230</b>        |
| pH (lab) (SU)  | NA              | -                    | <b>7.2 J</b>      | -                 | <b>6.8 J</b>      |
| <b>Assessment Monitoring - EPA Appendix IV Constituents (mg/L)</b> |                 |                      |                   |                   |                   |
| Antimony, Total  | 0.006           | 0.002 U              | -                 | 0.002 U           | -                 |
| Arsenic, Total   | 0.01            | R                    | <b>0.0011</b>     | 0.001 U           | 0.001 U           |
| Barium, Total  | 2               | <b>0.049 J-</b>      | <b>0.041 J</b>    | <b>0.037 J-</b>   | <b>0.033 J</b>    |
| Beryllium, Total   | 0.006           | 0.001 UJ             | -                 | 0.001 UJ          | -                 |
| Cadmium, Total   | 0.005           | 0.001 UJ             | 0.001 U           | 0.001 UJ          | 0.001 U           |
| Chromium, Total  | 0.1             | <b>0.003 J+</b>      | <b>0.0076</b>     | 0.002 U           | 0.002 U           |
| Cobalt, Total  | 0.004           | <b>0.0008 J</b>      | <b>0.001</b>      | <b>0.000098 J</b> | 0.0005 U          |
| Fluoride   | 4               | <b>0.37</b>          | <b>0.31</b>       | <b>0.16</b>       | <b>0.13 J+</b>    |
| Lead, Total  | 0.015           | <b>0.00063 J</b>     | <b>0.0011</b>     | 0.001 UJ          | 0.001 U           |
| Lithium, Total   | 0.04            | <b>0.0036 J</b>      | <b>0.0048 J</b>   | 0.005 U           | 0.05 U            |
| Mercury, Total   | 0.002           | 0.0002 UJ            | 0.0002 U          | 0.0002 UJ         | 0.0002 U          |
| Molybdenum, Total  | 0.1             | <b>0.0014 J</b>      | <b>0.0013 J</b>   | <b>0.00051 J</b>  | 0.005 U           |
| Selenium, Total  | 0.05            | 0.005 U              | 0.005 U           | 0.005 U           | 0.005 U           |
| Thallium, Total  | 0.002           | 0.001 U              | -                 | 0.001 U           | -                 |
| <b>Radiological (pCi/L)</b>  |                 |                      |                   |                   |                   |
| Radium-226   | NA              | <b>0.223 ± 0.148</b> | R                 | 0.0863 U ± 0.108  | R                 |
| Radium-228   | NA              | 0.263 U ± 0.217      | 0.285 U ± 0.313   | 0.230 U ± 0.194   | 0.0380 U ± 0.238  |
| Radium-226 & 228   | 5               | R                    | R                 | R                 | 0.209 UJ ± 0.251  |

**ABBREVIATIONS AND NOTES:**

- CCR: Coal Combustion Residuals.
- mg/L: milligram per liter.
- pCi/L: picoCurie per liter.
- SU: standard units.
- USEPA: United States Environmental Protection Agency.
- Results in **bold** are detected.
- USEPA. 2016. Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. July 26. 40 CFR Part 257. <https://www.epa.gov/coalash/coal-ash-rule>



**TABLE II**  
**SUMMARY OF GROUNDWATER QUALITY DATA**  
**SEDIMENTATION POND - JUNE THROUGH AUGUST 2018**  
**A.B. BROWN GENERATING STATION**  
**MOUNT VERNON, INDIANA**  
**FILE NO. 129420**

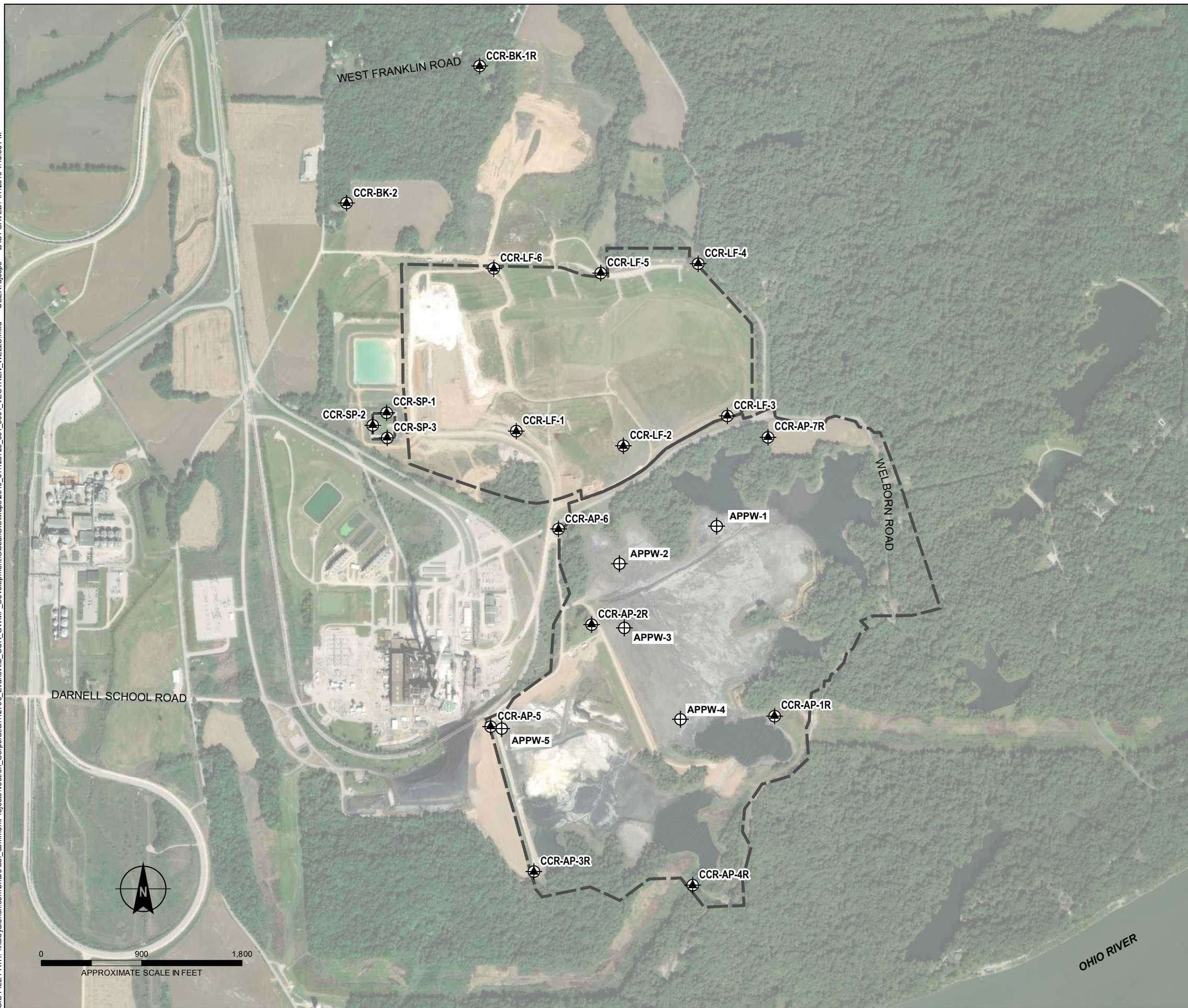
| Location Group<br>Location Name<br>Sample Name<br>Sample Date<br>Lab Sample ID | Action Level<br>Maximum<br>Contaminant<br>Level/Regional<br>Screening Level | Downgradient      |                            |                   |                            |                   |                   |                   |                   |
|--|---|-------------------|----------------------------|-------------------|----------------------------|-------------------|-------------------|-------------------|-------------------|
|  |   | CCR-SP-1          | CCR-SP-1                   | CCR-SP-1          | CCR-SP-1                   | CCR-SP-2          | CCR-SP-2          | CCR-SP-3          | CCR-SP-3          |
|  |   | CCR-SP-1-20180605 | BLIND DUPLICATE 3-20180605 | CCR-SP-1-20180823 | BLIND DUPLICATE 3-20180823 | CCR-SP-2-20180605 | CCR-SP-2-20180823 | CCR-SP-3-20180605 | CCR-SP-3-20180823 |
|  |   | 06/05/2018        | 06/05/2018                 | 08/23/2018        | 08/23/2018                 | 06/05/2018        | 08/23/2018        | 06/05/2018        | 08/23/2018        |
|  |   | 180-78475-1       | 180-78475-4                | 180-81267-5       | 180-81267-8                | 180-78475-2       | 180-81267-6       | 180-78475-3       | 180-81267-7       |
| <b>Detection Monitoring - EPA Appendix III Constituents (mg/L)</b>             |   |                   |                            |                   |                            |                   |                   |                   |                   |
| Boron, Total   | NA  | -                 | -                          | 0.14              | 0.16                       | -                 | 0.18              | -                 | 0.08 U            |
| Calcium, Total   | NA  | -                 | -                          | 290               | 310                        | -                 | 160               | -                 | 83                |
| Chloride   | NA  | -                 | -                          | 140               | 150                        | -                 | 70                | -                 | 9.4               |
| Fluoride   | 4   | 0.21              | 0.22                       | 0.78 J+           | 0.37 J+                    | 0.37              | 0.32 J+           | 0.3               | 0.25 J+           |
| Sulfate  | NA  | -                 | -                          | 1200 J-           | 1100 J-                    | -                 | 380 J-            | -                 | 9.9 J-            |
| Total Dissolved Solids (TDS)   | NA  | -                 | -                          | 2300              | 2300                       | -                 | 1100              | -                 | 390               |
| pH (lab) (SU)  | NA  | -                 | -                          | 6.9 J             | 6.8 J                      | -                 | 7.1 J             | -                 | 7.3 J             |
| <b>Assessment Monitoring - EPA Appendix IV Constituents (mg/L)</b>             |   |                   |                            |                   |                            |                   |                   |                   |                   |
| Antimony, Total  | 0.006   | 0.002 U           | 0.002 U                    | -                 | -                          | 0.002 U           | -                 | 0.002 U           | -                 |
| Arsenic, Total   | 0.01  | 0.0046 J          | 0.0039 J                   | 0.0045            | 0.0046                     | 0.001 U           | 0.00064 J         | 0.0048 J          | 0.0039            |
| Barium, Total  | 2   | 0.081 J-          | 0.083 J-                   | 0.066 J           | 0.071 J                    | 0.13 J-           | 0.12 J-           | 0.067 J-          | 0.068             |
| Beryllium, Total   | 0.006   | 0.001 UJ          | 0.001 UJ                   | -                 | -                          | 0.001 UJ          | -                 | 0.001 UJ          | -                 |
| Cadmium, Total   | 0.005   | 0.001 UJ          | 0.001 UJ                   | -                 | 0.001 U                    | 0.001 UJ          | -                 | 0.001 UJ          | -                 |
| Chromium, Total  | 0.1   | 0.002 U           | 0.002 U                    | 0.0017 U          | 0.0026 U                   | 0.002 U           | 0.0021 U          | 0.002 U           | 0.0022 U          |
| Cobalt, Total  | 0.004   | 0.0071 J          | 0.0066 J                   | 0.0072            | 0.0073                     | 0.00065 J         | 0.00072           | 0.00079 J         | 0.00046 J         |
| Fluoride   | 4   | 0.21              | 0.22                       | 0.78 J+           | 0.37 J+                    | 0.37              | 0.32 J+           | 0.3               | 0.25 J+           |
| Lead, Total  | 0.015   | 0.000097 J        | 0.001 UJ                   | 0.001 U           | 0.000099 J                 | 0.00019 J         | 0.00026 J         | 0.0002 J          | 0.00012 J         |
| Lithium, Total   | 0.04  | 0.0051 J          | 0.0053 J                   | 0.0064 U          | 0.007 U                    | 0.0069 J          | 0.0073 U          | 0.0031 J          | 0.005 U           |
| Mercury, Total   | 0.002   | 0.0002 UJ         | 0.0002 UJ                  | -                 | 0.0002 U                   | 0.0002 UJ         | -                 | 0.0002 UJ         | -                 |
| Molybdenum, Total  | 0.1   | 0.0013 J          | 0.0011 J                   | 0.0011 J          | 0.0015 J                   | 0.0012 J          | 0.0012 J          | 0.0027 J          | 0.0027 J          |
| Selenium, Total  | 0.05  | 0.005 U           | 0.005 U                    | -                 | 0.005 U                    | 0.005 U           | -                 | 0.005 U           | -                 |
| Thallium, Total  | 0.002   | 0.001 U           | 0.001 U                    | -                 | -                          | 0.001 U           | -                 | 0.001 U           | -                 |
| <b>Radiological (pCi/L)</b>  |   |                   |                            |                   |                            |                   |                   |                   |                   |
| Radium-226   | NA  | 0.0465 U ± 0.146  | 0.0918 U ± 0.165           | R                 | R                          | 0.461 ± 0.296     | R                 | 0.168 U ± 0.154   | R                 |
| Radium-228   | NA  | -0.208 U ± 0.236  | 0.196 U ± 0.206            | 0.542 ± 0.332     | 0.246 U ± 0.244            | 0.118 U ± 0.282   | 1.18 ± 0.361      | -0.0474 U ± 0.19  | 0.285 U ± 0.253   |
| Radium-226 & 228   | 5   | 0.0465 U ± 0.278  | 0.288 U ± 0.264            | R                 | R                          | 0.579 J ± 0.409   | R                 | 0.168 U ± 0.245   | R                 |

**ABBREVIATIONS AND NOTES:**




- CCR: Coal Combustion Residuals.
- mg/L: milligram per liter.
- pCi/L: picoCurie per liter.
- SU: standard units.
- USEPA: United States Environmental Protection Agency.
- Results in **bold** are detected.
- USEPA. 2016. Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. July 26. 40 CFR Part 257. <https://www.epa.gov/coalash/coal-ash-rule>

## FIGURES

GIS FILE PATH: \\haleyaldrich.com\share\boi\_common\p\projects\Vectren\_Corporation\42796\_Evansville\_CCR\_GWMP\_Development\Gibbat\GIS\Maps\2019\_01112019\_001\_VECTREN\_WELLS.mxd — USER: ajosppe — LAST SAVED: 1/7/2019 4:13:53 PM



**LEGEND**

-  MONITORING WELL
-  APPROXIMATE WASTE BOUNDARY
-  PIEZOMETER WELL

**NOTES**

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: ESRI
3. PIEZOMETER WELLS WILL BE SURVEYED IN THE FUTURE.

**HALEY ALDRICH**  
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**GROUNDWATER MONITORING  
 WELL LOCATIONS FOR  
 COMPLIANCE WITH FEDERAL  
 CCR RULE**

JANUARY 2018

FIGURE 1

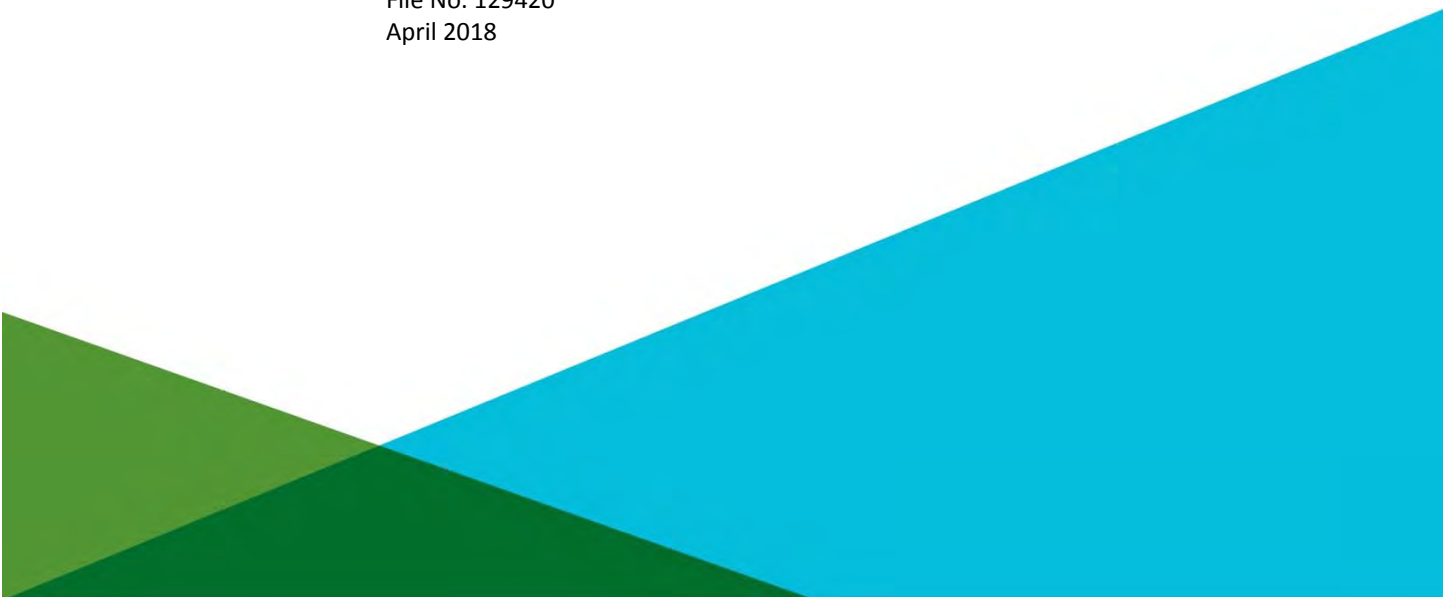
## **APPENDIX A – Alternate Source Demonstration**

**REPORT ON  
ALTERNATE SOURCE DEMONSTRATION  
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY  
A.B. BROWN - SEDIMENTATION POND  
WEST FRANKLIN, INDIANA**

by Haley & Aldrich, Inc.  
Greenville, South Carolina

for Southern Indiana Gas and Electric Company (SIGECO)  
West Franklin, Indiana

File No. 129420  
April 2018



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| 4          | Decision Diagram for CCR Alternate Source Demonstration Evaluation |

# 1. Introduction

Haley & Aldrich, Inc. (Haley & Aldrich) was retained by Southern Indiana Gas and Electric Company (SIGECO) to perform an alternate source evaluation for the Sedimentation Pond at the A.B. Brown Generating Station (ABB; Site) located near West Franklin, Indiana.

## 1.1 BACKGROUND

Consistent with §257.90 through §257.94, SIGECO has installed and certified a groundwater monitoring network for the Sedimentation Pond, collected a minimum of eight rounds of groundwater samples (nine rounds were collected for this unit) for the analysis of constituent lists as specified in the Coal Combustion Residual (CCR) Rule. In addition, interwell statistical analysis to determine if the Appendix III constituents in downgradient wells indicate a statistically significant increase (SSI) when compared to background (in this case upgradient wells). The statistical evaluation of the Appendix III constituents detected in groundwater downgradient of the Sedimentation Pond identified SSI's above background.

Pursuant to 40 CFR §257.94(e)(2), *The owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.* The CCR Rule provides 90-days from detecting a statistically significant increase over background to complete an Alternate Source Demonstration (ASD). If a successful demonstration is completed, and certified by a qualified professional engineer, the CCR unit may continue with detection monitoring (§257.94(e)(2)). If, however, an alternate source of any of the Appendix III SSI is not identified the owner or operator must, within 90-days, initiate an assessment monitoring program (§257.94(e)(3)). Supplemental site-specific and regional information may be reconsidered at a later date to re-evaluate apparent alternate sources for Appendix III SSI's and may result in potentially different outcomes than presented in this report.

This report documents the findings and conclusions of this alternate source demonstration completed for the Sedimentation Pond at the ABB.

## 1.2 SITE SETTING

The Site is located in Posey County near the community of West Franklin, Indiana. The location of the Site is shown on Figure 1. The Site is located approximately 0.5 miles north of the Ohio River. The Site varies in elevation with natural ground surface elevations varying from 380 to 520-feet above mean sea level (msl). The higher elevations are generally to the north of the Site with surface topography dominated by a series of ridges separated by ravines. In general, surface topography across the site generally slopes to the west towards the western property boundary then to the south toward the Ohio River. Surface water runoff occurs via sheet flow to low lying areas or ravines which eventually lead to the Ohio River.

## 1.3 SITE HISTORY

The Site began operations in 1978 with the construction of a 250 MW generating unit. In 1985, an additional generating unit was added. Both units burn southern Indiana coal. SIGECO currently owns



the land and operates the station for supplying electric power to industrial, commercial, and residential customers in its service territory.

Subsequent site-specific and regional information may be reconsidered at a later date to re-evaluate apparent alternate sources for Appendix III and may result in potentially different outcomes.

## 2. Site Geology and Hydrogeology

The Site geology and hydrogeology is described in numerous documents prepared by others and in the *Groundwater Monitoring Plan* prepared by Haley & Aldrich in October 2017.

### 2.1 SITE GEOLOGY

The Ohio River valley contains fill and loess (windblown) deposits derived indirectly from continental ice sheets. These were deposited from meltwater heavily loaded with entrained sediments accumulated in the area on the Pennsylvanian age shale, limestone and sandstone bedrock. Westerly winds simultaneously deposited silty sediments. As a result, base levels of the valley floor increased in elevation and created natural levees and outwashes. These natural levees produced slackwater lakes which deposited thick sequences of silt and clay. When the ice sheets retreated, the sediment load in the Ohio River diminished and lowered base levels. Consequently, the river incised the slackwater lake sediments, sculpted lacustrine terraces, and deposited silty and clayey stream alluvium.

Soil borings drilled at the Site indicates that the uppermost geologic unit is comprised of unconsolidated alluvial deposits consisting of primarily silts and clays with discontinuous layers of sand. This unit overlies Pennsylvanian age sandstone which is commonly identified as the Inglefield Sandstone. Underlying the Inglefield Sandstone is low-permeability weathered shale and siltstone. The sandstone and shale unit has been eroded on the north side of the landfill where the underlying limestone unit was encountered.

### 2.2 SITE HYDROGEOLOGY

Hydrogeologic units are defined based on their ability to transmit groundwater or serve as confining units between zones of groundwater saturation. The uppermost aquifer at the Site occurs within unconsolidated alluvial deposits which consist primarily of silty clay containing discontinuous layers of sand. Beneath upland areas, or ridgelines the uppermost aquifer occurs in weathered sandstone, shale, or siltstone. Recharge to the surficial aquifer occurs through direct surface infiltration.

Piezometric data recorded from the monitoring wells installed on-Site shows that the configuration of the uppermost aquifer is primarily controlled by surface topography with some influence from the underlying weathered bedrock. Groundwater flow across the eastern portion of the Landfill is to the north and northeast. Beneath the western portion of the Landfill groundwater flow shifts to the north and northwest into a trough that extends to the southwest beneath the Sedimentation Ponds (Figure 3). Groundwater flow in the vicinity of the Sedimentation Pond is predominantly to the west. Groundwater elevations vary seasonally but the groundwater flow patterns remain consistent.

Groundwater flow velocity in the uppermost aquifer beneath the CCR units was estimated using site-specific hydraulic conductivity obtained from slug testing and hydraulic gradients, and an assumed effective porosity of 25 percent. Hydraulic conductivity varied from 1E-3 cm/sec in the vicinity of the Landfill to 3E-4 cm/sec in the vicinity of the Sedimentation Ponds and the Ash Pond. The hydraulic gradient beneath and downgradient of the Landfill and the Ash Pond is 0.03 feet/foot and 0.04 feet/foot respectively. The hydraulic gradient lessens beneath and downgradient of the Sedimentation Pond dropping to 0.004 feet/foot. Using the site-specific hydraulic conductivity and hydraulic gradients, and assuming an effective porosity of 25 percent the groundwater flow velocity in the vicinity of the CCR

units is estimated as follows; 120 feet/year at the Landfill, 50 feet/year at the Ash Pond, and approximately 5 feet/year beneath and downgradient of the Sedimentation Pond.

### **3. Alternate Source Evaluation**

Haley & Aldrich conducted an evaluation of potential alternate sources of Appendix III constituents in downgradient groundwater at the Sedimentation Pond as potential cause(s) of the statistically significant increases. These potential sources include:

1. Sampling procedures, laboratory procedures and statistical analyses to determine if potential errors may have been made that would result in the apparent statistically significant increase;
2. Potential point and non-point sources of contamination in the vicinity of the unit; or,
3. Observed natural geochemical conditions that affect the natural variability of groundwater quality.

Each of these analyses and the resulting findings are described below. The systematic approach used to conduct this evaluation is illustrated on Figure 5.

#### **3.1 REVIEW OF SAMPLING, ANALYSIS, AND STATISTICAL EVALUATION**

##### **3.1.1 Field Sampling Procedures**

In accordance with §257.93 of the CCR Rule, Haley & Aldrich prepared a Groundwater Sampling and Analysis Plan (GWSAP) for the ABB. The GWSAP identified the site-specific activities and methodologies for groundwater sampling for the groundwater monitoring program. The GWSAP included procedures for field data collection, sample collection, sample preservation and shipment, interpretation, laboratory analytical methods, and reporting for groundwater sampling for the Sedimentation Pond. The administrative procedures and frequency for collection of groundwater elevation measurements, determination of flow directions, and gradients were also provided in the GWSAP.

Haley & Aldrich has reviewed the field sampling and equipment calibration logs and the field indicator parameters and at this time did not identify deviations or errors in sampling.

##### **3.1.2 Laboratory Quality Control**

A project database that incorporates hydrogeologic and groundwater quality data was established to allow efficient management of chemical and physical data collected in the field and received from the laboratories. Laboratories conducting groundwater analyses for this program were supplied with specific formats for electronic data deliverables to ensure compatibility with the project database requirements.

Haley & Aldrich conducted quality assurance/quality control (QA/QC) reviews of the laboratory data generated for the Sedimentation Pond and at this time has not identified any laboratory errors.

##### **3.1.3 Statistical Evaluation**

SIGECO collected a total of nine groundwater samples from each monitoring well in the groundwater monitoring network. The data satisfy the CCR Rule requirement of collecting a minimum of eight rounds of hydrological and groundwater quality data from upgradient and downgradient wells. The Upper Tolerance Limit (UTL) statistical analysis was used as specified in the certification statement of 15 October 2017. The UTL is an accepted method under the CCR Rule and is the upper endpoint of a

tolerance interval that is designed to contain a pre-specified proportion (e.g. 95 percent) of the background dataset.

Data from the most recent sampling event from the downgradient monitoring wells for the Sedimentation Pond were compared to the UTL calculated from the background data. Based on these comparisons, SSI's were identified in one or more of the downgradient wells.

Haley & Aldrich has reviewed the statistical evaluation for the Sedimentation Pond at ABB and at this time we have concluded that there were no errors in the statistical evaluation, the certified statistical evaluation met the performance standard of the certified statistical procedure and the evaluation complies with the requirements of the CCR Rule.

## **3.2 POTENTIAL POINT AND NON-POINT SOURCES**

This evaluation includes an assessment of point and non-point sources of Appendix III constituents other than the regulated. Point sources could include units associated with the generating station. Non-point sources could include the leaching of inorganic constituents from the underlying subsurface soil and rock formations, runoff from parking areas or storm water conveyances or the application of agricultural chemicals. Both Point and Non-Point Sources are discussed below.

### **3.2.1 Point Sources**

Haley & Aldrich has assessed possible point sources that may have produced the observed SSI's. At this time Haley & Aldrich was unable to identify an alternate point source that would produce an SSI of Appendix III constituent.

### **3.2.2 Non-Point Sources**

At this time, no agricultural, mining, industrial, or other activities have been identified at the site that might constitute a non-point source of the observed Appendix III SSI's. Records used to evaluate the potential for non-point sources included historical topographic maps, historical aerial photographs and Site records. EDR's are provided in Appendix A. To date, there are no apparent non-point sources that could potentially be associated with the Appendix III SSI's for the Sedimentation Pond.

## **3.3 NATURAL VARIABILITY OF ON-SITE GROUNDWATER QUALITY**

As presented in section 2.1, unconsolidated sediments consisting of clay and silt and consolidated sediments of limestone, sandstone and shale make up the unconfined uppermost aquifer beneath the site. To date, Haley & Aldrich did not identify natural variability of groundwater quality at ABB that could be associated with the SSI's identified for the Sedimentation Pond at this time.

## **3.4 REGIONAL WATER QUALITY OBSERVATIONS**

### **3.4.1 Indiana Integrated Water Monitoring and Assessment Report 2016**

Haley & Aldrich conducted a search of the Indiana Department of Environmental Management (IDEM) database including publicly available data describing groundwater quality in similar aquifers in Posey County. From the data reviewed to date, while many of the Appendix III constituents are naturally

occurring in groundwater, the reported concentrations are generally below the levels detected in the downgradient monitoring wells surrounding Sedimentation Pond. Relevant portions of the IDEM 2016 Integrated Water Monitoring and Assessment Report are presented in Appendix B.

## 4. Findings and Conclusions

Haley & Aldrich conducted an evaluation of groundwater quality at the Sedimentation Pond to identify alternate sources for the Appendix III SSI's observed downgradient of the unit. The evaluation included review of sampling procedures, laboratory procedures, and statistical analyses to determine if potential errors may have been made that could result in the apparent SSI's observed downgradient of the Sedimentation Pond. Haley & Aldrich also evaluated potential point and non-point sources of contamination in the vicinity and evaluated natural geologic conditions and the effect of those conditions on native groundwater chemistry.

At this time, this review did not identify contributing sources that could serve as an ASD for the SSI's observed in the CCR well network for the Sedimentation Pond. Supplemental site-specific and regional information may be reconsidered at a later date to re-evaluate apparent alternate sources for Appendix III SSI's and may result in potentially different outcomes than presented in this report.

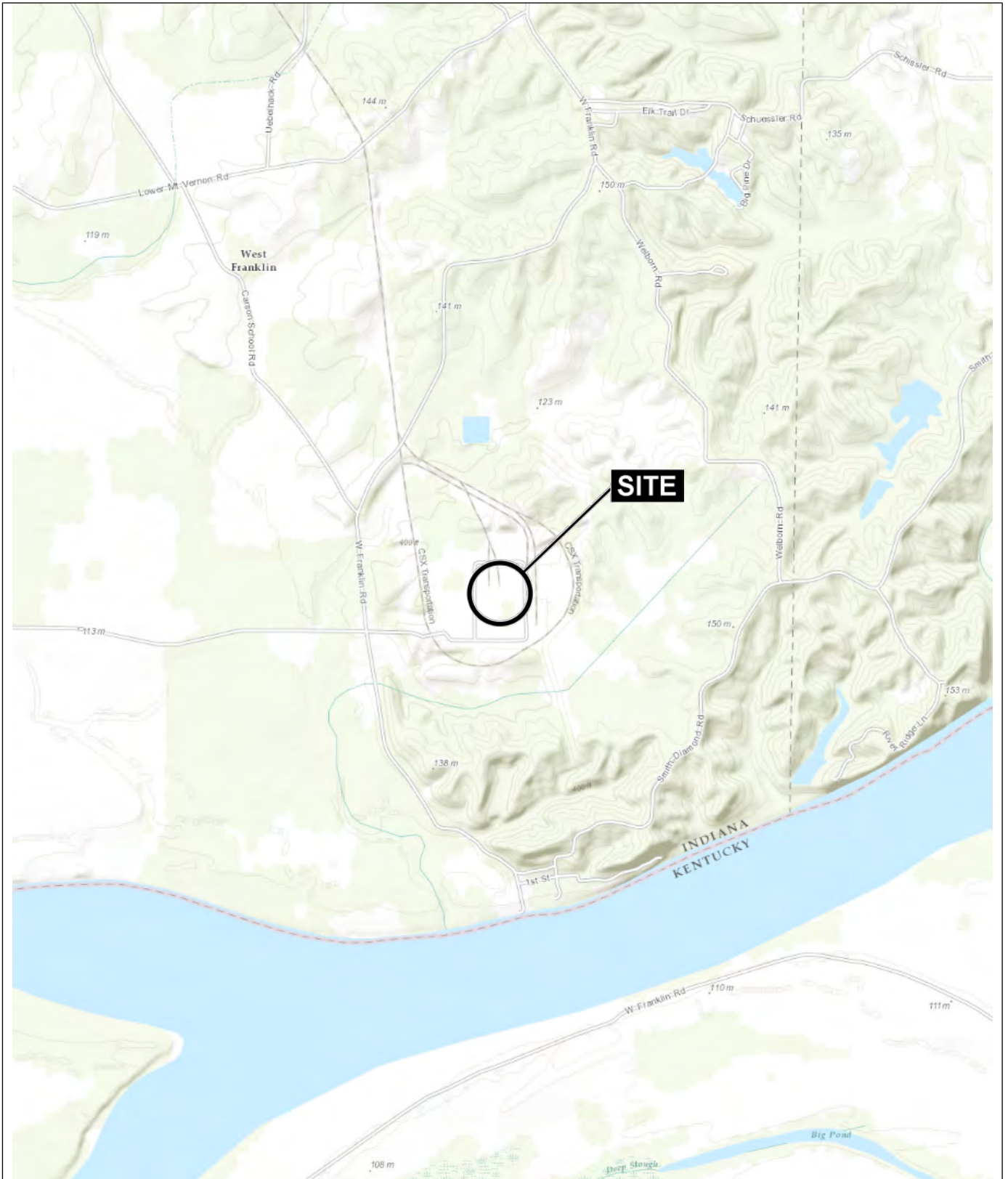
## References

1. United States Environmental Protection Agency (USEPA), 2000. Sampling and Analysis Plan Guidance and Template, R9QA/002.1. April 2000.
2. United States Environmental Protection Agency (USEPA), 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance, EPA 530/R-09-007. March 2009.
3. Haley & Aldrich, Inc. 2017. Groundwater Monitoring Report, SIGECO, A.B. Brown Station, West Franklin, Indiana.
4. Haley & Aldrich, Inc. 2017. Sampling and Analysis Plan, SIGECO, A.B. Brown Station, West Franklin, Indiana.
5. Haley & Aldrich, Inc. 2017. Appendix III Statistical Results Memo, A.B. Brown Station, West Franklin, Indiana.
6. USGS. 2009. *Surficial Geologic Map of the Evansville Indiana, and Henderson, Kentucky, Area.*

[https://hank.haleyaldrich.com/sites/communities/CCRASD/Client/Vectren/A.B. Brown/Sedimentation Pond/Documents/ASD Evaluation/ASD Evaluation\\_AB Brown\\_Sedimentation Pond\\_Vectren\\_2018\\_0413\\_F.docx](https://hank.haleyaldrich.com/sites/communities/CCRASD/Client/Vectren/A.B. Brown/Sedimentation Pond/Documents/ASD Evaluation/ASD Evaluation_AB Brown_Sedimentation Pond_Vectren_2018_0413_F.docx)



## FIGURES



MAP SOURCE: ESRI

SITE COORDINATES: 37°54'25"N, 87°42'55"W



VECTREN CORPORATION  
 A.B. BROWN GENERATING STATION  
 8511 WELBORN ROAD  
 MT. VERNON, INDIANA 47620




**SITE LOCATION MAP**

APPROXIMATE SCALE: 1 IN = 2000 FT  
 APRIL 2018

**FIGURE 1**

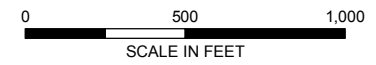


**LEGEND**

-  UPGRADIENT MONITORING WELL
-  DOWNGRADIENT MONITORING WELL
-  TOPOGRAPHIC DIVIDE

**NOTES**

1. LOCATIONS DERIVED FROM THREE I DESIGN DATA.
2. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
3. AERIAL IMAGERY SOURCE: ESRI



VECTREN CORPORATION  
 A.B. BROWN GENERATING STATION  
 8511 WELBORN ROAD  
 MOUNT VERNON, IN 47620

**MONITORING WELL NETWORK  
 SEDIMENTATION POND**

JANUARY 2018

FIGURE 2

DAMELL SCHOOL ROAD

WEST FRANKLIN R

A.B. BROWN  
GENERATING STATION

CARSON SCHOOL ROAD

GREEN VALLEY DRIVE

CCR-BK-2

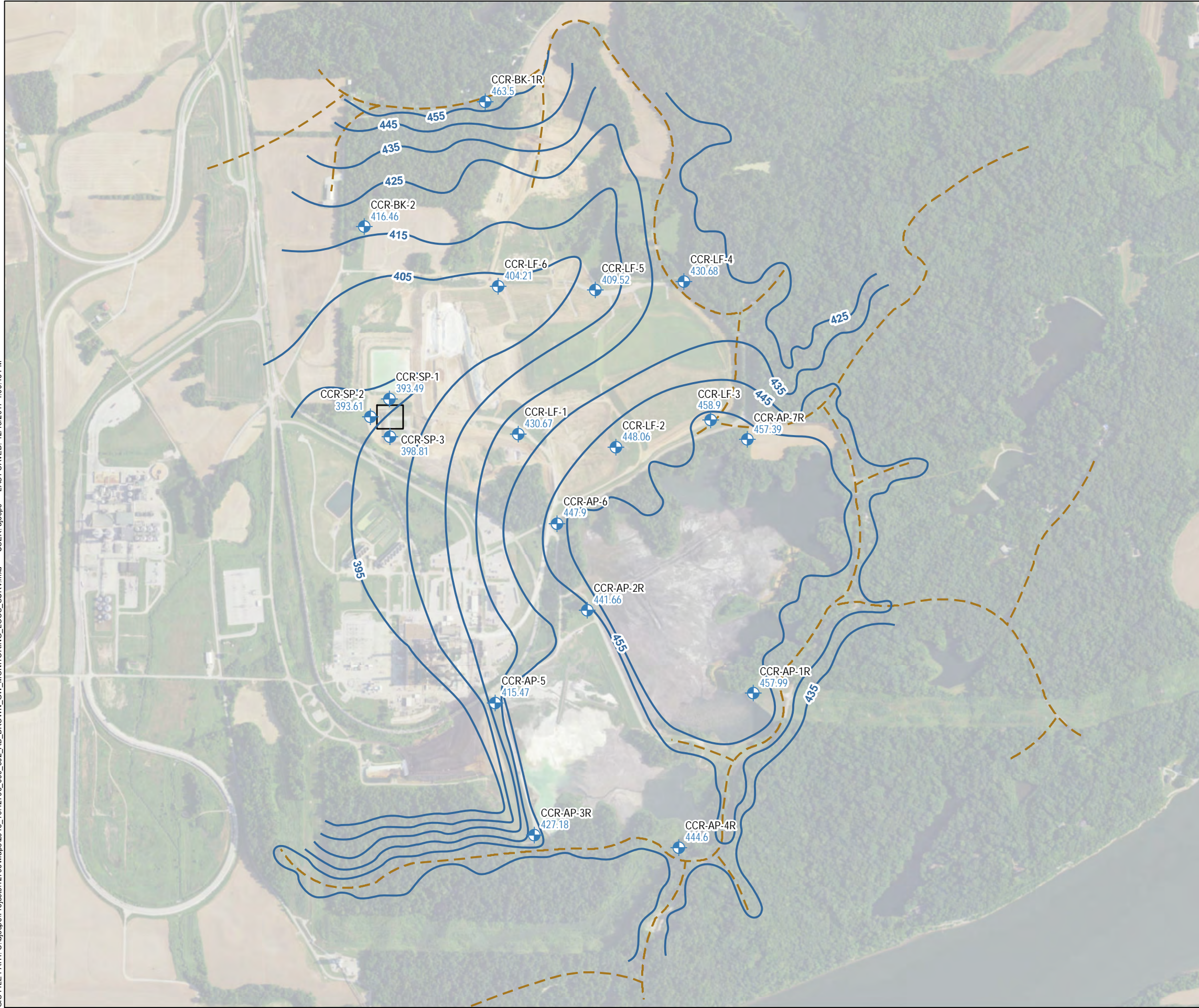
CCR-BK-1R

CCR-SP-1




CCR-SP-2

CCR-SP-3

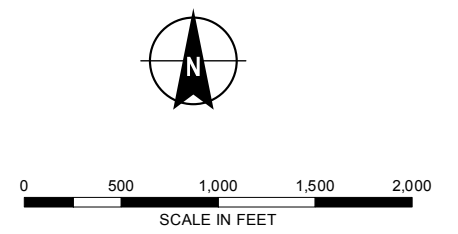
GIS FILE PATH: C:\ajospel\Projects\42796\Maps\2016\_10\42796\_000\_002\_AB\_BROWN\_GW\_MONITORING\_LOCS\_SURV.mxd — USER: ajospel — LAST SAVED: 12/13/2017 10:46 PM



**LEGEND**

-  MONITORING WELL
-  GROUNDWATER ELEVATION CONTOUR, IN FEET
-  TOPOGRAPHIC DIVIDE

- NOTES**
1. LOCATIONS DERIVED FROM THREE I DESIGN DATA.
  2. WATER LEVELS MEASURED 6 JUNE 2017
  3. AERIAL IMAGERY SOURCE: ESRI

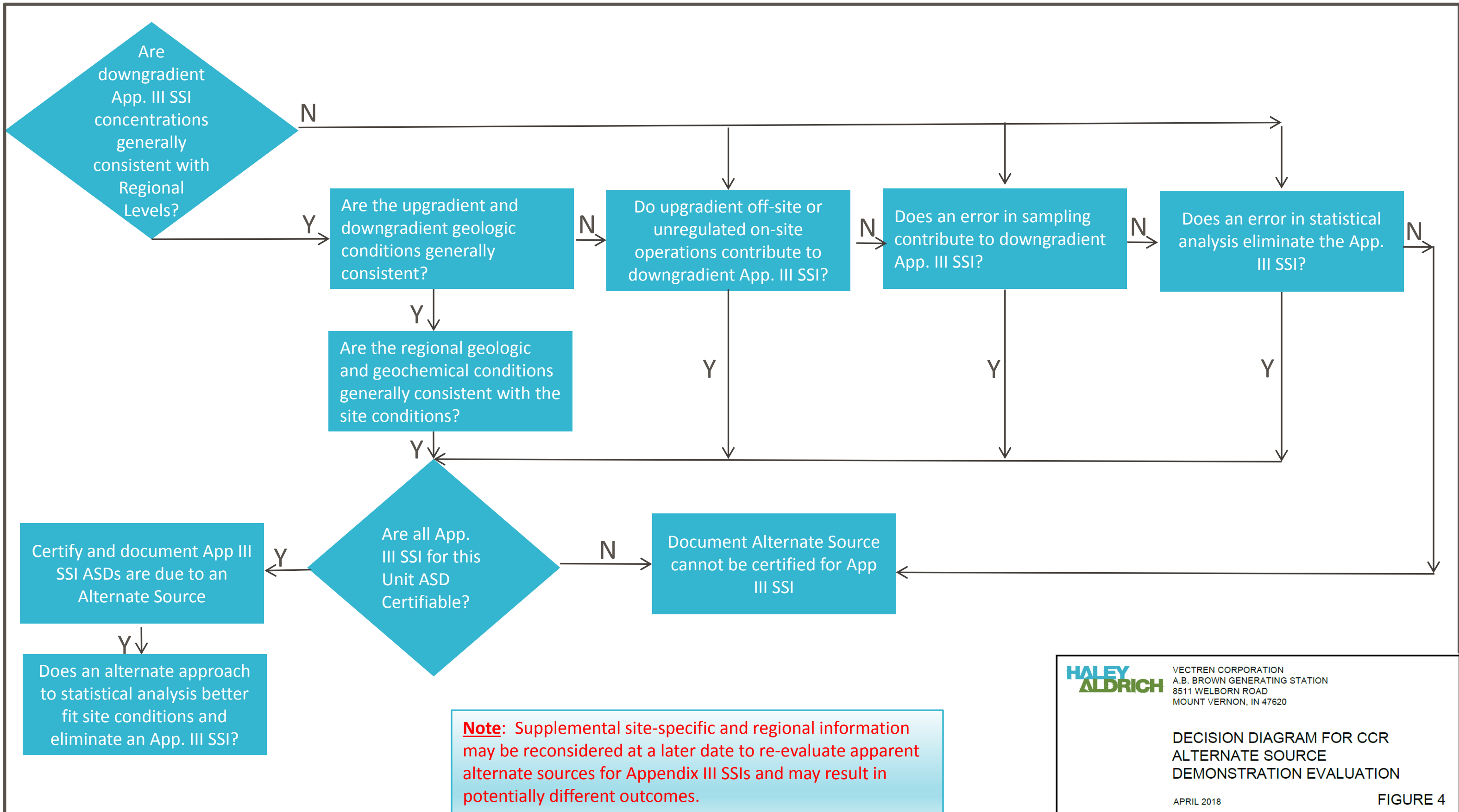


**HALEY ALDRICH**  
 VECTREN CORPORATION  
 A.B. BROWN GENERATING STATION  
 8511 WELBORN ROAD  
 MOUNT VERNON, IN 47620

**POTENTIOMETRIC SURFACE MAP**

DECEMBER 2017

**FIGURE 3**



## **APPENDIX A**

### **EDR Reports**

**A.B.Brown Generating Station**

8511 Welborn Rd  
Evansville, IN 47712

Inquiry Number: 05203791.2r  
February 28, 2018

**The EDR Radius Map™ Report with GeoCheck®**



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

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***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### TARGET PROPERTY INFORMATION

#### ADDRESS

8511 WELBORN RD  
EVANSVILLE, IN 47712

#### COORDINATES

Latitude (North): 37.9077760 - 37° 54' 27.99"  
Longitude (West): 87.7079510 - 87° 42' 28.62"  
Universal Transverse Mercator: Zone 16  
UTM X (Meters): 437764.1  
UTM Y (Meters): 4195613.5  
Elevation: 453 ft. above sea level

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 5946019 WEST FRANKLIN, IN  
Version Date: 2013

### AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from: 20140705  
Source: USDA

MAPPED SITES SUMMARY

Target Property Address:  
 8511 WELBORN RD  
 EVANSVILLE, IN 47712

Click on Map ID to see full detail.

| MAP ID              | SITE NAME            | ADDRESS              | DATABASE ACRONYMS                                  | RELATIVE ELEVATION | DIST (ft. & mi.) DIRECTION |
|---------------------|----------------------|----------------------|--|--------------------|----------------------------|
| <a href="#">A1</a>  | SIGECO - A.B. BROWN  | 8511 WELBORN RD      | EPA WATCH LIST                                     |                    | TP                         |
| <a href="#">A2</a>  | SOUTHERN INDIANA GAS | 8511 WELBORN RD      | IN SWF/LF, IN SPILLS, IN AIRS, IN NPDES, IN TIER 2 |                    | TP                         |
| <a href="#">A3</a>  | SIGECO FILTER CAKE D | 8511 WELBORN RD      | IN RGA LF  |                    | TP                         |
| <a href="#">A4</a>  | VECTREN- NEW SEDIMEN | 8511 WELBORN RD      | IN NPDES   |                    | TP                         |
| <a href="#">A5</a>  | SIGECO - A.B. BROWN  | 8511 WELBORN ROAD    | EPA WATCH LIST                                     |                    | TP                         |
| <a href="#">A6</a>  | ABB DAM MODIFICATION | 8511 WELBORN RD      | IN NPDES   |                    | TP                         |
| <a href="#">A7</a>  | SIGECO - A.B. BROWN  | 8511 WELBORN RD      | EPA WATCH LIST                                     |                    | TP                         |
| <a href="#">A8</a>  | SIGECO AB BROWN GENE | 8511 WELBORN RD      | RCRA-CESQG, IN MANIFEST                            |                    | TP                         |
| <a href="#">A9</a>  | SIGECO A B BROWN GEN | 8511 WELBORN RD      | TSCA, TRIS   |                    | TP                         |
| <a href="#">A10</a> | AB BROWN RWS III DIS | 8511 WELBORN RD      | IN RGA LF  |                    | TP                         |
| <a href="#">A11</a> |                      | 8511 WELBORN ROAD MO | IN SPILLS  |                    | TP                         |
| <a href="#">A12</a> | A.B. BROWN GENERATIN | 8511 WELBORN RD      | IN NPDES   |                    | TP                         |
| <a href="#">A13</a> | VECTREN - A.B. BROWN | 8511 WELBORN RD      | IN NPDES   |                    | TP                         |
| <a href="#">A14</a> | VECTREN - A B BROWN  | 8511 WELBORN RD      | IN NPDES   |                    | TP                         |

## EXECUTIVE SUMMARY

### TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

| Site  | Database(s)  | EPA ID |
|---|--|--------|
| SIGECO - A.B. BROWN<br>8511 WELBORN RD<br>EVANSVILLE, IN 47620    | EPA WATCH LIST<br>Facility ID: 1812900010  | N/A    |
| SOUTHERN INDIANA GAS<br>8511 WELBORN RD<br>MOUNT VERNON, IN 47620 | IN SWF/LF<br>IN SPILLS<br>Facility Id: 200005087<br>Facility Id: 199902080<br><br>IN AIRS<br>Status: Issued<br>Status: Combined<br>Status: Draft<br>Status: Canceled<br>Status: Withdrawn<br>Permit ID: 129-6848-00010<br>Permit ID: 129-17032-00010<br>Permit ID: 129-12029-00010<br>Permit ID: 129-14441-00010<br>Permit ID: 129-14021-00010<br><i>*Additional key fields are available in the Map Findings section</i><br><br>IN NPDES<br>Permit Status Desc: Effective<br>NPDES Id: IN0052191<br><br>IN TIER 2<br>Facility Id: 11785 | N/A    |
| SIGECO FILTER CAKE D<br>8511 WELBORN RD<br>MOUNT VERNON, IN       | IN RGA LF<br>Facility ID: 65-07  | N/A    |
| VECTREN- NEW SEDIMEN<br>8511 WELBORN RD<br>MOUNT VERNON, IN 47620 | IN NPDES<br>Permit Status Desc: Effective<br>NPDES Id: INR10K394   | N/A    |
| SIGECO - A.B. BROWN<br>8511 WELLBORN ROAD<br>EVANSVILLE, IN 47620 | EPA WATCH LIST<br>Facility ID: 1812900010  | N/A    |
| ABB DAM MODIFICATION<br>8511 WELBORN RD<br>MOUNT VERNON, IN 47620 | IN NPDES   | N/A    |

## EXECUTIVE SUMMARY

Permit Status Desc: Effective  
NPDES Id: INR10L912

SIGECO - A.B. BROWN  
8511 WELBORN RD  
MOUNT VERNON, IN 47712

EPA WATCH LIST  
Facility ID: 1812900010

N/A

SIGECO AB BROWN GENE  
8511 WELBORN RD  
MOUNT VERNON, IN 47620

RCRA-CESQG  
EPA ID:: IND000685800  
  
IN MANIFEST  
EPA ID: IND000685800

IND000685800

SIGECO A B BROWN GEN  
8511 WELBORN RD  
MOUNT VERNON, IN 47620

TSCA  
TRIS  
TRIS ID: 47620SGCBB8511W

47620SGCBB8511W

AB BROWN RWS III DIS  
8511 WELBORN RD  
MOUNT VERNON, IN

IN RGA LF

N/A

8511 WELBORN ROAD MO  
8511 WELBORN ROAD MO  
POSEY (County), IN

IN SPILLS  
Facility Id: 57793

N/A

A.B. BROWN GENERATIN  
8511 WELBORN RD  
MOUNT VERNON, IN 47620

IN NPDES  
Permit Status Desc: Effective  
NPDES Id: INR10N110

N/A

VECTREN - A.B. BROWN  
8511 WELBORN RD  
MOUNT VERNON, IN 47620

IN NPDES  
Permit Status Desc: Effective  
NPDES Id: INR10F189

N/A

VECTREN - A B BROWN  
8511 WELBORN RD  
MOUNT VERNON, IN 47620

IN NPDES  
Permit Status Desc: Effective  
NPDES Id: INR10J646

N/A

## EXECUTIVE SUMMARY

### DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

### STANDARD ENVIRONMENTAL RECORDS

#### ***Federal NPL site list***

NPL..... National Priority List  
Proposed NPL..... Proposed National Priority List Sites  
NPL LIENS..... Federal Superfund Liens

#### ***Federal Delisted NPL site list***

Delisted NPL..... National Priority List Deletions

#### ***Federal CERCLIS list***

FEDERAL FACILITY..... Federal Facility Site Information listing  
SEMS..... Superfund Enterprise Management System

#### ***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

#### ***Federal RCRA CORRACTS facilities list***

CORRACTS..... Corrective Action Report

#### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

#### ***Federal RCRA generators list***

RCRA-LQG..... RCRA - Large Quantity Generators  
RCRA-SQG..... RCRA - Small Quantity Generators

#### ***Federal institutional controls / engineering controls registries***

LUCIS..... Land Use Control Information System  
US ENG CONTROLS..... Engineering Controls Sites List  
US INST CONTROL..... Sites with Institutional Controls

#### ***Federal ERNS list***

ERNS..... Emergency Response Notification System

#### ***State- and tribal - equivalent CERCLIS***

IN SHWS..... List of Hazardous Waste Response Sites Scored Using the Indiana Scoring Model

## EXECUTIVE SUMMARY

KY SHWS..... State Leads List

### ***State and tribal landfill and/or solid waste disposal site lists***

IN OPEN DUMPS..... Open Dump Waste Sites  
KY SWF/LF..... Solid Waste Facilities List

### ***State and tribal leaking storage tank lists***

IN LUST..... Lust Leaking Underground Storage Tank List  
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

### ***State and tribal registered storage tank lists***

FEMA UST..... Underground Storage Tank Listing  
IN UST..... Indiana Registered Underground Storage Tanks  
KY UST..... Underground Storage Tank Database  
IN AST..... Above Ground Storage Tanks  
INDIAN UST..... Underground Storage Tanks on Indian Land

### ***State and tribal institutional control / engineering control registries***

IN AUL..... Sites with Restrictions

### ***State and tribal voluntary cleanup sites***

IN VCP..... Voluntary Remediation Program Site List  
KY VCP..... Voluntary Cleanup Program Sites  
INDIAN VCP..... Voluntary Cleanup Priority Listing

### ***State and tribal Brownfields sites***

IN BROWNFIELDS..... Brownfields Site List  
KY BROWNFIELDS..... Kentucky Brownfield Inventory

### **ADDITIONAL ENVIRONMENTAL RECORDS**

#### ***Local Brownfield lists***

US BROWNFIELDS..... A Listing of Brownfields Sites

#### ***Local Lists of Landfill / Solid Waste Disposal Sites***

IN SWTIRE..... Waste Tire Sites Listing  
IN SWRCY..... Recycling Facilities  
KY SWRCY..... Recycling Facilities  
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands  
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations  
ODI..... Open Dump Inventory  
IHS OPEN DUMPS..... Open Dumps on Indian Land

#### ***Local Lists of Hazardous waste / Contaminated Sites***

US HIST CDL..... Delisted National Clandestine Laboratory Register

## EXECUTIVE SUMMARY

|                  |  |
|------------------|--|
| IN CDL.....      | Clandestine Drug Lab Listing               |
| KY CDL.....      | Clandestine Drug Lab Location Listing      |
| IN DEL SHWS..... | Deleted Commissioner's Bulletin Sites List |
| US CDL.....      | National Clandestine Laboratory Register   |

### **Local Land Records**

|              |                         |
|--------------|-------------------------|
| LIENS 2..... | CERCLA Lien Information |
|--------------|-------------------------|

### **Records of Emergency Release Reports**

|                   |  |
|-------------------|--|
| HMIRS.....        | Hazardous Materials Information Reporting System |
| KY SPILLS.....    | State spills                                     |
| IN SPILLS 90..... | SPILLS 90 data from FirstSearch                  |
| IN SPILLS 80..... | SPILLS 80 data from FirstSearch                  |

### **Other Ascertainable Records**

|                        |   |
|------------------------|---|
| RCRA NonGen / NLR..... | RCRA - Non Generators / No Longer Regulated   |
| FUDS.....              | Formerly Used Defense Sites   |
| DOD.....               | Department of Defense Sites   |
| SCRD DRYCLEANERS.....  | State Coalition for Remediation of Drycleaners Listing  |
| US FIN ASSUR.....      | Financial Assurance Information   |
| 2020 COR ACTION.....   | 2020 Corrective Action Program List   |
| SSTS.....              | Section 7 Tracking Systems  |
| ROD.....               | Records Of Decision   |
| RMP.....               | Risk Management Plans   |
| RAATS.....             | RCRA Administrative Action Tracking System  |
| PRP.....               | Potentially Responsible Parties   |
| PADS.....              | PCB Activity Database System  |
| ICIS.....              | Integrated Compliance Information System  |
| FTTS.....              | FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act) |
| MLTS.....              | Material Licensing Tracking System  |
| COAL ASH DOE.....      | Steam-Electric Plant Operation Data   |
| COAL ASH EPA.....      | Coal Combustion Residues Surface Impoundments List  |
| PCB TRANSFORMER.....   | PCB Transformer Registration Database   |
| RADINFO.....           | Radiation Information Database  |
| HIST FTTS.....         | FIFRA/TSCA Tracking System Administrative Case Listing  |
| DOT OPS.....           | Incident and Accident Data  |
| CONSENT.....           | Superfund (CERCLA) Consent Decrees  |
| INDIAN RESERV.....     | Indian Reservations   |
| FUSRAP.....            | Formerly Utilized Sites Remedial Action Program   |
| UMTRA.....             | Uranium Mill Tailings Sites   |
| LEAD SMELTERS.....     | Lead Smelter Sites  |
| US AIRS.....           | Aerometric Information Retrieval System Facility Subsystem  |
| US MINES.....          | Mines Master Index File   |
| ABANDONED MINES.....   | Abandoned Mines   |
| FINDS.....             | Facility Index System/Facility Registry System  |
| UXO.....               | Unexploded Ordnance Sites   |
| DOCKET HWC.....        | Hazardous Waste Compliance Docket Listing   |
| ECHO.....              | Enforcement & Compliance History Information  |
| FUELS PROGRAM.....     | EPA Fuels Program Registered Listing  |
| KY AIRS.....           | Permitted Airs Facility Listing   |
| IN BULK.....           | Registered Bulk Fertilizer and Pesticide Storage Facilities   |

## EXECUTIVE SUMMARY

|                             |  |
|-----------------------------|--|
| IN CFO.....                 | Confined Feeding Operations              |
| IN COAL ASH.....            | Coal Ash Disposal Sites                  |
| KY COAL ASH.....            | Coal Ash Disposal Sites                  |
| IN DRYCLEANERS.....         | Drycleaner Facility Listing              |
| KY DRYCLEANERS.....         | Drycleaner Listing                       |
| IN Financial Assurance..... | Financial Assurance Information Listing  |
| KY Financial Assurance..... | Financial Assurance Information Listing  |
| IN IND WASTE.....           | Industrial Waste Sites Listing           |
| KY NPDES.....               | Permitted Facility Listing               |
| IN OISC.....                | Office of Indiana State Chemist Database |
| IN SCP.....                 | State Cleanup Program Sites              |
| IN UIC.....                 | UIC Site Listing                         |
| KY UIC.....                 | UIC Information                          |

### **EDR HIGH RISK HISTORICAL RECORDS**

#### ***EDR Exclusive Records***

|                       |   |
|-----------------------|---|
| EDR MGP.....          | EDR Proprietary Manufactured Gas Plants |
| EDR Hist Auto.....    | EDR Exclusive Historical Auto Stations  |
| EDR Hist Cleaner..... | EDR Exclusive Historical Cleaners       |

### **EDR RECOVERED GOVERNMENT ARCHIVES**

#### ***Exclusive Recovered Govt. Archives***

|                  |  |
|------------------|--|
| IN RGA HWS.....  | Recovered Government Archive State Hazardous Waste Facilities List |
| KY RGA HWS.....  | Recovered Government Archive State Hazardous Waste Facilities List |
| KY RGA LF.....   | Recovered Government Archive Solid Waste Facilities List           |
| IN RGA LUST..... | Recovered Government Archive Leaking Underground Storage Tank      |

### **SURROUNDING SITES: SEARCH RESULTS**

Surrounding sites were not identified.

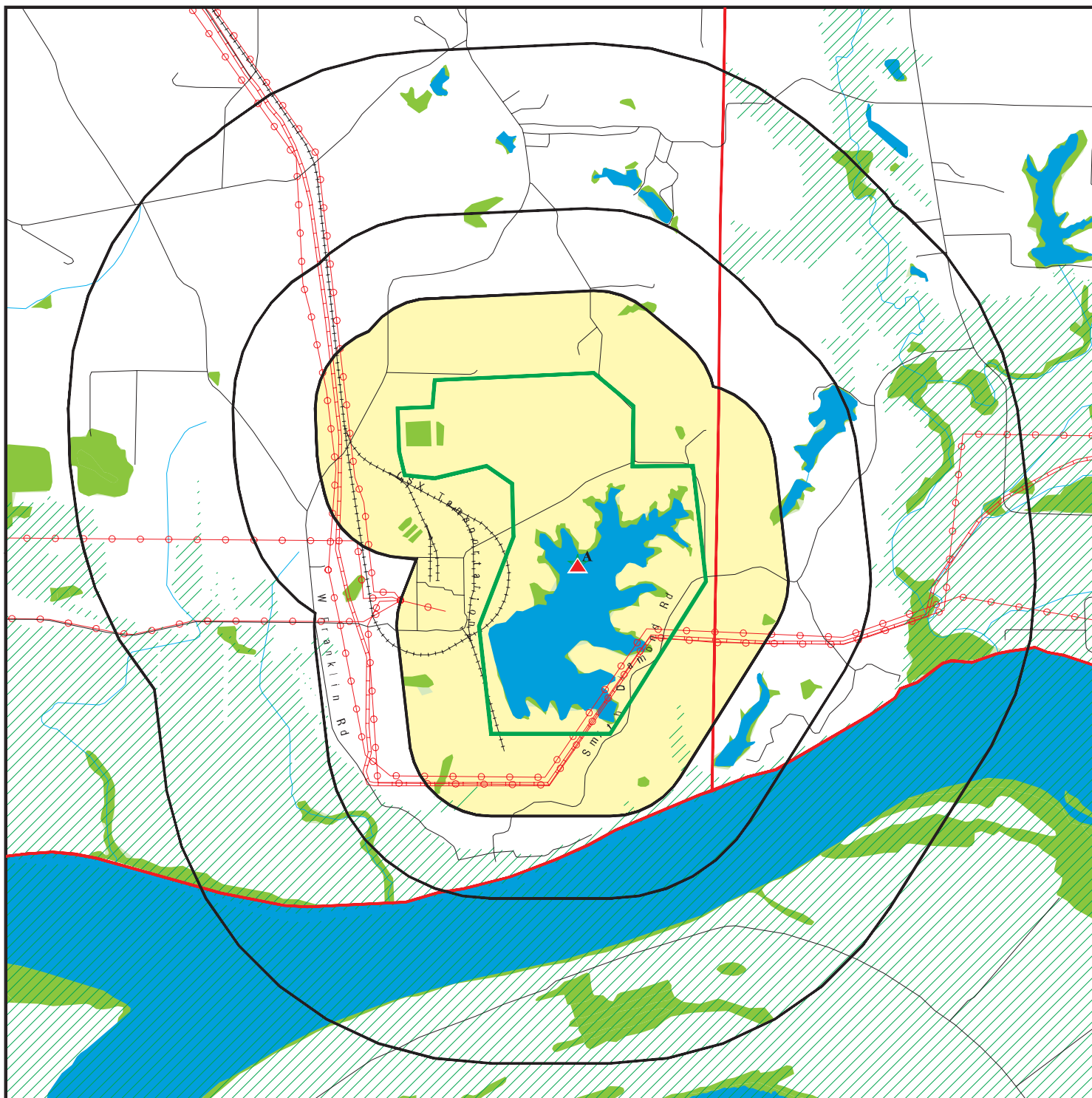
Unmappable (orphan) sites are not considered in the foregoing analysis.



## EXECUTIVE SUMMARY

There were no unmapped sites in this report.

# OVERVIEW MAP - 05203791.2R



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Upgradient Area

County Boundary

Power transmission lines

Pipelines

100-year flood zone

500-year flood zone

National Wetland Inventory

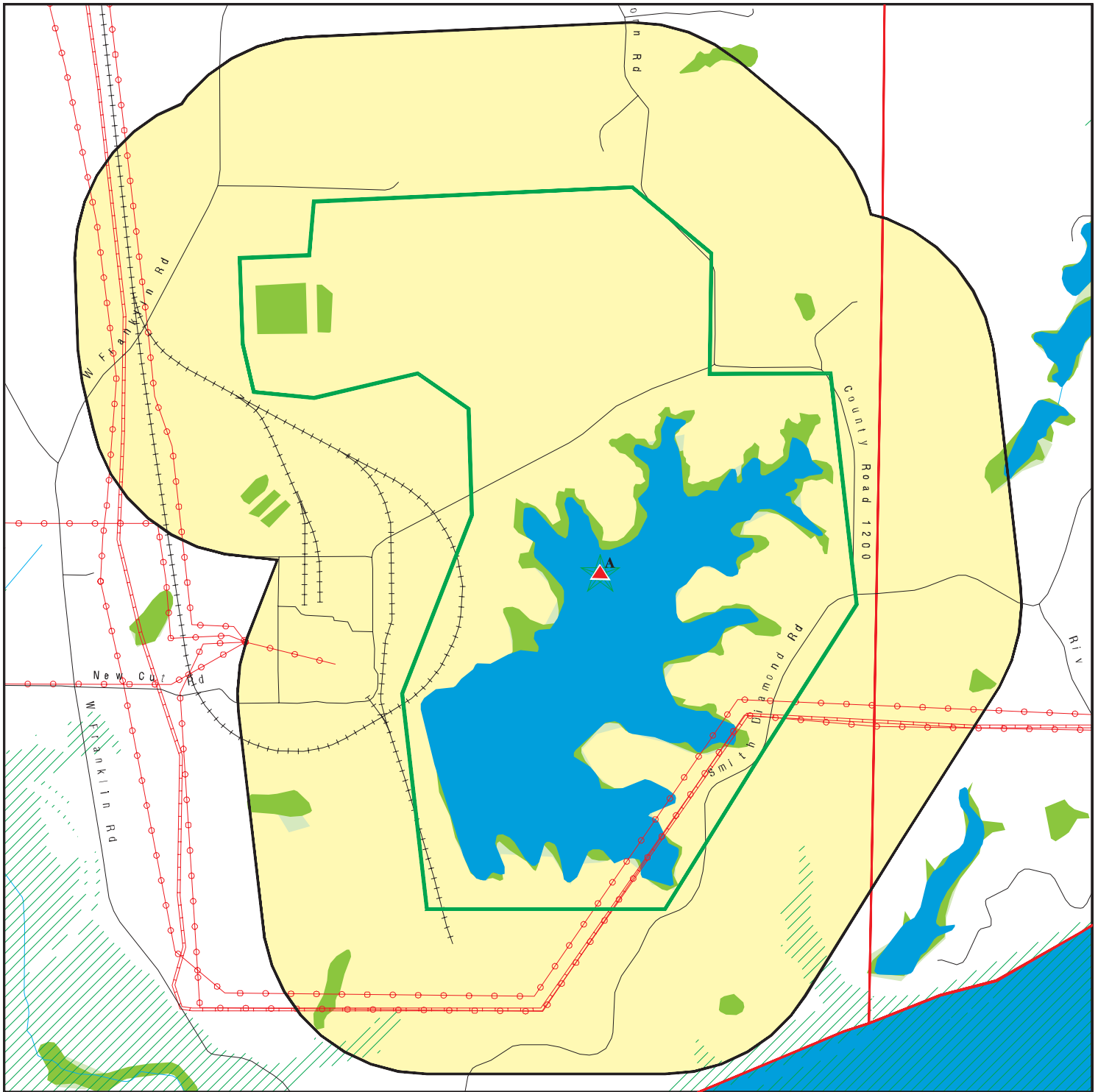
State Wetlands
















This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: A.B. Brown Generating Station  
 ADDRESS: 8511 Welborn Rd  
 Evansville IN 47712  
 LAT/LONG: 37.907776 / 87.707951

CLIENT: Haley & Aldrich, Inc.  
 CONTACT: Julia Scott  
 INQUIRY #: 05203791.2r  
 DATE: February 28, 2018 2:45 pm

# DETAIL MAP - 05203791.2R



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  Sensitive Receptors
-  National Priority List Sites
-  Dept. Defense Sites
-  Indian Reservations BIA
-  County Boundary
-  Power transmission lines
-  Pipelines
-  100-year flood zone
-  500-year flood zone
-  National Wetland Inventory
-  State Wetlands



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: A.B. Brown Generating Station  
 ADDRESS: 8511 Welborn Rd  
 Evansville IN 47712  
 LAT/LONG: 37.907776 / 87.707951

CLIENT: Haley & Aldrich, Inc.  
 CONTACT: Julia Scott  
 INQUIRY #: 05203791.2r  
 DATE: February 28, 2018 2:46 pm

## MAP FINDINGS SUMMARY

| Database   | Search<br>Distance<br>(Miles) | Target<br>Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total<br>Plotted |
|--|-------------------------------|--------------------|-------|-----------|-----------|---------|-----|------------------|
| <b>STANDARD ENVIRONMENTAL RECORDS</b>  |                               |                    |       |           |           |         |     |                  |
| <b><i>Federal NPL site list</i></b>  |                               |                    |       |           |           |         |     |                  |
| NPL  | 1.000                         |                    | 0     | 0         | 0         | 0       | NR  | 0                |
| Proposed NPL   | 1.000                         |                    | 0     | 0         | 0         | 0       | NR  | 0                |
| NPL LIENS  | TP                            |                    | NR    | NR        | NR        | NR      | NR  | 0                |
| <b><i>Federal Delisted NPL site list</i></b>                                   |                               |                    |       |           |           |         |     |                  |
| Delisted NPL   | 1.000                         |                    | 0     | 0         | 0         | 0       | NR  | 0                |
| <b><i>Federal CERCLIS list</i></b>   |                               |                    |       |           |           |         |     |                  |
| FEDERAL FACILITY   | 0.500                         |                    | 0     | 0         | 0         | NR      | NR  | 0                |
| SEMS   | 0.500                         |                    | 0     | 0         | 0         | NR      | NR  | 0                |
| <b><i>Federal CERCLIS NFRAP site list</i></b>                                  |                               |                    |       |           |           |         |     |                  |
| SEMS-ARCHIVE   | 0.500                         |                    | 0     | 0         | 0         | NR      | NR  | 0                |
| <b><i>Federal RCRA CORRACTS facilities list</i></b>                            |                               |                    |       |           |           |         |     |                  |
| CORRACTS   | 1.000                         |                    | 0     | 0         | 0         | 0       | NR  | 0                |
| <b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>                    |                               |                    |       |           |           |         |     |                  |
| RCRA-TSDF  | 0.500                         |                    | 0     | 0         | 0         | NR      | NR  | 0                |
| <b><i>Federal RCRA generators list</i></b>                                     |                               |                    |       |           |           |         |     |                  |
| RCRA-LQG   | 0.250                         |                    | 0     | 0         | NR        | NR      | NR  | 0                |
| RCRA-SQG   | 0.250                         |                    | 0     | 0         | NR        | NR      | NR  | 0                |
| RCRA-CESQG   | 0.250                         | 1                  | 0     | 0         | NR        | NR      | NR  | 1                |
| <b><i>Federal institutional controls / engineering controls registries</i></b> |                               |                    |       |           |           |         |     |                  |
| LUCIS  | 0.500                         |                    | 0     | 0         | 0         | NR      | NR  | 0                |
| US ENG CONTROLS  | 0.500                         |                    | 0     | 0         | 0         | NR      | NR  | 0                |
| US INST CONTROL  | 0.500                         |                    | 0     | 0         | 0         | NR      | NR  | 0                |
| <b><i>Federal ERNS list</i></b>  |                               |                    |       |           |           |         |     |                  |
| ERNS   | TP                            |                    | NR    | NR        | NR        | NR      | NR  | 0                |
| <b><i>State- and tribal - equivalent CERCLIS</i></b>                           |                               |                    |       |           |           |         |     |                  |
| IN SHWS  | 1.000                         |                    | 0     | 0         | 0         | 0       | NR  | 0                |
| KY SHWS  | 1.000                         |                    | 0     | 0         | 0         | 0       | NR  | 0                |
| <b><i>State and tribal landfill and/or solid waste disposal site lists</i></b> |                               |                    |       |           |           |         |     |                  |
| IN OPEN DUMPS  | 0.500                         |                    | 0     | 0         | 0         | NR      | NR  | 0                |
| IN SWF/LF  | 0.500                         | 1                  | 0     | 0         | 0         | NR      | NR  | 1                |
| KY SWF/LF  | 0.500                         |                    | 0     | 0         | 0         | NR      | NR  | 0                |
| <b><i>State and tribal leaking storage tank lists</i></b>                      |                               |                    |       |           |           |         |     |                  |
| IN LUST  | 0.500                         |                    | 0     | 0         | 0         | NR      | NR  | 0                |

## MAP FINDINGS SUMMARY

| Database   | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|--|-------------------------|-----------------|-------|-----------|-----------|---------|-----|---------------|
| INDIAN LUST  | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| <b>State and tribal registered storage tank lists</b>                          |                         |                 |       |           |           |         |     |               |
| FEMA UST   | 0.250                   |                 | 0     | 0         | NR        | NR      | NR  | 0             |
| IN UST   | 0.250                   |                 | 0     | 0         | NR        | NR      | NR  | 0             |
| KY UST   | 0.250                   |                 | 0     | 0         | NR        | NR      | NR  | 0             |
| IN AST   | 0.125                   |                 | 0     | NR        | NR        | NR      | NR  | 0             |
| INDIAN UST   | 0.250                   |                 | 0     | 0         | NR        | NR      | NR  | 0             |
| <b>State and tribal institutional control / engineering control registries</b> |                         |                 |       |           |           |         |     |               |
| IN AUL   | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| <b>State and tribal voluntary cleanup sites</b>                                |                         |                 |       |           |           |         |     |               |
| IN VCP   | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| KY VCP   | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| INDIAN VCP   | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| <b>State and tribal Brownfields sites</b>                                      |                         |                 |       |           |           |         |     |               |
| IN BROWNFIELDS   | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| KY BROWNFIELDS   | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| <b>ADDITIONAL ENVIRONMENTAL RECORDS</b>  |                         |                 |       |           |           |         |     |               |
| <b>Local Brownfield lists</b>  |                         |                 |       |           |           |         |     |               |
| US BROWNFIELDS   | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| <b>Local Lists of Landfill / Solid Waste Disposal Sites</b>                    |                         |                 |       |           |           |         |     |               |
| IN SWTIRE  | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| IN SWRCY   | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| KY SWRCY   | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| INDIAN ODI   | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| DEBRIS REGION 9  | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| ODI  | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| IHS OPEN DUMPS   | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| <b>Local Lists of Hazardous waste / Contaminated Sites</b>                     |                         |                 |       |           |           |         |     |               |
| US HIST CDL  | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| IN CDL   | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| KY CDL   | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| IN DEL SHWS  | 1.000                   |                 | 0     | 0         | 0         | 0       | NR  | 0             |
| US CDL   | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| <b>Local Land Records</b>  |                         |                 |       |           |           |         |     |               |
| LIENS 2  | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| <b>Records of Emergency Release Reports</b>                                    |                         |                 |       |           |           |         |     |               |
| HMIRS  | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |

## MAP FINDINGS SUMMARY

| Database                           | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|------------------------------------|-------------------------|-----------------|-------|-----------|-----------|---------|-----|---------------|
| IN SPILLS                          | TP                      | 2               | NR    | NR        | NR        | NR      | NR  | 2             |
| KY SPILLS                          | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| IN SPILLS 90                       | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| IN SPILLS 80                       | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| <b>Other Ascertainable Records</b> |                         |                 |       |           |           |         |     |               |
| RCRA NonGen / NLR                  | 0.250                   |                 | 0     | 0         | NR        | NR      | NR  | 0             |
| FUDS                               | 1.000                   |                 | 0     | 0         | 0         | 0       | NR  | 0             |
| DOD                                | 1.000                   |                 | 0     | 0         | 0         | 0       | NR  | 0             |
| SCRD DRYCLEANERS                   | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| US FIN ASSUR                       | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| EPA WATCH LIST                     | TP                      | 3               | NR    | NR        | NR        | NR      | NR  | 3             |
| 2020 COR ACTION                    | 0.250                   |                 | 0     | 0         | NR        | NR      | NR  | 0             |
| TSCA                               | TP                      | 1               | NR    | NR        | NR        | NR      | NR  | 1             |
| TRIS                               | TP                      | 1               | NR    | NR        | NR        | NR      | NR  | 1             |
| SSTS                               | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| ROD                                | 1.000                   |                 | 0     | 0         | 0         | 0       | NR  | 0             |
| RMP                                | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| RAATS                              | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| PRP                                | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| PADS                               | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| ICIS                               | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| FTTS                               | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| MLTS                               | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| COAL ASH DOE                       | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| COAL ASH EPA                       | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| PCB TRANSFORMER                    | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| RADINFO                            | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| HIST FTTS                          | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| DOT OPS                            | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| CONSENT                            | 1.000                   |                 | 0     | 0         | 0         | 0       | NR  | 0             |
| INDIAN RESERV                      | 1.000                   |                 | 0     | 0         | 0         | 0       | NR  | 0             |
| FUSRAP                             | 1.000                   |                 | 0     | 0         | 0         | 0       | NR  | 0             |
| UMTRA                              | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| LEAD SMELTERS                      | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| US AIRS                            | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| US MINES                           | 0.250                   |                 | 0     | 0         | NR        | NR      | NR  | 0             |
| ABANDONED MINES                    | 0.250                   |                 | 0     | 0         | NR        | NR      | NR  | 0             |
| FINDS                              | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| UXO                                | 1.000                   |                 | 0     | 0         | 0         | 0       | NR  | 0             |
| DOCKET HWC                         | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| ECHO                               | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| FUELS PROGRAM                      | 0.250                   |                 | 0     | 0         | NR        | NR      | NR  | 0             |
| IN AIRS                            | TP                      | 1               | NR    | NR        | NR        | NR      | NR  | 1             |
| KY AIRS                            | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| IN BULK                            | 0.250                   |                 | 0     | 0         | NR        | NR      | NR  | 0             |
| IN CFO                             | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| IN COAL ASH                        | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| KY COAL ASH                        | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| IN DRYCLEANERS                     | 0.250                   |                 | 0     | 0         | NR        | NR      | NR  | 0             |
| KY DRYCLEANERS                     | 0.250                   |                 | 0     | 0         | NR        | NR      | NR  | 0             |

## MAP FINDINGS SUMMARY

| Database               | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|------------------------|-------------------------|-----------------|-------|-----------|-----------|---------|-----|---------------|
| IN Financial Assurance | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| KY Financial Assurance | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| IN IND WASTE           | 0.250                   |                 | 0     | 0         | NR        | NR      | NR  | 0             |
| IN MANIFEST            | 0.250                   | 1               | 0     | 0         | NR        | NR      | NR  | 1             |
| IN NPDES               | TP                      | 6               | NR    | NR        | NR        | NR      | NR  | 6             |
| KY NPDES               | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| IN OISC                | 0.250                   |                 | 0     | 0         | NR        | NR      | NR  | 0             |
| IN SCP                 | 0.500                   |                 | 0     | 0         | 0         | NR      | NR  | 0             |
| IN TIER 2              | TP                      | 1               | NR    | NR        | NR        | NR      | NR  | 1             |
| IN UIC                 | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |
| KY UIC                 | TP                      |                 | NR    | NR        | NR        | NR      | NR  | 0             |

### EDR HIGH RISK HISTORICAL RECORDS

#### *EDR Exclusive Records*

|                  |       |  |   |    |    |    |    |   |
|------------------|-------|--|---|----|----|----|----|---|
| EDR MGP          | 1.000 |  | 0 | 0  | 0  | 0  | NR | 0 |
| EDR Hist Auto    | 0.125 |  | 0 | NR | NR | NR | NR | 0 |
| EDR Hist Cleaner | 0.125 |  | 0 | NR | NR | NR | NR | 0 |

### EDR RECOVERED GOVERNMENT ARCHIVES

#### *Exclusive Recovered Govt. Archives*

|             |    |    |    |    |    |    |    |    |
|-------------|----|----|----|----|----|----|----|----|
| IN RGA HWS  | TP |    | NR | NR | NR | NR | NR | 0  |
| KY RGA HWS  | TP |    | NR | NR | NR | NR | NR | 0  |
| IN RGA LF   | TP | 2  | NR | NR | NR | NR | NR | 2  |
| KY RGA LF   | TP |    | NR | NR | NR | NR | NR | 0  |
| IN RGA LUST | TP |    | NR | NR | NR | NR | NR | 0  |
| - Totals -- |    | 20 | 0  | 0  | 0  | 0  | 0  | 20 |

#### NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Site

Database(s)

EDR ID Number  
EPA ID Number

**A1**      **SIGECO - A.B. BROWN (SOUTHERN INDIANA GA**  
**Target**    **8511 WELBORN RD**  
**Property**   **EVANSVILLE, IN 47620**

**EPA WATCH LIST**    **1016145509**  
**N/A**

**Site 1 of 14 in cluster A**

**Actual:**  
**453 ft.**

EPA WATCH LIST:

|              |                           |
|--------------|---------------------------|
| Facility ID: | 1812900010                |
| Program:     | CAA Facilities            |
| List date:   | April 2013 CAA Watch List |
|              |                           |
| Facility ID: | 1812900010                |
| Program:     | CAA Facilities            |
| List date:   | June 2013 CAA Watch List  |
|              |                           |
| Facility ID: | 1812900010                |
| Program:     | CAA Facilities            |
| List date:   | March 2013 CAA Watch List |
|              |                           |
| Facility ID: | 1812900010                |
| Program:     | CAA Facilities            |
| List date:   | May 2013 CAA Watch List   |

**A2**      **SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN G**  
**Target**    **8511 WELBORN RD**  
**Property**   **MOUNT VERNON, IN 47620**

**IN SWF/LF**    **S107706550**  
**IN SPILLS**    **N/A**  
**IN AIRS**  
**IN NPDES**  
**IN TIER 2**

**Site 2 of 14 in cluster A**

**Actual:**  
**453 ft.**

LF:

|                       |   |
|-----------------------|---|
| Facility ID:          | Not reported                            |
| Facility Type:        | RESTRICTED WASTE SITE TYPE III          |
| Facility Status:      | Not reported                            |
| SR No:                | 177                                     |
| Contact:              | LISA MESSENGER                          |
| Operating Num:        | 65-07                                   |
| Date Closed:          | Not reported                            |
| Responsible Party:    | NORMAN P WAGNER                         |
| RP Phone:             | 812-424-6411                            |
| RP Address:           | 20-24 NW FORUTH                         |
| RP City,St,Zip:       | EVANSVILLE, IN 47741                    |
| Contact Phone:        | 812-491-4000                            |
| Owner Name:           | SOUTHERN INDIANA GAS & ELECTRIC COMPANY |
| Owner Type:           | P                                       |
| Permanent Expiration: | 10/31/2021                              |
| Open To Public:       | N                                       |

SPILL:

|                   |               |
|-------------------|---------------|
| Facility ID:      | 200005087     |
| Incident Date:    | 05/10/2000    |
| Report Date:      | 05/10/2000    |
| Material:         | Sulfuric acid |
| Spill Source:     | Industrial    |
| Recovered Amount: | Not reported  |
| Recovered Units:  | Not reported  |
| Spilled Amount:   | Not reported  |
| Spilled Units:    | Not reported  |
| Contained:        | Not reported  |
| Water Affected:   | Not reported  |



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Spill Type: Air  
Area Affected: Not reported  
Fish Killed: Not reported  
Water Supply Affected: Not reported  
Public Intake: N  
Incident Status: Not reported

Facility ID: 199902080  
Incident Date: 02/09/1999  
Report Date: 02/09/1999  
Material: Sulfuric Acid  
Spill Source: Trans - Truck  
Recovered Amount: U  
Recovered Units: Not reported  
Spilled Amount: Not reported  
Spilled Units: U  
Contained: N  
Water Affected: Not reported  
Spill Type: Spill  
Area Affected: Not reported  
Fish Killed: Not reported  
Water Supply Affected: Not reported  
Public Intake: U  
Incident Status: Not reported

**AIRS:**

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Vickie Cordell  
Responsible Official Phone: 317-233-1782  
SIC Code: 4911  
Permit ID: 129-6848-00010  
Permit Level: Title V  
Subtype Qualifier: Not reported  
Issue Date: 12/15/2004  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 10/08/1996  
Application Received End Date: Not reported  
Public Notice Begins Start Date: 12/24/2003  
Public Notice Begins End Date: 01/23/2004  
Proposed Internet Upload Start Date: 10/28/2004  
Proposed Internet Upload End Date: 12/11/2004

Status: Combined  
Source ID: 129-00010  
Responsible Official Name: Rebecca Mason  
Responsible Official Phone: 3-5692  
SIC Code: 4911  
Permit ID: 129-17032-00010  
Permit Level: Title V  
Subtype Qualifier: SPM - NOx Budget Permit  
Issue Date: Not reported  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 08/01/2003  
Application Received End Date: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Public Notice Begins Start Date: Not reported  
Public Notice Begins End Date: Not reported  
Proposed Internet Upload Start Date: Not reported  
Proposed Internet Upload End Date: Not reported

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Vickie Cordell  
Responsible Official Phone: 317-233-1782  
SIC Code: 4911  
Permit ID: 129-12029-00010  
Permit Level: Title V  
Subtype Qualifier: Significant Source Mod. (Major PSD/EO) (270)  
Issue Date: 11/29/2001  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 03/13/2000  
Application Received End Date: Not reported  
Public Notice Begins Start Date: 09/26/2001  
Public Notice Begins End Date: 10/26/2001  
Proposed Internet Upload Start Date: Not reported  
Proposed Internet Upload End Date: Not reported

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Not reported  
Responsible Official Phone: Not reported  
SIC Code: 4911  
Permit ID: 129-14441-00010  
Permit Level: Acid Rain  
Subtype Qualifier: Not reported  
Issue Date: 11/19/2001  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 05/30/2001  
Application Received End Date: Not reported  
Public Notice Begins Start Date: 09/26/2001  
Public Notice Begins End Date: 10/26/2001  
Proposed Internet Upload Start Date: 09/24/2001  
Proposed Internet Upload End Date: 11/08/2001

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Gurinder Saini  
Responsible Official Phone: 800-451-6027  
SIC Code: 4911  
Permit ID: 129-14021-00010  
Permit Level: Title V  
Subtype Qualifier: Significant Source Mod. (Major PSD/EO) (270)  
Issue Date: 11/16/2001  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 03/05/2001  
Application Received End Date: Not reported  
Public Notice Begins Start Date: 09/26/2001  
Public Notice Begins End Date: 10/26/2001  
Proposed Internet Upload Start Date: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Proposed Internet Upload End Date: Not reported

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Robert W. Ondrusek  
Responsible Official Phone: 800-451-6027  
SIC Code: 4911  
Permit ID: 129-10331-00010  
Permit Level: Acid Rain  
Subtype Qualifier: Administrative Amendment  
Issue Date: 09/25/2001  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 11/06/1998  
Application Received End Date: Not reported  
Public Notice Begins Start Date: 12/30/1998  
Public Notice Begins End Date: 01/29/1999  
Proposed Internet Upload Start Date: 12/14/1999  
Proposed Internet Upload End Date: 12/22/1999

Status: Draft  
Source ID: 129-00010  
Responsible Official Name: Deena Patton  
Responsible Official Phone: 317-234-5400  
SIC Code: 4911  
Permit ID: 129-37317-00010 (No Electronic File Exists)  
Permit Level: Title V  
Subtype Qualifier: Significant Permit Modification  
Issue Date: Not reported  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 06/21/2016  
Application Received End Date: Not reported  
Public Notice Begins Start Date: Not reported  
Public Notice Begins End Date: Not reported  
Proposed Internet Upload Start Date: Not reported  
Proposed Internet Upload End Date: Not reported

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Josiah Balogun  
Responsible Official Phone: 317-234-5257  
SIC Code: 4911  
Permit ID: 129-36150-00010  
Permit Level: Acid Rain  
Subtype Qualifier: Renewal  
Issue Date: 01/25/2016  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 08/11/2015  
Application Received End Date: Not reported  
Public Notice Begins Start Date: 12/01/2015  
Public Notice Begins End Date: 12/31/2015  
Proposed Internet Upload Start Date: 01/06/2016  
Proposed Internet Upload End Date: 01/21/2016

Status: Issued

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Source ID: 129-00010  
Responsible Official Name: Deena Patton  
Responsible Official Phone: 317-234-5400  
SIC Code: 4911  
Permit ID: 129-35974-00010  
Permit Level: Title V  
Subtype Qualifier: Significant Permit Modification  
Issue Date: 12/28/2015  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 06/23/2015  
Application Received End Date: Not reported  
Public Notice Begins Start Date: 10/28/2015  
Public Notice Begins End Date: 11/27/2015  
Proposed Internet Upload Start Date: 12/03/2015  
Proposed Internet Upload End Date: 12/18/2015

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Anh Nguyen  
Responsible Official Phone: 317-233-5334  
SIC Code: 4911  
Permit ID: 129-33047-00010  
Permit Level: Title V  
Subtype Qualifier: Renewal  
Issue Date: 11/07/2014  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 04/04/2013  
Application Received End Date: Not reported  
Public Notice Begins Start Date: 09/10/2014  
Public Notice Begins End Date: 10/10/2014  
Proposed Internet Upload Start Date: 10/21/2014  
Proposed Internet Upload End Date: 11/05/2014

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Josiah Balogun  
Responsible Official Phone: 317-234-5257  
SIC Code: 4911  
Permit ID: 129-29915-00010  
Permit Level: Acid Rain  
Subtype Qualifier: Renewal  
Issue Date: 02/10/2011  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 11/22/2010  
Application Received End Date: Not reported  
Public Notice Begins Start Date: 12/15/2010  
Public Notice Begins End Date: 01/14/2011  
Proposed Internet Upload Start Date: 01/24/2011  
Proposed Internet Upload End Date: 02/08/2011

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: PR 2  
Responsible Official Phone: XXX-XXX-XXXX

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

SIC Code: 4911  
Permit ID: 129-26321-00010  
Permit Level: Title V  
Subtype Qualifier: SPM - CAIR  
Issue Date: 07/24/2009  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 03/24/2008  
Application Received End Date: Not reported  
Public Notice Begins Start Date: 06/03/2009  
Public Notice Begins End Date: 07/03/2009  
Proposed Internet Upload Start Date: 07/07/2009  
Proposed Internet Upload End Date: 07/22/2009

Status: Canceled  
Source ID: 129-00010  
Responsible Official Name: PR 2  
Responsible Official Phone: XXX-XXX-XXXX  
SIC Code: 4911  
Permit ID: 129-20365-00010 (No Electronic File Exists)  
Permit Level: Appeal Resolution  
Subtype Qualifier: Not reported  
Issue Date: Not reported  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 01/12/2005  
Application Received End Date: Not reported  
Public Notice Begins Start Date: Not reported  
Public Notice Begins End Date: Not reported  
Proposed Internet Upload Start Date: Not reported  
Proposed Internet Upload End Date: Not reported

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Josiah Balogun  
Responsible Official Phone: 317-234-5257  
SIC Code: 4911  
Permit ID: 129-26415-00010  
Permit Level: Title V  
Subtype Qualifier: Renewal  
Issue Date: 01/26/2009  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 04/14/2008  
Application Received End Date: Not reported  
Public Notice Begins Start Date: 12/03/2008  
Public Notice Begins End Date: 01/02/2009  
Proposed Internet Upload Start Date: 01/09/2009  
Proposed Internet Upload End Date: 01/24/2009

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Alexandra Yeung  
Responsible Official Phone: 800-451-6027  
SIC Code: 4911  
Permit ID: 129-19748-00010  
Permit Level: Acid Rain

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Subtype Qualifier: Renewal  
Issue Date: 05/09/2006  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 04/22/2004  
Application Received End Date: Not reported  
Public Notice Begins Start Date: 11/04/2004  
Public Notice Begins End Date: 12/03/2004  
Proposed Internet Upload Start Date: 03/23/2006  
Proposed Internet Upload End Date: 05/07/2006

Status: Canceled  
Source ID: 129-00010  
Responsible Official Name: Walter Habeeb  
Responsible Official Phone: 317-232-8422  
SIC Code: 4911  
Permit ID: 129-17709-00010 (No Electronic File Exists)  
Permit Level: Amendment  
Subtype Qualifier: Not reported  
Issue Date: Not reported  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 05/07/2003  
Application Received End Date: Not reported  
Public Notice Begins Start Date: Not reported  
Public Notice Begins End Date: Not reported  
Proposed Internet Upload Start Date: Not reported  
Proposed Internet Upload End Date: Not reported

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Vickie Cordell  
Responsible Official Phone: 317-233-1782  
SIC Code: 4911  
Permit ID: 129-21413-00010  
Permit Level: Title V  
Subtype Qualifier: Administrative Amendment  
Issue Date: 07/21/2005  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 06/10/2005  
Application Received End Date: Not reported  
Public Notice Begins Start Date: Not reported  
Public Notice Begins End Date: Not reported  
Proposed Internet Upload Start Date: Not reported  
Proposed Internet Upload End Date: Not reported

Status: Withdrawn  
Source ID: 129-00010  
Responsible Official Name: Vickie Cordell  
Responsible Official Phone: 317-233-1782  
SIC Code: 4911  
Permit ID: 129-12848-00010 (No Electronic File Exists)  
Permit Level: Title V  
Subtype Qualifier: Significant Permit Modification  
Issue Date: Not reported  
End Date: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Source Contact: Allen K. Rose  
Application Received Start Date: 10/12/2000  
Application Received End Date: Not reported  
Public Notice Begins Start Date: Not reported  
Public Notice Begins End Date: Not reported  
Proposed Internet Upload Start Date: Not reported  
Proposed Internet Upload End Date: Not reported

Status: Combined  
Source ID: 129-00010  
Responsible Official Name: Vickie Cordell  
Responsible Official Phone: 317-233-1782  
SIC Code: 4911  
Permit ID: 129-11288-00010  
Permit Level: Title V  
Subtype Qualifier: Significant Source Mod. (Major PSD/EO) (270)  
Issue Date: Not reported  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 08/24/1999  
Application Received End Date: Not reported  
Public Notice Begins Start Date: Not reported  
Public Notice Begins End Date: Not reported  
Proposed Internet Upload Start Date: Not reported  
Proposed Internet Upload End Date: Not reported

Status: Withdrawn  
Source ID: 129-00010  
Responsible Official Name: Bryan Sheets  
Responsible Official Phone: 800-451-6027  
SIC Code: 4911  
Permit ID: 129-10856-00010 (No Electronic File Exists)  
Permit Level: Title V  
Subtype Qualifier: Significant Source Mod. (Major PSD/EO) (270)  
Issue Date: Not reported  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 04/13/1999  
Application Received End Date: Not reported  
Public Notice Begins Start Date: Not reported  
Public Notice Begins End Date: Not reported  
Proposed Internet Upload Start Date: Not reported  
Proposed Internet Upload End Date: Not reported

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Bryan Sheets  
Responsible Official Phone: 800-451-6027  
SIC Code: 4911  
Permit ID: 129-11581-00010 (No Electronic File Exists)  
Permit Level: Review Request  
Subtype Qualifier: Not reported  
Issue Date: 12/03/1999  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 11/23/1999  
Application Received End Date: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Public Notice Begins Start Date: Not reported  
Public Notice Begins End Date: Not reported  
Proposed Internet Upload Start Date: Not reported  
Proposed Internet Upload End Date: Not reported

Status: Combined  
Source ID: 129-00010  
Responsible Official Name: Not reported  
Responsible Official Phone: Not reported  
SIC Code: 4911  
Permit ID: 129-8930-00010  
Permit Level: Acid Rain  
Subtype Qualifier: Administrative Amendment  
Issue Date: Not reported  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 06/24/1997  
Application Received End Date: Not reported  
Public Notice Begins Start Date: Not reported  
Public Notice Begins End Date: Not reported  
Proposed Internet Upload Start Date: Not reported  
Proposed Internet Upload End Date: Not reported

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Tena Hopkins  
Responsible Official Phone: 800-451-6027  
SIC Code: 4911  
Permit ID: 129-5153-00010  
Permit Level: Acid Rain  
Subtype Qualifier: Not reported  
Issue Date: 12/31/1997  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 12/27/1995  
Application Received End Date: Not reported  
Public Notice Begins Start Date: 10/29/1997  
Public Notice Begins End Date: 11/28/1997  
Proposed Internet Upload Start Date: 12/30/1997  
Proposed Internet Upload End Date: 12/31/1997

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Holly Stockrahm  
Responsible Official Phone: 800-451-6027  
SIC Code: 4911  
Permit ID: 129-4226-00010 (No Electronic File Exists)  
Permit Level: Construction  
Subtype Qualifier: Registration  
Issue Date: 12/29/1994  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 11/16/1994  
Application Received End Date: Not reported  
Public Notice Begins Start Date: Not reported  
Public Notice Begins End Date: Not reported  
Proposed Internet Upload Start Date: Not reported



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Proposed Internet Upload End Date: Not reported

Status: Issued  
Source ID: 129-00010  
Responsible Official Name: Holly Stockrahm  
Responsible Official Phone: 800-451-6027  
SIC Code: 4911  
Permit ID: 129-4198-00010 (No Electronic File Exists)  
Permit Level: Construction  
Subtype Qualifier: Interim (Registration)  
Issue Date: 11/30/1994  
End Date: Not reported  
Source Contact: Allen K. Rose  
Application Received Start Date: 11/16/1994  
Application Received End Date: Not reported  
Public Notice Begins Start Date: Not reported  
Public Notice Begins End Date: Not reported  
Proposed Internet Upload Start Date: Not reported  
Proposed Internet Upload End Date: Not reported

**NPDES:**

Permit Number: IN0052191  
Primary Facility Sic Code: Not reported  
Major/Minor: Major  
Primary Facility Sic Desc: Not reported  
Facility Type Desc: Privately Owned Facility  
Permit Status Desc: Effective  
Issue Date: 02/28/2017  
Expired Date: 03/31/2022  
Effective Date: 04/01/2017  
Terminated Date: Not reported  
DMR Cognizant Official: DAVID REHERMAN, PLT DIR  
DMR Cognizant Telephone: 812-491-4666  
Waterbody: OHIO RIVER  
Total Actual Average Flow (MGD): 1.03  
Total App. Design Flow (MGD): Not reported  
FRS HUC Code: 05140202  
Latitude In Decimal Degrees: 37.969694  
Longitude In Decimal Degrees: -87.605389

**TIER 2:**

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Chlorine  
Chemical Info: CAS Num:7782505 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100 - 499 Quantity: 365 Container Type: L - Cylinder  
Location Description: 2x150-lb cylinder in chlorine bldg  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100 - 499

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: GE Betz PDC9325  
Chemical Info: CAS Num: Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: C - Tank

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Location Description: Inside Building  
Unit 1 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank

Location Description: Electric transformers east of cooling tower #1  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Carbonate  
Chemical Info: CAS Num:497198 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank

Location Description: Unit 1 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank

Location Description: Landfill - 2 tanks  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Coal handling area  
Location Description: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
Storage Info: 10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Location Description: 6000 gal, Unit 2 main floor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Calcium Oxide  
Chemical Info: CAS Num:1305788 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000000-499999999 Quantity: 365 Container Type: H - Silo  
Location Description: Storage silo 2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000000-499999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-260 gal, Unit #1 Fuel Oil Tank  
Location Description: 260 gal, Unit #1 Fuel Oil Tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Carbon Dioxide  
Chemical Info: CAS Num:124389 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 50000 - 74999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 6 ton tank near entrance road  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 50000 - 74999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: De-energized transformer at plant entrance  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: D - Steel Drum  
Location Description: Boiler Unit #2 drums  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

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EDR ID Number  
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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: C - Tank  
Inside Building  
Location Description: Boiler Unit #2 EHC Reservoir  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Landfill - 2 tanks  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfur  
Chemical Info: CAS Num:7704349 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit 2 thickener tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Black Beauty Abrasive  
Chemical Info: CAS Num: Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 75000 - 99999 Quantity: 365 Container Type: R - Other  
Location Description: U2 absorber towers; Maintenance shop; SIMI Bldg; So side of U2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
75000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Ferric Chloride  
Chemical Info: CAS Num:7705080 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 150 Container Type: O - Tote  
Bin  
Location Description: Ash Pond Chemical Building - 2 totes  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Steel Drum  
Location Description: Boiler Unit #2 drums

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Other  
Location Description: substation battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
04

Facility Id: Not reported  
SIC Code: Not reported  
Chemical Name: Not reported  
Chemical Info: CAS Num: Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: Quantity: Container Type:  
Location Description: Not reported  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Hydroxide  
Chemical Info: CAS Num:1310732 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Location Description: #2 Cooling Tower - 1500 gal tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: R - Other  
Location Description: Unit 1 battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Location Description: 2-8000 gal tank at cooling towers  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

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Database(s)

EDR ID Number  
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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: C - Tank I  
Location Description: Boiler Unit #2 EHC Reservoir  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: De-energized transformer at plant entrance  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: C - Tank  
Inside Building  
Location Description: Boiler Unit #1 EHC Reservoir  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit #2 Compressor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Coal handling area  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Carbonate  
Chemical Info: CAS Num:497198 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 06 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: Unit 2 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

06

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: 1-hydroxyethylidene-1, 1-diphosphonic acid  
Chemical Info: CAS Num:2809214 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Tank Inside Building  
Location Description: Unit 2 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Chlorine  
Chemical Info: CAS Num:7782505 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 02 Quantity: 365 Container Type: Cylinder  
Location Description: 100 lb cylinder in chlorine bldg  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 02

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 3  
Chemical Info: CAS Num:999003 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 25000 - 49999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 1500 gal, Unit 2 Circ Water pump  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 25000 - 49999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Carbon Dioxide  
Chemical Info: CAS Num:124389 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 50000 - 74999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 30 ton tank S of Unit 2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 50000 - 74999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: GE Betz PDC9325  
Chemical Info: CAS Num: Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: C - Tank Inside Building  
Location Description: Unit 1 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000 - 24999

Facility Id: 11785

Map ID  
Direction  
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MAP FINDINGS

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EDR ID Number  
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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Electric transformers east of cooling tower #1  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Carbonate  
Chemical Info: CAS Num:497198 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit 1 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 6000 gal, Unit 2 main floor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Maintenance shop  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: R -  
Other  
Location Description: substation battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfur



Map ID  
Direction  
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MAP FINDINGS

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Chemical Info: CAS Num:7704349 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit 1 thickener tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Carbonate  
Chemical Info: CAS Num:497198 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit 2 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 5  
Chemical Info: CAS Num:999005 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000000 - 9999999999 Quantity: 365 Container Type: R  
- Other  
Location Description: coal pile  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000000 - 9999999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit #3  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Location Description: Maintenance shop  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Calcium Oxide  
Chemical Info: CAS Num:1305788 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000000-4999999999 Quantity: 365 Container Type: H -  
Silo

Map ID  
Direction  
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MAP FINDINGS

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Database(s)

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Location Description: Storage silo 1  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000000-499999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Chlorine  
Chemical Info: CAS Num:7782505 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100-999 Quantity: 365 Container Type: L - Cylind  
Location Description: 100 lb cylinder in chlorine bldg  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100-999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Carbon Dioxide  
Chemical Info: CAS Num:124389 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 50000 - 74999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 30 ton tank S of Unit 2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 50000 - 74999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Carbonate  
Chemical Info: CAS Num:497198 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: Unit 2 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 300 gal, Unit #2 Compressor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: Two 50,000 gal tanks at Unit #3  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

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EDR ID Number  
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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: Coal handling area  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Ammonium hydroxide  
Chemical Info: CAS Num:1336216 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 06 Quantity: 365 Container Type: Tank Inside Building  
Location Description: Two 36,000-gal tanks on south side of pl  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 06

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: Unit #1 Compressor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Tank Inside Building  
Location Description: Boiler Unit #1 EHC Reservoir  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: 6000 gal, Unit 2 main floor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Chlorine  
Chemical Info: CAS Num:7782505 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100 - 999 Quantity: 365 Container Type: L - Cylinder  
Location Description: 2x150-lb cylinder in chlorine bldg

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100 - 999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: C - Tank  
Inside Building  
Location Description: Boiler Unit #2 EHC Reservoir  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 6000 gal, Unit 1 main floor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Calcium Oxide  
Chemical Info: CAS Num:1305788 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 09 Quantity: 365 Container Type: Silo  
Location Description: Storage silo 1  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
09

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Two 50,000 gal tanks at Unit #3  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 2-7000 gal tank at cooling towers  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

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Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Ferric Chloride  
Chemical Info: CAS Num:7705080 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 150 Container Type: O - Tote Bin  
Location Description: Ash Pond Chemical Building - 2 totes  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: C - Tank Inside Building  
Location Description: Boiler Unit #2 EHC Reservoir  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 7  
Chemical Info: CAS Num:999007 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: C - Tank Inside Building  
Location Description: Unit 2 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 6000 gal, Unit 1 main floor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 2-8000 gal tank at cooling towers  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported

Map ID  
Direction  
Distance  
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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Location Description: Unit #2 Fuel Oil Tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 5  
Chemical Info: CAS Num:999005 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000000-999999999 Quantity: 365 Container Type: R -  
Other  
Location Description: coal pile  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000000-999999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Carbonate  
Chemical Info: CAS Num:497198 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 1000000-999999999 Quantity: 365 Container Type: A -  
Above-  
Location Description: Unit 1 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
1000000-999999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Hydroxide  
Chemical Info: CAS Num:1310732 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Location Description: #1 Cooling Tower - 1500 gal tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Oil water separator  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

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EDR ID Number  
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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Location Description: 2-7000 gal tank at cooling towers  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: R - Other

Location Description: Unit 2 battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: R - Other

Location Description: Unit 1 battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Ferric Chloride  
Chemical Info: CAS Num:7705080 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 150 Container Type: O - Tote Bin  
Location Description: Unit 2 Main Floor - max 4 totes  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfur  
Chemical Info: CAS Num:7704349 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 05 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: 15,000 gal Unit 1thickener tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 05

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Other  
Location Description: gas turbine battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

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EDR ID Number  
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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 3  
Chemical Info: CAS Num:999003 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: 1500 gal, Unit 2 Circ Water pump  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Other  
Location Description: Unit 2 battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Hydroxide  
Chemical Info: CAS Num:1310732 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: #2 Cooling Tower - 1500 gal tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: R - Other  
Location Description: gas turbine battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: A -  
Location Description: Electric transformers east of cooling tower #1  
Storage Info: Above-Ground Tank  
Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank



Map ID  
Direction  
Distance  
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MAP FINDINGS

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Location Description: Landfill - 2 tanks  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: A -  
Above-Ground Tank

Location Description: Crane bay  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Ammonium hydroxide  
Chemical Info: CAS Num:1336216 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: C -  
Tank Inside Building

Location Description: South side of plant  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Hydroxide  
Chemical Info: CAS Num:1310732 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: A -  
Above-Ground Tank

Location Description: #1 Cooling Tower - 1500 gal tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Ammonium hydroxide  
Chemical Info: CAS Num:1336216 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: C -  
Tank Inside Building

Location Description: South side of plant  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Calcium Oxide  
Chemical Info: CAS Num:1305788 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 1000000 - 9999999 Quantity: 365 Container Type: H -  
Silo

Location Description: Storage Silo 2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:

Map ID  
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MAP FINDINGS

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

1000000 - 9999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: C -  
Tank Inside Building  
Location Description: 6000 gal, Unit 2 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Carbonate  
Chemical Info: CAS Num:497198 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit 2 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: R -  
Other  
Location Description: Unit 1 battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Ferric Chloride  
Chemical Info: CAS Num:7705080 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 150 Container Type: O - Tote  
Bin  
Location Description: Unit 2 Main Floor - max 4 totes  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Carbon Dioxide  
Chemical Info: CAS Num:124389 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 50000 - 74999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 30 ton tank S of Unit 2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
50000 - 74999

Map ID  
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MAP FINDINGS

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: GE Betz PDC9325  
Chemical Info: CAS Num: Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: C - Tank  
Inside Building  
Location Description: Unit 2 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit #2 Compressor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: R -  
Other  
Location Description: Unit 2 battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: R -  
Other  
Location Description: gas turbine battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Landfill - 2 tanks  
Location Description: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
Storage Info: 10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 3

Map ID  
Direction  
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MAP FINDINGS

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Chemical Info: CAS Num:999003 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Location Description: 1500 gal, Unit 1 Circ Water pump  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Carbonate  
Chemical Info: CAS Num:497198 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 1000000-9999999 Quantity: 365 Container Type: A -  
Above-  
Location Description: Unit 2 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
1000000-9999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Ammonium hydroxide  
Chemical Info: CAS Num:1336216 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 1000000-9999999 Quantity: 365 Container Type: C -  
Tank I  
Location Description: Two 36,000-gal tanks on south side of plant  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
1000000-9999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: C - Tank  
Inside Building  
Location Description: Boiler Unit #1 EHC Reservoir  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 5  
Chemical Info: CAS Num:999005 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000000 - 9999999999 Quantity: 365 Container Type: R  
- Other  
Location Description: coal pile  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000000 - 9999999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank

Map ID  
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MAP FINDINGS

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Location Description: Coal Handling Service Area  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A - Above-Ground Tank

Location Description: 300 gal, Unit #1 Compressor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank

Location Description: Maintenance shop  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Ferric Chloride  
Chemical Info: CAS Num:7705080 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 150 Container Type: O - Tote Bin

Location Description: Cooling Tower Chemical Building - 2 totes  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: Oil water separator  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Hydroxide  
Chemical Info: CAS Num:1310732 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: #1 Cooling Tower - 1500 gal tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Map ID  
Direction  
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MAP FINDINGS

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: 260 gal, Unit #1 Fuel Oil Tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: D - Steel  
Location Description: Boiler Unit #2 drums  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Calcium Oxide  
Chemical Info: CAS Num:1305788 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 1000000 - 9999999 Quantity: 365 Container Type: H - Silo  
Location Description: Storage Silo 2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 1000000 - 9999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Carbonate  
Chemical Info: CAS Num:497198 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 1000000 - 9999999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: Unit 2 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 1000000 - 9999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: Coal Handling Service Area  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:

Map ID  
Direction  
Distance  
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MAP FINDINGS

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: R - Other  
Location Description: substation battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfur  
Chemical Info: CAS Num:7704349 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: Unit 1 thickener tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfur  
Chemical Info: CAS Num:7704349 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: Unit 2 thickener tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: Unit #2 Compressor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: Unit #3  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: C - Tank Inside Building

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Location Description: Boiler Unit #1 EHC Reservoir  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: C - Tank Inside Building

Location Description: Boiler Unit #2 EHC Reservoir  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: Coal Handling Service Area  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 300 gal, Unit #1 Fuel Oil Tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: Coal handling area  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: C - Tank Inside Building  
Location Description: 6000 gal, Unit 2 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:



Map ID  
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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: C -  
Tank Inside Building  
Location Description: 6000 gal, Unit 1 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: C - Tank  
Inside Building  
Location Description: Boiler Unit #1 EHC Reservoir  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 3  
Chemical Info: CAS Num:999003 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 25000 - 49999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 1500 gal, Unit 1 Circ Water pump  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
25000 - 49999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Black Beauty Abrasive  
Chemical Info: CAS Num: Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 75000 - 99999 Quantity: 365 Container Type: R - Other  
Location Description: U2 absorber towers; Maintenance shop; SIMI Bldg; So side of U2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
75000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Location Description: Unit #1 Compressor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

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EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

SIC Code: Not reported  
Chemical Name: GE Betz PDC9325  
Chemical Info: CAS Num: Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: C - Tank I  
Location Description: Unit 1 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: GE Betz PDC9325  
Chemical Info: CAS Num: Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: C - Tank I  
Location Description: Unit 2 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 7  
Chemical Info: CAS Num:999007 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000-999999 Quantity: 365 Container Type: C - Tank  
I  
Location Description: Unit 2 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000-999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Chlorine  
Chemical Info: CAS Num:7782505 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100 - 499 Quantity: 365 Container Type: L - Cylinder  
Location Description: 2x150-lb cylinder in chlorine bldg  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100 - 499

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: GE Betz PDC9325  
Chemical Info: CAS Num: Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: C - Tank  
Inside Building  
Location Description: Unit 2 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Location Description: Crane bay  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: 2-8000 gal tank at cooling towers  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: Unit #2 Fuel Oil Tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 7  
Chemical Info: CAS Num:999007 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 05 Quantity: 365 Container Type: Tank Inside Building  
Location Description: Unit 2 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
05

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: Coal Handling Service Area  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: GE Betz PDC9325  
Chemical Info: CAS Num: Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: C - Tank  
Inside Building  
Location Description: Unit 2 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: C -  
Tank Inside Building  
Location Description: 6000 gal, Unit 1 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: D - Steel  
Drum  
Location Description: Boiler Unit #2 drums  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit #2 Fuel Oil Tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 260 gal, Unit #1 Fuel Oil Tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 2-8000 gal tank at cooling towers  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid

Map ID  
Direction  
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Elevation

MAP FINDINGS

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Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: R -  
Other  
Location Description: Unit 1 battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: R -  
Other  
Location Description: gas turbine battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Hydroxide  
Chemical Info: CAS Num:1310732 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: #2 Cooling Tower - 1500 gal tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Carbonate  
Chemical Info: CAS Num:497198 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 06 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: Unit 1 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
06

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 05 Quantity: 365 Container Type: Tank Inside Building  
Location Description: 6000 gal, Unit 2 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
05

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 2-8000 gal tank at cooling towers

Map ID  
Direction  
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MAP FINDINGS

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Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Hydrogen Bromide  
Chemical Info: CAS Num:10035106 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 25000 - 49999 Quantity: 60 Container Type: O - Tote  
Bin  
Location Description: Unit 1&2 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
25000 - 49999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Carbon Dioxide  
Chemical Info: CAS Num:124389 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 50000 - 74999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 6 ton tank near entrance road  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
50000 - 74999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: C -  
Tank Inside Building  
Location Description: 6000 gal, Unit 1 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 5  
Chemical Info: CAS Num:999005 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000000 - 9999999999 Quantity: 365 Container Type: R  
- Other  
Location Description: coal pile  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000000 - 9999999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 300 gal, west side of Unit #1 near Potable Water Storage  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Map ID  
Direction  
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MAP FINDINGS

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Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: Crane bay  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Ferric Chloride  
Chemical Info: CAS Num:7705080 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 150 Container Type: O - Tote Bin  
Location Description: Cooling Tower Chemical Building - 2 totes  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: De-energized transformer at plant entrance  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: D - Steel Drum  
Location Description: Boiler Unit #2 drums  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 6000 gal, Unit 2 main floor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported

Map ID  
Direction  
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MAP FINDINGS

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Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: Maintenance shop  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: R - Other  
Location Description: substation battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Ammonium hydroxide  
Chemical Info: CAS Num:1336216 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: C - Tank Inside Building  
Location Description: South side of plant  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Hydrogen Bromide  
Chemical Info: CAS Num:10035106 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 25000 - 49999 Quantity: 60 Container Type: O - Tote Bin  
Location Description: Unit 1&2 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 25000 - 49999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-Coal Handling Service Area  
Location Description: Coal Handling Service Area  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000-999999 Quantity: 365 Container Type: C - Tank



Map ID  
Direction  
Distance  
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MAP FINDINGS

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EDR ID Number  
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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Location Description: 6000 gal, Unit 2 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000-999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Carbon Dioxide  
Chemical Info: CAS Num:124389 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Location Description: 6 ton tank near entrance road  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Location Description: Unit #2 Compressor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: C -  
Tank Inside Building  
Location Description: 6000 gal, Unit 2 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Carbonate  
Chemical Info: CAS Num:497198 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit 1 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 7  
Chemical Info: CAS Num:999007 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: C -  
Tank Inside Building  
Location Description: Unit 2 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 300 gal, Unit #1 Fuel Oil Tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 300 gal, west side of Unit #1 near Potable Water Storage  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 300 gal near Guard Station  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: R - Other  
Location Description: substation battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Ammonium hydroxide  
Chemical Info: CAS Num:1336216 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: South side of plant  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

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Database(s)

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EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Chemical Name: Sulfur  
Chemical Info: CAS Num:7704349 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 05 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: 5,000 gal Unit 2 thickener tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 05

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 3  
Chemical Info: CAS Num:999003 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: 1500 gal, Unit 1 Circ Water pump  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: 1-hydroxyethylidene-1, 1-diphosphonic acid  
Chemical Info: CAS Num:2809214 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Tank Inside Building  
Location Description: Unit 1 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Other  
Location Description: Unit 1 battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: Coal handling area  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: Unit #2 Compressor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Hydroxide  
Chemical Info: CAS Num:1310732 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: E - Plasti  
Location Description: Reverse Osmosis Room - 330 gal tote  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: GE Betz PDC9325  
Chemical Info: CAS Num: Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: C - Tank  
Inside Building  
Location Description: Unit 1 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Carbonate  
Chemical Info: CAS Num:497198 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 1000000 - 9999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit 1 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
1000000 - 9999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 5  
Chemical Info: CAS Num:999005 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000000 - 999999999 Quantity: 365 Container Type: R  
- Other  
Location Description: coal pile  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000000 - 999999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit #3  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11

Map ID  
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EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Oil water separator  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Maintenance shop  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: R -  
Other  
Location Description: Unit 2 battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Hydroxide  
Chemical Info: CAS Num:1310732 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: E -  
Plastic or Non-Metal Drum  
Location Description: Reverse Osmosis Room - 330 gal tote  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 3  
Chemical Info: CAS Num:999003 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 25000 - 49999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 1500 gal, Unit 1 Circ Water pump  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
25000 - 49999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

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EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Location Description: Above-Ground Tank  
Unit #2 Fuel Oil Tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank

Location Description: 260 gal, Unit #1 Fuel Oil Tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank

Location Description: 300 gal, Unit #1 Compressor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank

Location Description: 300 gal near Guard Station  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: R -  
Other

Location Description: gas turbine battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Ammonium hydroxide  
Chemical Info: CAS Num:1336216 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank

Location Description: South side of plant

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Carbon Dioxide  
Chemical Info: CAS Num:124389 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 50000 - 74999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 6 ton tank near entrance road  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
50000 - 74999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Calcium Oxide  
Chemical Info: CAS Num:1305788 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 1000000 - 9999999 Quantity: 365 Container Type: H -  
Silo  
Location Description: Storage Silo 2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
1000000 - 9999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 3  
Chemical Info: CAS Num:999003 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 25000 - 49999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 1500 gal, Unit 2 Circ Water pump  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
25000 - 49999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit #2 Fuel Oil Tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: R -  
Other  
Location Description: Unit 1 battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

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Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfur  
Chemical Info: CAS Num:7704349 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: Unit 1 thickener tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 3  
Chemical Info: CAS Num:999003 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-1500 gal, Unit 2 Circ Water pump  
Location Description: 1500 gal, Unit 2 Circ Water pump  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 6000 gal, Unit 1 main floor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Tank Inside Building  
Location Description: Boiler Unit #2 EHC Reservoir  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfur  
Chemical Info: CAS Num:7704349 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000-999999 Quantity: 365 Container Type: A - Above-5,000 gal Unit 2 thickener tank  
Location Description: 5,000 gal Unit 2 thickener tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000-999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: R - Other  
Location Description: Unit 2 battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: R - Other  
Location Description: substation battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Carbon Dioxide  
Chemical Info: CAS Num:124389 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 30 ton tank S of Unit 2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit #1 Compressor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 6000 gal, Unit 2 main floor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Calcium Oxide  
Chemical Info: CAS Num:1305788 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 09 Quantity: 365 Container Type: Silo  
Location Description: Storage silo 2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
09

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

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Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Carbon Dioxide  
Chemical Info: CAS Num:124389 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: 6 ton tank near entrance road  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: GE Betz PDC9325  
Chemical Info: CAS Num: Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: C - Tank  
Inside Building  
Location Description: Unit 2 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: De-energized transformer at plant entrance  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 7  
Chemical Info: CAS Num:999007 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: C -  
Tank Inside Building  
Location Description: Unit 2 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Landfill - 2 tanks  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11

Map ID  
Direction  
Distance  
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MAP FINDINGS

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Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Oil water separator  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfur  
Chemical Info: CAS Num:7704349 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit 2 thickener tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Black Beauty Abrasive  
Chemical Info: CAS Num: Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 75000 - 99999 Quantity: 365 Container Type: R - Other  
Location Description: U2 absorber towers; Maintenance shop; SIMI Bldg; So side of U2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
75000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Coal Handling Service Area  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit #1 Compressor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

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Database(s)

EDR ID Number  
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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Location Description: 260 gal, Unit #1 Fuel Oil Tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank

Location Description: Oil water separator  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank

Location Description: Coal handling area  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank

Location Description: Crane bay  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfur  
Chemical Info: CAS Num:7704349 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A - Above-Ground Tank

Location Description: Unit 2 thickener tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000-999999 Quantity: 365 Container Type: C - Tank

Location Description: 6000 gal, Unit 1 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:

Map ID  
Direction  
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MAP FINDINGS

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

100000-999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Location Description: Oil water separator  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Location Description: Crane bay  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Location Description: 6000 gal, Unit 1 main floor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Carbon Dioxide  
Chemical Info: CAS Num:124389 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: A - Above-  
Location Description: 30 ton tank S of Unit 2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Calcium Oxide  
Chemical Info: CAS Num:1305788 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 1000000 - 9999999 Quantity: 365 Container Type: H -  
Silo  
Location Description: Storage Silo 2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
1000000 - 9999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: GE Betz PDC9325

Map ID  
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MAP FINDINGS

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EDR ID Number  
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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Chemical Info: CAS Num: Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: C - Tank  
Inside Building  
Location Description: Unit 1 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Electric transformers east of cooling tower #1  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: C -  
Tank Inside Building  
Location Description: 6000 gal, Unit 1 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 6000 gal, Unit 2 main floor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: R -  
Other  
Location Description: gas turbine battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfur  
Chemical Info: CAS Num:7704349 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -

Map ID  
Direction  
Distance  
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MAP FINDINGS

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**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Location Description: Above-Ground Tank  
Unit 1 thickener tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 05 Quantity: 365 Container Type: Tank Inside Building  
Location Description: 6000 gal, Unit 1 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
05

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sodium Hydroxide  
Chemical Info: CAS Num:1310732 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Plastic or Non-Metal  
Drum  
Location Description: Reverse Osmosis Room - 330 gal tote  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: 6000 gal, Unit 1 main floor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfur  
Chemical Info: CAS Num:7704349 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000-999999 Quantity: 365 Container Type: A -  
Above-  
Location Description: 15,000 gal Unit 1thickener tank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000-999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000-99999 Quantity: 365 Container Type: C - Tank I  
Location Description: Boiler Unit #1 EHC Reservoir  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10000-99999

Map ID  
Direction  
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MAP FINDINGS

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EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Carbon Dioxide  
Chemical Info: CAS Num:124389 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 6 ton tank near entrance road  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Mineral oil, light and heavy  
Chemical Info: CAS Num:8042475 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: C - Tank Inside Building  
Location Description: 6000 gal, Unit 2 boiler  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 3  
Chemical Info: CAS Num:999003 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 1500 gal, Unit 1 Circ Water pump  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 3  
Chemical Info: CAS Num:999003 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 99999 Quantity: 365 Container Type: A - Above-Ground Tank  
Location Description: 1500 gal, Unit 2 Circ Water pump  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 10000 - 99999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 7  
Chemical Info: CAS Num:999007 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 999999 Quantity: 365 Container Type: C - Tank Inside Building  
Location Description: Unit 2 scrubber  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt: 100000 - 999999

Facility Id: 11785  
SIC Code: Not reported



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Chemical Name: Other Chemical 5  
Chemical Info: CAS Num:999005 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10 Quantity: 365 Container Type: Other  
Location Description: coal pile  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
10

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Carbon Dioxide  
Chemical Info: CAS Num:124389 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: 30 ton tank S of Unit 2  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 04 Quantity: 365 Container Type: Above-Ground Tank  
Location Description: Landfill - 2 tanks  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
04

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: Unit #1 Compressor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Chlorine  
Chemical Info: CAS Num:7782505 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100 - 499 Quantity: 365 Container Type: L - Cylinder  
Location Description: 2x150-lb cylinder in chlorine bldg  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100 - 499

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: trixylenyl phosphate  
Chemical Info: CAS Num:25155231 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 10000 - 24999 Quantity: 365 Container Type: D - Steel  
Drum  
Location Description: Boiler Unit #2 drums  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

10000 - 24999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Fuel Oil # 2  
Chemical Info: CAS Num:68476302 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 500000 - 999999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 300 gal, Unit #2 Compressor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
500000 - 999999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Other Chemical 11  
Chemical Info: CAS Num:999011 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: A -  
Above-Ground Tank  
Location Description: 6000 gal, Unit 1 main floor  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: 11785  
SIC Code: Not reported  
Chemical Name: Sulfuric Acid  
Chemical Info: CAS Num:7664939 Chemical Id: Submission Code:  
More Chemical Info: Max Daily Amt: 100000 - 499999 Quantity: 365 Container Type: R -  
Other  
Location Description: Unit 2 battery bank  
Storage Info: Storage Loc: Storage Loc2: Storage Loc3: Storage Loc4 Max Daily Amt:  
100000 - 499999

Facility Id: Not reported  
Facility Id: 11785

Contact:  
Contact Type: Primary Emergency Contact  
Contact Name: JIM PECKENPAUGH  
Mailing Address1: PO Box 209  
Mailing Address2: Not reported  
Mailing Address3: Not reported  
Mailing City/State/Zip: Evansville, IN 47702  
Phone: 812-305-5427  
Type: Mobile

Contact Type: Secondary Emergency Contact  
Contact Name: WAYNE GAMES  
Mailing Address1: PO Box 209  
Mailing Address2: Not reported  
Mailing Address3: Not reported  
Mailing City/State/Zip: Evansville, IN 47702  
Phone: 812-305-4386  
Type: Mobile

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Contact Type: Secondary Emergency Contact  
Contact Name: WAYNE GAMES  
Mailing Address1: PO Box 209  
Mailing Address2: Not reported  
Mailing Address3: Not reported  
Mailing City/State/Zip: Evansville, IN 47702  
Phone: 812-491-5508  
Type: Work

Contact Type: Primary Emergency Contact  
Contact Name: JIM PECKENPAUGH  
Mailing Address1: PO Box 209  
Mailing Address2: Not reported  
Mailing Address3: Not reported  
Mailing City/State/Zip: Evansville, IN 47702  
Phone: 812-491-5516  
Type: Work

Contact Type: is primary emergency contact for  
Contact Name: JIM PECKENPAUGH  
Mailing Address1: PO Box 209  
Mailing Address2: Not reported  
Mailing Address3: Not reported  
Mailing City/State/Zip: Evansville, IN 47702  
Phone: 812-491-5516  
Type: Not reported

Contact Type: Business Owner  
Contact Name: SOUTHERN INDIANA GAS & ELECTRIC COMPANY  
Mailing Address1: PO Box 209  
Mailing Address2: ATTN: Environmental Affairs  
Mailing Address3: Not reported  
Mailing City/State/Zip: Evansville, IN 47702  
Phone: 800-227-1376  
Type: Work

Contact Type: is business owner for  
Contact Name: SOUTHERN INDIANA GAS & ELECTRIC COMPANY  
Mailing Address1: PO Box 209  
Mailing Address2: Not reported  
Mailing Address3: Not reported  
Mailing City/State/Zip: Evansville, IN 47702  
Phone: 800-227-1376  
Type: Not reported

Contact Type: is primary emergency contact for  
Contact Name: JIM PECKENPAUGH  
Mailing Address1: PO Box 209  
Mailing Address2: Not reported  
Mailing Address3: Not reported  
Mailing City/State/Zip: Evansville, IN 47702  
Phone: 812-305-5427  
Type: Not reported

Contact Type: is business owner for  
Contact Name: SOUTHERN INDIANA GAS & ELECTRIC COMPANY  
Mailing Address1: PO Box 209

Map ID  
 Direction  
 Distance  
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
 EPA ID Number

**SOUTHERN INDIANA GAS & ELECTRIC COMPANY AB BROWN GENERATING (Continued)**

**S107706550**

Mailing Address2: Not reported  
 Mailing Address3: Not reported  
 Mailing City/State/Zip: Evansville, IN 47702  
 Phone: 812-424-6411  
 Type: Not reported

**A3  
 Target  
 Property**

**SIGECO FILTER CAKE DISPOSAL RWS 3  
 8511 WELBORN RD  
 MOUNT VERNON, IN**

**IN RGA LF S116016026  
 N/A**

**Site 3 of 14 in cluster A**

**Actual:  
 453 ft.**

RGA LF:

|      |                                   |                 |
|------|-----------------------------------|-----------------|
| 2010 | SIGECO FILTER CAKE DISPOSAL RWS 3 | 8511 WELBORN RD |
| 2009 | SIGECO FILTER CAKE DISPOSAL RWS 3 | 8511 WELBORN RD |
| 2008 | SIGECO FILTER CAKE DISPOSAL RWS 3 | 8511 WELBORN RD |
| 2007 | SIGECO FILTER CAKE DISPOSAL RWS 3 | 8511 WELBORN RD |
| 2006 | SIGECO FILTER CAKE DISPOSAL RWS 3 | 8511 WELBORN RD |
| 2005 | SIGECO FILTER CAKE DISPOSAL RWS 3 | 8511 WELBORN RD |

**A4  
 Target  
 Property**

**VECTREN- NEW SEDIMENT BASIN, PERIMETER ACCESS BASI  
 8511 WELBORN RD  
 MOUNT VERNON, IN 47620**

**IN NPDES S121409611  
 N/A**

**Site 4 of 14 in cluster A**

**Actual:  
 453 ft.**

NPDES:

|                                  |              |
|----------------------------------|--------------|
| Permit Number:                   | INR10K394    |
| Primary Facility Sic Code:       | Not reported |
| Major/Minor:                     | Minor        |
| Primary Facility Sic Desc:       | Not reported |
| Facility Type Desc:              | Not reported |
| Permit Status Desc:              | Effective    |
| Issue Date:                      | 07/03/2015   |
| Expired Date:                    | 07/01/2020   |
| Effective Date:                  | 07/03/2015   |
| Terminated Date:                 | Not reported |
| DMR Cognizant Official:          | Not reported |
| DMR Cognizant Telephone:         | Not reported |
| Waterbody:                       | Not reported |
| Total Actual Average Flow (MGD): | Not reported |
| Total App. Design Flow (MGD):    | Not reported |
| FRS HUC Code:                    | Not reported |
| Latitude In Decimal Degrees:     | 37.9125      |
| Longitude In Decimal Degrees:    | -87.7167     |

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**A5**      **SIGECO - A.B. BROWN (SOUTHERN INDIANA GA**  
**Target**    **8511 WELLBORN ROAD**  
**Property**   **EVANSVILLE, IN 47620**

**EPA WATCH LIST**    **1015769560**  
**N/A**

**Site 5 of 14 in cluster A**

**Actual:**      EPA WATCH LIST:  
**453 ft.**

|              |                           |
|--------------|---------------------------|
| Facility ID: | 1812900010                |
| Program:     | CAA Facilities            |
| List date:   | September 2012 Watch List |
|              |                           |
| Facility ID: | 1812900010                |
| Program:     | CAA Facilities            |
| List date:   | August 2012 Watch List    |
|              |                           |
| Facility ID: | 1812900010                |
| Program:     | CAA Facilities            |
| List date:   | December 2012 Watch List  |
|              |                           |
| Facility ID: | 1812900010                |
| Program:     | CAA Facilities            |
| List date:   | November 2012 Watch List  |
|              |                           |
| Facility ID: | 1812900010                |
| Program:     | CAA Facilities            |
| List date:   | October 2012 Watch List   |

**A6**      **ABB DAM MODIFICATION ACTIVITIES**  
**Target**    **8511 WELBORN RD**  
**Property**   **MOUNT VERNON, IN 47620**

**IN NPDES**    **S121411056**  
**N/A**

**Site 6 of 14 in cluster A**

**Actual:**      NPDES:  
**453 ft.**

|                                  |                          |
|----------------------------------|--------------------------|
| Permit Number:                   | INR10L912                |
| Primary Facility Sic Code:       | Not reported             |
| Major/Minor:                     | Minor                    |
| Primary Facility Sic Desc:       | Not reported             |
| Facility Type Desc:              | Privately Owned Facility |
| Permit Status Desc:              | Effective                |
| Issue Date:                      | 05/06/2016               |
| Expired Date:                    | 05/05/2021               |
| Effective Date:                  | 05/06/2016               |
| Terminated Date:                 | Not reported             |
| DMR Cognizant Official:          | Not reported             |
| DMR Cognizant Telephone:         | Not reported             |
| Waterbody:                       | Not reported             |
| Total Actual Average Flow (MGD): | Not reported             |
| Total App. Design Flow (MGD):    | Not reported             |
| FRS HUC Code:                    | Not reported             |
| Latitude In Decimal Degrees:     | 37.9028                  |
| Longitude In Decimal Degrees:    | -87.7128                 |

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

A7  
Target  
Property

**SIGECO - A.B. BROWN (SOUTHERN INDIANA GA  
8511 WELBORN RD  
MOUNT VERNON, IN 47712**

**EPA WATCH LIST**

**1016461355  
N/A**

**Site 7 of 14 in cluster A**

**Actual:  
453 ft.**

EPA WATCH LIST:  
Facility ID: 1812900010  
Program: CAA Facilities  
List date: August 2013 Watch List  
  
Facility ID: 1812900010  
Program: CAA Facilities  
List date: July 2013 Watch List

A8  
Target  
Property

**SIGECO AB BROWN GENERATING STATION  
8511 WELBORN RD  
MOUNT VERNON, IN 47620**

**RCRA-CESQG  
IN MANIFEST**

**1001213841  
IND000685800**

**Site 8 of 14 in cluster A**

**Actual:  
453 ft.**

RCRA-CESQG:  
Date form received by agency: 03/01/2017  
Facility name: SIGECO AB BROWN GENERATING STATION  
Facility address: 8511 WELBORN RD  
MOUNT VERNON, IN 47620  
  
EPA ID: IND000685800  
Mailing address: N MAIN ST  
PO BOX 209  
EVANSVILLE, IN 47702  
  
Contact: BRANDIE RUCKER  
Contact address: PO BOX 209  
EVANSVILLE, IN 47702  
  
Contact country: US  
Contact telephone: 812-491-4787  
Contact email: BRUCKER@VECTREN.COM  
EPA Region: 05  
Land type: Private  
Classification: Conditionally Exempt Small Quantity Generator  
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

**Owner/Operator Summary:**

Owner/operator name: SO INDIANA GAS AND ELECTRIC COMPANY, INC  
Owner/operator address: NW RIVERSIDE DRIVE PO BOX 209 EVANSVILLE  
EVANSVILLE, IN 47702  
Owner/operator country: US

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SIGECO AB BROWN GENERATING STATION (Continued)**

**1001213841**

Owner/operator telephone: 812-491-4000  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Operator  
Owner/Op start date: 08/18/1980  
Owner/Op end date: Not reported

Owner/operator name: SO INDIANA GAS AND ELECTRIC COMPANY, INC  
Owner/operator address: NW RIVERSIDE DRIVE PO BOX 209 EVANSVILLE  
EVANSVILLE, IN 47702

Owner/operator country: US  
Owner/operator telephone: 812-491-4000  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Owner  
Owner/Op start date: 08/18/1980  
Owner/Op end date: Not reported

**Handler Activities Summary:**

U.S. importer of hazardous waste: No  
Mixed waste (haz. and radioactive): No  
Recycler of hazardous waste: No  
Transporter of hazardous waste: No  
Treater, storer or disposer of HW: No  
Underground injection activity: No  
On-site burner exemption: No  
Furnace exemption: No  
Used oil fuel burner: No  
Used oil processor: No  
User oil refiner: No  
Used oil fuel marketer to burner: No  
Used oil Specification marketer: No  
Used oil transfer facility: No  
Used oil transporter: No

. Waste code: D001  
. Waste name: IGNITABLE WASTE

. Waste code: D002  
. Waste name: CORROSIVE WASTE

. Waste code: D008  
. Waste name: LEAD

. Waste code: D035  
. Waste name: METHYL ETHYL KETONE

**Historical Generators:**

Date form received by agency: 02/26/2016  
Site name: SIGECO AB BROWN GENERATING STATION  
Classification: Conditionally Exempt Small Quantity Generator

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SIGECO AB BROWN GENERATING STATION (Continued)**

**1001213841**

- . Waste code: D001
- . Waste name: IGNITABLE WASTE
  
- . Waste code: D002
- . Waste name: CORROSIVE WASTE
  
- . Waste code: D008
- . Waste name: LEAD
  
- . Waste code: D035
- . Waste name: METHYL ETHYL KETONE

Date form received by agency: 03/02/2015

Site name: SIGECO AB BROWN GENERATING STATION  
Classification: Small Quantity Generator

- . Waste code: D001
- . Waste name: IGNITABLE WASTE
  
- . Waste code: D002
- . Waste name: CORROSIVE WASTE
  
- . Waste code: D008
- . Waste name: LEAD
  
- . Waste code: D035
- . Waste name: METHYL ETHYL KETONE

Date form received by agency: 08/29/2014

Site name: SIGECO AB BROWN GENERATING STATION  
Classification: Small Quantity Generator

- . Waste code: D001
- . Waste name: IGNITABLE WASTE
  
- . Waste code: D002
- . Waste name: CORROSIVE WASTE
  
- . Waste code: D008
- . Waste name: LEAD
  
- . Waste code: D035
- . Waste name: METHYL ETHYL KETONE

Date form received by agency: 02/21/2014

Site name: SIGECO AB BROWN GENERATING STATION  
Classification: Conditionally Exempt Small Quantity Generator

- . Waste code: D001
- . Waste name: IGNITABLE WASTE
  
- . Waste code: D002
- . Waste name: CORROSIVE WASTE
  
- . Waste code: D008
- . Waste name: LEAD



Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SIGECO AB BROWN GENERATING STATION (Continued)**

**1001213841**

. Waste code: D035  
. Waste name: METHYL ETHYL KETONE

Date form received by agency: 02/14/2014  
Site name: SIGECO AB BROWN GENERATING STATION  
Classification: Large Quantity Generator

. Waste code: D001  
. Waste name: IGNITABLE WASTE

. Waste code: D002  
. Waste name: CORROSIVE WASTE

. Waste code: D008  
. Waste name: LEAD

. Waste code: D035  
. Waste name: METHYL ETHYL KETONE

Date form received by agency: 01/23/2013  
Site name: SIGECO AB BROWN GEN STATION  
Classification: Conditionally Exempt Small Quantity Generator

. Waste code: D001  
. Waste name: IGNITABLE WASTE

Date form received by agency: 02/12/2008  
Site name: SIGECO AB BROWN GEN STA  
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 02/27/2006  
Site name: SIGECO AB BROWN GEN STA  
Classification: Small Quantity Generator

Date form received by agency: 02/08/2006  
Site name: SIGECO AB BROWN GEN STA  
Classification: Large Quantity Generator

Date form received by agency: 02/10/2005  
Site name: SIGECO AB BROWN GEN STA  
Classification: Small Quantity Generator

Date form received by agency: 01/07/2004  
Site name: SIGECO AB BROWN GEN STA  
Classification: Small Quantity Generator

Date form received by agency: 02/12/2003  
Site name: SIGECO AB BROWN GEN STA  
Classification: Small Quantity Generator

Date form received by agency: 08/19/1997  
Site name: SIGECO A B BROWN GEN STA  
Classification: Small Quantity Generator

. Waste code: D001  
. Waste name: IGNITABLE WASTE

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SIGECO AB BROWN GENERATING STATION (Continued)**

**1001213841**

. Waste code: D002  
. Waste name: CORROSIVE WASTE

. Waste code: D003  
. Waste name: REACTIVE WASTE

Violation Status: No violations found

Evaluation Action Summary:

Evaluation date: 05/31/2016  
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE  
Area of violation: Not reported  
Date achieved compliance: Not reported  
Evaluation lead agency: State

Evaluation date: 06/25/2002  
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE  
Area of violation: Not reported  
Date achieved compliance: Not reported  
Evaluation lead agency: State

IN MANIFEST:

Year: 2016  
EPA ID: IND000685800  
Tons Generated: 0.175  
Tons Shipped OffSite: Not reported  
Report Type: Annual  
Page No: 1  
Waste Desc: UN 1866, RESIN SOLUTION, 3, PG II  
UOM: Short Tons  
TSD EPAID: MID980991566  
Management code: 47620  
Management Desc: Not reported

Manifest Handler:

EPA Id #: IND000685800  
Generator Type: SQG  
Generator Status: Active Handler  
Transporter Type: Code no longer valid  
Transporter Status: Non Active  
TSD Type: Not reported  
TSD Status: Not reported  
Handler Mailing Address: PO BOX 209  
Handler Mailing City/State/Zip: EVANSVILLE, IN 47702  
Contact Name: LISA MESSINGER  
Contact Telephone: 812-491-4666  
Contact Type: Environmental Coordinator

Receiver Records:

Report Year: 2006.00000  
TSD EPA Id: IND093219012  
Page Number: 1446.00000  
Sub Page: 2.00000  
Generator EPA ID: IND000685800  
Waste Description: CORROSION RESISTING MORTAR FROM UNUSED PRODUCT, OUT OF DATE  
Quantity of Waste: 201  
Quantity Rec Report Yrly Tons: 0.1005

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SIGECO AB BROWN GENERATING STATION (Continued)**

**1001213841**

Unit of Measure: 1  
  
Report Year: 2006.00000  
TSD EPA Id: IND093219012  
Page Number: 1446.00000  
Sub Page: 3.00000  
Generator EPA ID: IND000685800  
Waste Description: SOLIDIFIED CORROSION RESISTIN MORTAR&SOL' FROM UNUSED PRODUCT  
Quantity of Waste: 253  
Quantity Rec Report Yrly Tons: 0.1265  
Unit of Measure: 1

Shipment Records:

Generator EPA Id: IND000685800  
Actual Generator Type: 2  
Waste Description Shipped: UNUSED, SOLIDIFIED CORROSION RESISTANT MORTAR (ACETONE, MEK)  
Shipped File Page Number: 1  
Number Of TSD Facilities: 1  
Waste Codes on Page Number: 1  
Waste Code: D001  
Tons Of Waste Shipped Year: 0.12650  
TSD Facility EPA ID: IND093219012  
TSD Name: HERITAGE ENVIRONMENTAL SERVICES LLC

Generator EPA Id: IND000685800  
Actual Generator Type: 2  
Waste Description Shipped: UNUSED, SOLIDIFIED CORROSION RESISTANT MORTAR (ACETONE, MEK)  
Shipped File Page Number: 1  
Number Of TSD Facilities: 1  
Waste Codes on Page Number: 2  
Waste Code: D035  
Tons Of Waste Shipped Year: 0.12650  
TSD Facility EPA ID: IND093219012  
TSD Name: HERITAGE ENVIRONMENTAL SERVICES LLC

Generator EPA Id: IND000685800  
Actual Generator Type: 2  
Waste Description Shipped: UNUSED. LIQUID CORROSION RESISTANT MORTAR (CORROSIVE, BASIC, INORGANIC)  
Shipped File Page Number: 2  
Number Of TSD Facilities: 1  
Waste Codes on Page Number: 1  
Waste Code: D002  
Tons Of Waste Shipped Year: 0.10050  
TSD Facility EPA ID: IND093219012  
TSD Name: HERITAGE ENVIRONMENTAL SERVICES LLC

Transporter Records:

Report Year: 2006  
Generator EPA ID: IND000685800  
Page Number of Report: 2  
TSD EPA Id: IND058484114  
Num Of Transporters Used: 1

Report Year: 2006  
Generator EPA ID: IND000685800

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SIGECO AB BROWN GENERATING STATION (Continued)**

**1001213841**

Page Number of Report: 1  
TSD EPA Id: IND058484114  
Num Of Transporters Used: 1

Year: 2016  
EPA ID: IND000685800  
Tons Generated: 0.34  
Tons Shipped OffSite: Not reported  
Report Type: Annual  
Page No: 8  
Waste Desc: UN 3265, WASTE CORROSIVE LIQUID ACIDIC, ORGANIC, N.O.S., 8 PG III  
UOM: Short Tons  
TSD EPAID: MID980991566  
Management code: 47620  
Management Desc: Not reported

Year: 2016  
EPA ID: IND000685800  
Tons Generated: 0.0055  
Tons Shipped OffSite: Not reported  
Report Type: Annual  
Page No: 7  
Waste Desc: UN 1873, WASTE PERCHLORIC ACID, 5.1, 8, PG I  
UOM: Short Tons  
TSD EPAID: MID980991566  
Management code: 47620  
Management Desc: Not reported

Year: 2016  
EPA ID: IND000685800  
Tons Generated: 0.0065  
Tons Shipped OffSite: Not reported  
Report Type: Annual  
Page No: 6  
Waste Desc: UN 3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., 8 PG III  
UOM: Short Tons  
TSD EPAID: MID980991566  
Management code: 47620  
Management Desc: Not reported

Year: 2016  
EPA ID: IND000685800  
Tons Generated: 0.038  
Tons Shipped OffSite: Not reported  
Report Type: Annual  
Page No: 5  
Waste Desc: UN 3109, WASTE ORGANIC PEROXIDE, TYPE F, 5.2, PG II  
UOM: Short Tons  
TSD EPAID: OHD980613541  
Management code: 47620  
Management Desc: Not reported

[Click this hyperlink](#) while viewing on your computer to access  
12 additional IN MANIFEST: record(s) in the EDR Site Report.

MAP FINDINGS

|           |      |             |               |
|-----------|------|-------------|---------------|
| Map ID    |      |             |               |
| Direction |      |             | EDR ID Number |
| Distance  |      |             | EPA ID Number |
| Elevation | Site | Database(s) |               |

---

|                 |  |  |             |                        |
|-----------------|--|--|-------------|------------------------|
| <b>A9</b>       | <b>SIGECO A B BROWN GENERATING STATION</b> |  | <b>TSCA</b> | <b>1016951163</b>      |
| <b>Target</b>   | <b>8511 WELBORN RD</b>                     |  | <b>TRIS</b> | <b>47620SGCBB8511W</b> |
| <b>Property</b> | <b>MOUNT VERNON, IN 47620</b>              |  |             |                        |

Site 9 of 14 in cluster A

**Actual:** 453 ft.      [Click this hyperlink](#) while viewing on your computer to access additional TSCA detail in the EDR Site Report.

TRIS:

[Click this hyperlink](#) while viewing on your computer to access 15 additional US\_TRIS: record(s) in the EDR Site Report.

---

|                 |   |  |                  |                   |
|-----------------|---|--|------------------|-------------------|
| <b>A10</b>      | <b>AB BROWN RWS III DISPOSAL FACILITY</b> |  | <b>IN RGA LF</b> | <b>S116015606</b> |
| <b>Target</b>   | <b>8511 WELBORN RD</b>                    |  |                  | <b>N/A</b>        |
| <b>Property</b> | <b>MOUNT VERNON, IN</b>                   |  |                  |                   |

Site 10 of 14 in cluster A

**Actual:** 453 ft.      RGA LF:

|      |                                    |                 |
|------|------------------------------------|-----------------|
| 2012 | AB BROWN RWS III DISPOSAL FACILITY | 8511 WELBORN RD |
| 2011 | AB BROWN RWS III DISPOSAL FACILITY | 8511 WELBORN RD |

---

|               |   |  |                  |                   |
|---------------|---|--|------------------|-------------------|
| <b>A11</b>    | <b>8511 WELBORN ROAD MOUNT VERNON, IN POSEY</b> |  | <b>IN SPILLS</b> | <b>S118360282</b> |
| <b>Target</b> | <b>POSEY (County), IN</b>                       |  |                  | <b>N/A</b>        |

Site 11 of 14 in cluster A

**Actual:** 453 ft.      **SPILL:**

|                        |                                     |
|------------------------|-------------------------------------|
| Facility ID:           | 57793                               |
| Incident Date:         | 09/15/2015                          |
| Report Date:           | 09/17/2015                          |
| Material:              | Not reported                        |
| Spill Source:          | Not reported                        |
| Recovered Amount:      | Not reported                        |
| Recovered Units:       | Not reported                        |
| Spilled Amount:        | Not reported                        |
| Spilled Units:         | Not reported                        |
| Contained:             | Not reported                        |
| Water Affected:        | Not reported                        |
| Spill Type:            | Emergency Response-Reportable Spill |
| Area Affected:         | Not reported                        |
| Fish Killed:           | Not reported                        |
| Water Supply Affected: | Not reported                        |
| Public Intake:         | Not reported                        |
| Incident Status:       | Assigned to Staff                   |

MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Elevation

Site

Database(s)

EDR ID Number  
 EPA ID Number

**A12**      **A.B. BROWN GENERATING STATION - STORM WATER MANAGE**  
**Target**    **8511 WELBORN RD**  
**Property**   **MOUNT VERNON, IN 47620**

**IN NPDES**    **S121412173**  
                   **N/A**

**Site 12 of 14 in cluster A**

**Actual:**      NPDES:  
**453 ft.**

|                                  |              |
|----------------------------------|--------------|
| Permit Number:                   | INR10N110    |
| Primary Facility Sic Code:       | Not reported |
| Major/Minor:                     | Minor        |
| Primary Facility Sic Desc:       | Not reported |
| Facility Type Desc:              | Not reported |
| Permit Status Desc:              | Effective    |
| Issue Date:                      | 12/06/2016   |
| Expired Date:                    | 12/05/2021   |
| Effective Date:                  | 12/06/2016   |
| Terminated Date:                 | Not reported |
| DMR Cognizant Official:          | Not reported |
| DMR Cognizant Telephone:         | Not reported |
| Waterbody:                       | Not reported |
| Total Actual Average Flow (MGD): | Not reported |
| Total App. Design Flow (MGD):    | Not reported |
| FRS HUC Code:                    | Not reported |
| Latitude In Decimal Degrees:     | 37.9055      |
| Longitude In Decimal Degrees:    | -87.7056     |

**A13**      **VECTREN - A.B. BROWN STATION BORROW AREA LOCATIONS**  
**Target**    **8511 WELBORN RD**  
**Property**   **MOUNT VERNON, IN 47620**

**IN NPDES**    **S121406760**  
                   **N/A**

**Site 13 of 14 in cluster A**

**Actual:**      NPDES:  
**453 ft.**

|                                  |              |
|----------------------------------|--------------|
| Permit Number:                   | INR10F189    |
| Primary Facility Sic Code:       | Not reported |
| Major/Minor:                     | Minor        |
| Primary Facility Sic Desc:       | Not reported |
| Facility Type Desc:              | Not reported |
| Permit Status Desc:              | Effective    |
| Issue Date:                      | 06/30/2017   |
| Expired Date:                    | 06/29/2022   |
| Effective Date:                  | 06/30/2017   |
| Terminated Date:                 | Not reported |
| DMR Cognizant Official:          | Not reported |
| DMR Cognizant Telephone:         | Not reported |
| Waterbody:                       | Not reported |
| Total Actual Average Flow (MGD): | Not reported |
| Total App. Design Flow (MGD):    | Not reported |
| FRS HUC Code:                    | Not reported |
| Latitude In Decimal Degrees:     | 37.91        |
| Longitude In Decimal Degrees:    | -87.7122     |

MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Elevation

Site

Database(s)

EDR ID Number  
 EPA ID Number

**A14**      **VECTREN - A B BROWN STATION NORTH BORROW AREA EXPA**  
**Target**    **8511 WELBORN RD**  
**Property**   **MOUNT VERNON, IN 47620**

**IN NPDES**    **S121408905**  
                   **N/A**

**Site 14 of 14 in cluster A**

**Actual:**  
**453 ft.**

NPDES:  
 Permit Number:                    INR10J646  
 Primary Facility Sic Code:        Not reported  
 Major/Minor:                      Minor  
 Primary Facility Sic Desc:        Not reported  
 Facility Type Desc:                Not reported  
 Permit Status Desc:                Effective  
 Issue Date:                         02/18/2015  
 Expired Date:                      02/17/2020  
 Effective Date:                     02/18/2015  
 Terminated Date:                 Not reported  
 DMR Cognizant Official:         Not reported  
 DMR Cognizant Telephone:       Not reported  
 Waterbody:                         Not reported  
 Total Actual Average Flow (MGD): Not reported  
 Total App. Design Flow (MGD): Not reported  
 FRS HUC Code:                     Not reported  
 Latitude In Decimal Degrees:    37.9183  
 Longitude In Decimal Degrees:   -87.7122

Count: 0 records.

ORPHAN SUMMARY

| <u>City</u>    | <u>EDR ID</u> | <u>Site Name</u> | <u>Site Address</u> | <u>Zip</u> | <u>Database(s)</u> |
|----------------|---------------|------------------|---------------------|------------|--------------------|
| NO SITES FOUND |               |                  |                     |            |                    |



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

## STANDARD ENVIRONMENTAL RECORDS

### ***Federal NPL site list***

#### **NPL: National Priority List**

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

|   |  |
|---|--|
| Date of Government Version: 12/11/2017  | Source: EPA                            |
| Date Data Arrived at EDR: 12/22/2017    | Telephone: N/A                         |
| Date Made Active in Reports: 01/05/2018 | Last EDR Contact: 02/06/2018           |
| Number of Days to Update: 14            | Next Scheduled EDR Contact: 04/16/2018 |
|   | Data Release Frequency: Quarterly      |

#### **NPL Site Boundaries**

##### **Sources:**

EPA's Environmental Photographic Interpretation Center (EPIC)  
Telephone: 202-564-7333

EPA Region 1  
Telephone 617-918-1143

EPA Region 6  
Telephone: 214-655-6659

EPA Region 3  
Telephone 215-814-5418

EPA Region 7  
Telephone: 913-551-7247

EPA Region 4  
Telephone 404-562-8033

EPA Region 8  
Telephone: 303-312-6774

EPA Region 5  
Telephone 312-886-6686

EPA Region 9  
Telephone: 415-947-4246

EPA Region 10  
Telephone 206-553-8665

#### **Proposed NPL: Proposed National Priority List Sites**

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

|   |  |
|---|--|
| Date of Government Version: 12/11/2017  | Source: EPA                            |
| Date Data Arrived at EDR: 12/22/2017    | Telephone: N/A                         |
| Date Made Active in Reports: 01/05/2018 | Last EDR Contact: 02/06/2018           |
| Number of Days to Update: 14            | Next Scheduled EDR Contact: 05/21/2018 |
|   | Data Release Frequency: Quarterly      |

#### **NPL LIENS: Federal Superfund Liens**

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

|   |   |
|---|---|
| Date of Government Version: 10/15/1991  | Source: EPA                               |
| Date Data Arrived at EDR: 02/02/1994    | Telephone: 202-564-4267                   |
| Date Made Active in Reports: 03/30/1994 | Last EDR Contact: 08/15/2011              |
| Number of Days to Update: 56            | Next Scheduled EDR Contact: 11/28/2011    |
|   | Data Release Frequency: No Update Planned |

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal Delisted NPL site list***

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

|   |  |
|---|--|
| Date of Government Version: 12/11/2017  | Source: EPA                            |
| Date Data Arrived at EDR: 12/22/2017    | Telephone: N/A                         |
| Date Made Active in Reports: 01/05/2018 | Last EDR Contact: 02/06/2018           |
| Number of Days to Update: 14            | Next Scheduled EDR Contact: 04/16/2018 |
|   | Data Release Frequency: Quarterly      |

## ***Federal CERCLIS list***

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

|   |   |
|---|---|
| Date of Government Version: 11/07/2016  | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 01/05/2017    | Telephone: 703-603-8704                 |
| Date Made Active in Reports: 04/07/2017 | Last EDR Contact: 01/05/2018            |
| Number of Days to Update: 92            | Next Scheduled EDR Contact: 04/16/2018  |
|   | Data Release Frequency: Varies          |

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

|   |  |
|---|--|
| Date of Government Version: 12/11/2017  | Source: EPA                            |
| Date Data Arrived at EDR: 12/22/2017    | Telephone: 800-424-9346                |
| Date Made Active in Reports: 01/12/2018 | Last EDR Contact: 02/06/2018           |
| Number of Days to Update: 21            | Next Scheduled EDR Contact: 04/30/2018 |
|   | Data Release Frequency: Quarterly      |

## ***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

|   |  |
|---|--|
| Date of Government Version: 12/11/2017  | Source: EPA                            |
| Date Data Arrived at EDR: 12/22/2017    | Telephone: 800-424-9346                |
| Date Made Active in Reports: 01/12/2018 | Last EDR Contact: 02/06/2018           |
| Number of Days to Update: 21            | Next Scheduled EDR Contact: 04/30/2018 |
|   | Data Release Frequency: Quarterly      |

## ***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

|   |  |
|---|--|
| Date of Government Version: 12/11/2017  | Source: EPA                            |
| Date Data Arrived at EDR: 12/26/2017    | Telephone: 800-424-9346                |
| Date Made Active in Reports: 02/09/2018 | Last EDR Contact: 01/19/2018           |
| Number of Days to Update: 45            | Next Scheduled EDR Contact: 04/09/2018 |
|   | Data Release Frequency: Quarterly      |

## ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

|   |   |
|---|---|
| Date of Government Version: 12/11/2017  | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 12/26/2017    | Telephone: 312-886-6186                 |
| Date Made Active in Reports: 02/09/2018 | Last EDR Contact: 01/19/2018            |
| Number of Days to Update: 45            | Next Scheduled EDR Contact: 04/09/2018  |
|   | Data Release Frequency: Quarterly       |

## ***Federal RCRA generators list***

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

|   |   |
|---|---|
| Date of Government Version: 12/11/2017  | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 12/26/2017    | Telephone: 312-886-6186                 |
| Date Made Active in Reports: 02/09/2018 | Last EDR Contact: 01/19/2018            |
| Number of Days to Update: 45            | Next Scheduled EDR Contact: 04/09/2018  |
|   | Data Release Frequency: Quarterly       |

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

|   |   |
|---|---|
| Date of Government Version: 12/11/2017  | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 12/26/2017    | Telephone: 312-886-6186                 |
| Date Made Active in Reports: 02/09/2018 | Last EDR Contact: 01/19/2018            |
| Number of Days to Update: 45            | Next Scheduled EDR Contact: 04/09/2018  |
|   | Data Release Frequency: Quarterly       |

## RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

|   |   |
|---|---|
| Date of Government Version: 12/11/2017  | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 12/26/2017    | Telephone: 312-886-6186                 |
| Date Made Active in Reports: 02/09/2018 | Last EDR Contact: 01/19/2018            |
| Number of Days to Update: 45            | Next Scheduled EDR Contact: 04/09/2018  |
|   | Data Release Frequency: Quarterly       |

## ***Federal institutional controls / engineering controls registries***

### LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

|   |  |
|---|--|
| Date of Government Version: 05/22/2017  | Source: Department of the Navy         |
| Date Data Arrived at EDR: 06/13/2017    | Telephone: 843-820-7326                |
| Date Made Active in Reports: 09/15/2017 | Last EDR Contact: 02/09/2018           |
| Number of Days to Update: 94            | Next Scheduled EDR Contact: 05/28/2018 |
|   | Data Release Frequency: Varies         |

### US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

|   |   |
|---|---|
| Date of Government Version: 11/13/2017  | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 11/27/2017    | Telephone: 703-603-0695                 |
| Date Made Active in Reports: 02/09/2018 | Last EDR Contact: 02/27/2018            |
| Number of Days to Update: 74            | Next Scheduled EDR Contact: 06/11/2018  |
|   | Data Release Frequency: Varies          |

### US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

|   |   |
|---|---|
| Date of Government Version: 11/13/2017  | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 11/27/2017    | Telephone: 703-603-0695                 |
| Date Made Active in Reports: 02/09/2018 | Last EDR Contact: 02/27/2018            |
| Number of Days to Update: 74            | Next Scheduled EDR Contact: 06/11/2018  |
|   | Data Release Frequency: Varies          |

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## **Federal ERNS list**

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/18/2017

Source: National Response Center, United States Coast Guard

Date Data Arrived at EDR: 09/21/2017

Telephone: 202-267-2180

Date Made Active in Reports: 10/13/2017

Last EDR Contact: 01/19/2018

Number of Days to Update: 22

Next Scheduled EDR Contact: 04/09/2018

Data Release Frequency: Quarterly

## **State- and tribal - equivalent CERCLIS**

IN SHWS: List of Hazardous Waste Response Sites Scored Using the Indiana Scoring Model

List of hazardous waste response sites scored utilizing the Indiana Scoring Model. The Indiana Scoring Model is a method of prioritizing, for state response actions, those hazardous substances response sites which are not on the National Priorities List. The ISM serves as the Commissioners management tool to address those sites which pose the most significant threat to human health and the environment in addition to assuring the departments resources are allocated accordingly.

Date of Government Version: 03/01/2007

Source: Department of Environmental Management

Date Data Arrived at EDR: 08/27/2007

Telephone: 317-308-3052

Date Made Active in Reports: 09/18/2007

Last EDR Contact: 02/22/2018

Number of Days to Update: 22

Next Scheduled EDR Contact: 06/11/2018

Data Release Frequency: No Update Planned

KY SHWS: State Leads List

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 01/04/2018

Source: Department of Environmental Protection

Date Data Arrived at EDR: 01/09/2018

Telephone: 502-564-6716

Date Made Active in Reports: 02/15/2018

Last EDR Contact: 02/26/2018

Number of Days to Update: 37

Next Scheduled EDR Contact: 06/11/2018

Data Release Frequency: Quarterly

## **State and tribal landfill and/or solid waste disposal site lists**

IN OPEN DUMPS: Open Dump Waste Sites

Open Dumps are sites that are not regulated and are illegal dump sites of solid waste, as defined by IAC 10-2-28 329 and IAC 10-2-128 of the Indiana Administrative Code.

Date of Government Version: 06/26/2009

Source: Department of Environmental Management

Date Data Arrived at EDR: 12/11/2013

Telephone: 317-232-8726

Date Made Active in Reports: 01/20/2014

Last EDR Contact: 12/08/2017

Number of Days to Update: 40

Next Scheduled EDR Contact: 03/19/2018

Data Release Frequency: Varies

IN SWF/LF: Permitted Solid Waste Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 10/31/2017

Source: Department of Environmental Management

Date Data Arrived at EDR: 12/14/2017

Telephone: 317-232-0066

Date Made Active in Reports: 01/23/2018

Last EDR Contact: 12/11/2017

Number of Days to Update: 40

Next Scheduled EDR Contact: 03/26/2018

Data Release Frequency: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## KY SWF/LF: Solid Waste Facilities List

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

|   |  |
|---|--|
| Date of Government Version: 11/27/2017  | Source: Department of Environmental Protection |
| Date Data Arrived at EDR: 11/28/2017    | Telephone: 502-564-6716                        |
| Date Made Active in Reports: 01/04/2018 | Last EDR Contact: 01/29/2018                   |
| Number of Days to Update: 37            | Next Scheduled EDR Contact: 05/14/2018         |
|   | Data Release Frequency: Semi-Annually          |

## State and tribal leaking storage tank lists

### IN LUST: Lust Leaking Underground Storage Tank List

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

|   |  |
|---|--|
| Date of Government Version: 11/06/2017  | Source: Department of Environmental Management |
| Date Data Arrived at EDR: 11/28/2017    | Telephone: 317-232-8900                        |
| Date Made Active in Reports: 12/05/2017 | Last EDR Contact: 11/28/2017                   |
| Number of Days to Update: 7             | Next Scheduled EDR Contact: 03/12/2018         |
|   | Data Release Frequency: Quarterly              |

### INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

|   |  |
|---|--|
| Date of Government Version: 04/26/2017  | Source: EPA, Region 5                  |
| Date Data Arrived at EDR: 07/27/2017    | Telephone: 312-886-7439                |
| Date Made Active in Reports: 10/13/2017 | Last EDR Contact: 01/23/2018           |
| Number of Days to Update: 78            | Next Scheduled EDR Contact: 05/07/2018 |
|   | Data Release Frequency: Varies         |

### INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

|   |  |
|---|--|
| Date of Government Version: 05/01/2017  | Source: EPA Region 8                   |
| Date Data Arrived at EDR: 07/27/2017    | Telephone: 303-312-6271                |
| Date Made Active in Reports: 10/13/2017 | Last EDR Contact: 01/23/2018           |
| Number of Days to Update: 78            | Next Scheduled EDR Contact: 05/07/2018 |
|   | Data Release Frequency: Varies         |

### INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

|   |  |
|---|--|
| Date of Government Version: 04/25/2017  | Source: EPA Region 10                  |
| Date Data Arrived at EDR: 11/07/2017    | Telephone: 206-553-2857                |
| Date Made Active in Reports: 12/08/2017 | Last EDR Contact: 01/23/2018           |
| Number of Days to Update: 31            | Next Scheduled EDR Contact: 05/07/2018 |
|   | Data Release Frequency: Varies         |

### INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

|   |   |
|---|---|
| Date of Government Version: 04/13/2017  | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 07/27/2017    | Telephone: 415-972-3372                 |
| Date Made Active in Reports: 10/13/2017 | Last EDR Contact: 01/23/2018            |
| Number of Days to Update: 78            | Next Scheduled EDR Contact: 05/07/2018  |
|   | Data Release Frequency: Varies          |

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Iowa, Kansas, and Nebraska

|   |  |
|---|--|
| Date of Government Version: 04/14/2017  | Source: EPA Region 7                   |
| Date Data Arrived at EDR: 07/27/2017    | Telephone: 913-551-7003                |
| Date Made Active in Reports: 10/06/2017 | Last EDR Contact: 01/23/2018           |
| Number of Days to Update: 71            | Next Scheduled EDR Contact: 05/07/2018 |
|   | Data Release Frequency: Varies         |

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in New Mexico and Oklahoma.

|   |  |
|---|--|
| Date of Government Version: 04/24/2017  | Source: EPA Region 6                   |
| Date Data Arrived at EDR: 07/27/2017    | Telephone: 214-665-6597                |
| Date Made Active in Reports: 10/06/2017 | Last EDR Contact: 01/23/2018           |
| Number of Days to Update: 71            | Next Scheduled EDR Contact: 05/07/2018 |
|   | Data Release Frequency: Varies         |

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Florida, Mississippi and North Carolina.

|   |  |
|---|--|
| Date of Government Version: 10/14/2016  | Source: EPA Region 4                   |
| Date Data Arrived at EDR: 01/27/2017    | Telephone: 404-562-8677                |
| Date Made Active in Reports: 05/05/2017 | Last EDR Contact: 01/19/2018           |
| Number of Days to Update: 98            | Next Scheduled EDR Contact: 05/07/2018 |
|   | Data Release Frequency: Semi-Annually  |

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land  
A listing of leaking underground storage tank locations on Indian Land.

|   |  |
|---|--|
| Date of Government Version: 04/14/2017  | Source: EPA Region 1                   |
| Date Data Arrived at EDR: 07/27/2017    | Telephone: 617-918-1313                |
| Date Made Active in Reports: 10/06/2017 | Last EDR Contact: 01/23/2018           |
| Number of Days to Update: 71            | Next Scheduled EDR Contact: 05/07/2018 |
|   | Data Release Frequency: Varies         |

## **State and tribal registered storage tank lists**

FEMA UST: Underground Storage Tank Listing  
A listing of all FEMA owned underground storage tanks.

|   |  |
|---|--|
| Date of Government Version: 05/15/2017  | Source: FEMA                           |
| Date Data Arrived at EDR: 05/30/2017    | Telephone: 202-646-5797                |
| Date Made Active in Reports: 10/13/2017 | Last EDR Contact: 01/09/2018           |
| Number of Days to Update: 136           | Next Scheduled EDR Contact: 04/23/2018 |
|   | Data Release Frequency: Varies         |

IN UST: Indiana Registered Underground Storage Tanks  
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

|   |  |
|---|--|
| Date of Government Version: 11/06/2017  | Source: Department of Environmental Management |
| Date Data Arrived at EDR: 11/28/2017    | Telephone: 317-308-3008                        |
| Date Made Active in Reports: 12/05/2017 | Last EDR Contact: 11/28/2017                   |
| Number of Days to Update: 7             | Next Scheduled EDR Contact: 03/12/2018         |
|   | Data Release Frequency: Quarterly              |

KY UST: Underground Storage Tank Database  
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/13/2017  
Date Data Arrived at EDR: 11/28/2017  
Date Made Active in Reports: 12/28/2017  
Number of Days to Update: 30

Source: Department of Environmental Protection  
Telephone: 502-564-5981  
Last EDR Contact: 11/28/2017  
Next Scheduled EDR Contact: 03/12/2018  
Data Release Frequency: Quarterly

## IN AST: Above Ground Storage Tanks

A listing of aboveground storage tank sites that reported under the emergency rule.

Date of Government Version: 01/25/2017  
Date Data Arrived at EDR: 05/16/2017  
Date Made Active in Reports: 09/06/2017  
Number of Days to Update: 113

Source: N/A  
Telephone: 317-232-2393  
Last EDR Contact: 11/02/2017  
Next Scheduled EDR Contact: 02/19/2018  
Data Release Frequency: N/A

## INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 05/02/2017  
Date Data Arrived at EDR: 07/27/2017  
Date Made Active in Reports: 10/06/2017  
Number of Days to Update: 71

Source: EPA Region 7  
Telephone: 913-551-7003  
Last EDR Contact: 01/23/2018  
Next Scheduled EDR Contact: 05/07/2018  
Data Release Frequency: Varies

## INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 05/01/2017  
Date Data Arrived at EDR: 07/27/2017  
Date Made Active in Reports: 10/13/2017  
Number of Days to Update: 78

Source: EPA Region 8  
Telephone: 303-312-6137  
Last EDR Contact: 01/23/2018  
Next Scheduled EDR Contact: 05/07/2018  
Data Release Frequency: Varies

## INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/24/2017  
Date Data Arrived at EDR: 07/27/2017  
Date Made Active in Reports: 12/08/2017  
Number of Days to Update: 134

Source: EPA Region 6  
Telephone: 214-665-7591  
Last EDR Contact: 01/23/2018  
Next Scheduled EDR Contact: 05/07/2018  
Data Release Frequency: Varies

## INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/26/2017  
Date Data Arrived at EDR: 07/27/2017  
Date Made Active in Reports: 10/06/2017  
Number of Days to Update: 71

Source: EPA Region 5  
Telephone: 312-886-6136  
Last EDR Contact: 01/23/2018  
Next Scheduled EDR Contact: 05/07/2018  
Data Release Frequency: Varies

## INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/14/2016  
Date Data Arrived at EDR: 01/27/2017  
Date Made Active in Reports: 05/05/2017  
Number of Days to Update: 98

Source: EPA Region 4  
Telephone: 404-562-9424  
Last EDR Contact: 01/19/2018  
Next Scheduled EDR Contact: 05/07/2018  
Data Release Frequency: Semi-Annually

## INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/14/2017  
Date Data Arrived at EDR: 07/27/2017  
Date Made Active in Reports: 10/06/2017  
Number of Days to Update: 71

Source: EPA, Region 1  
Telephone: 617-918-1313  
Last EDR Contact: 01/23/2018  
Next Scheduled EDR Contact: 05/07/2018  
Data Release Frequency: Varies

## INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/25/2017  
Date Data Arrived at EDR: 07/27/2017  
Date Made Active in Reports: 10/13/2017  
Number of Days to Update: 78

Source: EPA Region 10  
Telephone: 206-553-2857  
Last EDR Contact: 01/23/2018  
Next Scheduled EDR Contact: 05/07/2018  
Data Release Frequency: Varies

## INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/13/2017  
Date Data Arrived at EDR: 07/27/2017  
Date Made Active in Reports: 10/13/2017  
Number of Days to Update: 78

Source: EPA Region 9  
Telephone: 415-972-3368  
Last EDR Contact: 01/23/2018  
Next Scheduled EDR Contact: 05/07/2018  
Data Release Frequency: Varies

## ***State and tribal institutional control / engineering control registries***

### IN AUL: Sites with Restrictions

Activity and use limitations include both engineering controls and institutional controls. A listing of Comfort/Site Status Letter sites that have been issued with controls.

Date of Government Version: 11/06/2017  
Date Data Arrived at EDR: 11/27/2017  
Date Made Active in Reports: 12/01/2017  
Number of Days to Update: 4

Source: Department of Environmental Management  
Telephone: 317-232-8603  
Last EDR Contact: 02/26/2018  
Next Scheduled EDR Contact: 06/11/2018  
Data Release Frequency: Varies

## ***State and tribal voluntary cleanup sites***

### IN VCP: Voluntary Remediation Program Site List

A current list of Voluntary Remediation Program sites that are no longer confidential.

Date of Government Version: 08/22/2014  
Date Data Arrived at EDR: 08/22/2014  
Date Made Active in Reports: 09/12/2014  
Number of Days to Update: 21

Source: Department of Environmental Management  
Telephone: 317-234-0966  
Last EDR Contact: 01/05/2018  
Next Scheduled EDR Contact: 04/23/2018  
Data Release Frequency: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

|   |  |
|---|--|
| Date of Government Version: 03/20/2008  | Source: EPA, Region 7                  |
| Date Data Arrived at EDR: 04/22/2008    | Telephone: 913-551-7365                |
| Date Made Active in Reports: 05/19/2008 | Last EDR Contact: 04/20/2009           |
| Number of Days to Update: 27            | Next Scheduled EDR Contact: 07/20/2009 |
|   | Data Release Frequency: Varies         |

## INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

|   |  |
|---|--|
| Date of Government Version: 07/27/2015  | Source: EPA, Region 1                  |
| Date Data Arrived at EDR: 09/29/2015    | Telephone: 617-918-1102                |
| Date Made Active in Reports: 02/18/2016 | Last EDR Contact: 12/20/2017           |
| Number of Days to Update: 142           | Next Scheduled EDR Contact: 04/09/2018 |
|   | Data Release Frequency: Varies         |

## KY VCP: Voluntary Cleanup Program Sites

Sites that have been accepted into the Voluntary Cleanup Program or have submitted an application.

|   |  |
|---|--|
| Date of Government Version: 01/05/2018  | Source: Department of Environmental Protection |
| Date Data Arrived at EDR: 01/09/2018    | Telephone: 502-564-6716                        |
| Date Made Active in Reports: 02/20/2018 | Last EDR Contact: 02/26/2018                   |
| Number of Days to Update: 42            | Next Scheduled EDR Contact: 06/11/2018         |
|   | Data Release Frequency: Varies                 |

## **State and tribal Brownfields sites**

### IN BROWNFIELDS: Brownfields Site List

A brownfield site is an industrial or commercial property that is abandoned, inactive, or underutilized, on which expansion or redevelopment is complicated due to the actual or perceived environmental contamination.

|   |  |
|---|--|
| Date of Government Version: 11/15/2017  | Source: Department of Environmental Management |
| Date Data Arrived at EDR: 11/27/2017    | Telephone: 317-233-2570                        |
| Date Made Active in Reports: 12/01/2017 | Last EDR Contact: 02/26/2018                   |
| Number of Days to Update: 4             | Next Scheduled EDR Contact: 06/11/2018         |
|   | Data Release Frequency: Semi-Annually          |

### KY BROWNFIELDS: Kentucky Brownfield Inventory

The Kentucky Brownfield Program has created an inventory of brownfield sites in order to market the properties to those interested in brownfield redevelopment. The Kentucky Brownfield Program is working to promote the redevelopment of these sites by helping to remove barriers that prevent reuse, providing useful information to communities, developers and the public and encouraging a climate that fosters redevelopment of contaminated sites.

|   |   |
|---|---|
| Date of Government Version: 02/06/2018  | Source: Division of Compliance Assistance |
| Date Data Arrived at EDR: 02/07/2018    | Telephone: 502-564-0323                   |
| Date Made Active in Reports: 02/21/2018 | Last EDR Contact: 01/16/2018              |
| Number of Days to Update: 14            | Next Scheduled EDR Contact: 04/30/2018    |
|   | Data Release Frequency: Varies            |

## **ADDITIONAL ENVIRONMENTAL RECORDS**

### **Local Brownfield lists**

#### US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/19/2018  
Date Data Arrived at EDR: 01/19/2018  
Date Made Active in Reports: 02/09/2018  
Number of Days to Update: 21

Source: Environmental Protection Agency  
Telephone: 202-566-2777  
Last EDR Contact: 01/19/2018  
Next Scheduled EDR Contact: 04/02/2018  
Data Release Frequency: Semi-Annually

## **Local Lists of Landfill / Solid Waste Disposal Sites**

### **IN SWRCY: Recycling Facilities**

A listing of recycling facilities located in the state of Indiana.

Date of Government Version: 10/01/2017  
Date Data Arrived at EDR: 10/02/2017  
Date Made Active in Reports: 10/31/2017  
Number of Days to Update: 29

Source: Department of Environmental Management  
Telephone: 317-234-4050  
Last EDR Contact: 01/10/2018  
Next Scheduled EDR Contact: 04/30/2018  
Data Release Frequency: Varies

### **IN SWTIRE: Waste Tire Sites Listing**

This listing consists of Tire Sites - sites which contain tires - either for processing, for storage, or transport - as well as some illegal tire dumps, as defined by IC 13-11-2-251, IC 13-11-2-252, and IC 13-11-250.5 of the Indiana Code.

Date of Government Version: 08/04/2015  
Date Data Arrived at EDR: 09/09/2015  
Date Made Active in Reports: 10/07/2015  
Number of Days to Update: 28

Source: Department of Environmental Management  
Telephone: 317-232-8726  
Last EDR Contact: 12/08/2017  
Next Scheduled EDR Contact: 03/19/2018  
Data Release Frequency: Varies

### **KY SWRCY: Recycling Facilities**

A listing of recycling facilities located in the state of Kentucky.

Date of Government Version: 07/20/2017  
Date Data Arrived at EDR: 10/19/2017  
Date Made Active in Reports: 10/31/2017  
Number of Days to Update: 12

Source: Department of Environmental Protection  
Telephone: 502-564-6716  
Last EDR Contact: 01/19/2018  
Next Scheduled EDR Contact: 04/30/2018  
Data Release Frequency: Varies

### **INDIAN ODI: Report on the Status of Open Dumps on Indian Lands**

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998  
Date Data Arrived at EDR: 12/03/2007  
Date Made Active in Reports: 01/24/2008  
Number of Days to Update: 52

Source: Environmental Protection Agency  
Telephone: 703-308-8245  
Last EDR Contact: 01/30/2018  
Next Scheduled EDR Contact: 05/14/2018  
Data Release Frequency: Varies

### **ODI: Open Dump Inventory**

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985  
Date Data Arrived at EDR: 08/09/2004  
Date Made Active in Reports: 09/17/2004  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 800-424-9346  
Last EDR Contact: 06/09/2004  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### **DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations**

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/12/2009  
Date Data Arrived at EDR: 05/07/2009  
Date Made Active in Reports: 09/21/2009  
Number of Days to Update: 137

Source: EPA, Region 9  
Telephone: 415-947-4219  
Last EDR Contact: 01/22/2018  
Next Scheduled EDR Contact: 05/07/2018  
Data Release Frequency: No Update Planned

## IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014  
Date Data Arrived at EDR: 08/06/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 176

Source: Department of Health & Human Services, Indian Health Service  
Telephone: 301-443-1452  
Last EDR Contact: 02/02/2018  
Next Scheduled EDR Contact: 05/14/2018  
Data Release Frequency: Varies

## Local Lists of Hazardous waste / Contaminated Sites

### US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 01/19/2018  
Date Data Arrived at EDR: 01/24/2018  
Date Made Active in Reports: 02/09/2018  
Number of Days to Update: 16

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 02/27/2018  
Next Scheduled EDR Contact: 06/11/2018  
Data Release Frequency: No Update Planned

### IN CDL: Clandestine Drug Lab Listing

A listing of clandestine drug labs that have been cleaned up.

Date of Government Version: 08/29/2016  
Date Data Arrived at EDR: 10/05/2016  
Date Made Active in Reports: 10/20/2016  
Number of Days to Update: 15

Source: Department of Environmental Management  
Telephone: 317-416-5031  
Last EDR Contact: 01/05/2018  
Next Scheduled EDR Contact: 04/23/2018  
Data Release Frequency: Quarterly

### KY CDL: Clandestine Drug Lab Location Listing

Clandestine drug lab site locations.

Date of Government Version: 01/05/2018  
Date Data Arrived at EDR: 01/09/2018  
Date Made Active in Reports: 02/15/2018  
Number of Days to Update: 37

Source: Department of Environmental Protection  
Telephone: 502-564-6716  
Last EDR Contact: 02/26/2018  
Next Scheduled EDR Contact: 06/11/2018  
Data Release Frequency: Varies

### IN DEL SHWS: Deleted Commissioner's Bulletin Sites List

A listing of sites deleted/removed from the Commissioner's Bulletin List

Date of Government Version: 04/03/2008  
Date Data Arrived at EDR: 04/04/2008  
Date Made Active in Reports: 04/14/2008  
Number of Days to Update: 10

Source: Department of Environmental Management  
Telephone: 317-234-0347  
Last EDR Contact: 02/22/2018  
Next Scheduled EDR Contact: 06/11/2018  
Data Release Frequency: Varies

### US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/09/2018  
Date Data Arrived at EDR: 01/24/2018  
Date Made Active in Reports: 02/09/2018  
Number of Days to Update: 16

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 02/27/2018  
Next Scheduled EDR Contact: 06/11/2018  
Data Release Frequency: Quarterly

## **Local Land Records**

### **LIENS 2: CERCLA Lien Information**

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 12/11/2017  
Date Data Arrived at EDR: 12/22/2017  
Date Made Active in Reports: 01/12/2018  
Number of Days to Update: 21

Source: Environmental Protection Agency  
Telephone: 202-564-6023  
Last EDR Contact: 02/06/2018  
Next Scheduled EDR Contact: 05/21/2018  
Data Release Frequency: Semi-Annually

## **Records of Emergency Release Reports**

### **HMIRS: Hazardous Materials Information Reporting System**

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/21/2017  
Date Data Arrived at EDR: 09/21/2017  
Date Made Active in Reports: 10/13/2017  
Number of Days to Update: 22

Source: U.S. Department of Transportation  
Telephone: 202-366-4555  
Last EDR Contact: 01/19/2018  
Next Scheduled EDR Contact: 04/09/2018  
Data Release Frequency: Quarterly

### **IN SPILLS: Spills Incidents**

Oil, hazardous, or objectionable materials that may be released to soil and water.

Date of Government Version: 10/31/2017  
Date Data Arrived at EDR: 11/28/2017  
Date Made Active in Reports: 01/23/2018  
Number of Days to Update: 56

Source: Department of Environmental Management  
Telephone: 317-308-3038  
Last EDR Contact: 11/28/2017  
Next Scheduled EDR Contact: 03/12/2018  
Data Release Frequency: Quarterly

### **KY SPILLS: State spills**

A listing of spill and/or release related incidents.

Date of Government Version: 01/26/2018  
Date Data Arrived at EDR: 02/09/2018  
Date Made Active in Reports: 02/20/2018  
Number of Days to Update: 11

Source: DEP, Emergency Response  
Telephone: 502-564-2380  
Last EDR Contact: 01/16/2018  
Next Scheduled EDR Contact: 04/30/2018  
Data Release Frequency: Varies

### **IN SPILLS 90: SPILLS90 data from FirstSearch**

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 09/07/2012  
Date Data Arrived at EDR: 01/03/2013  
Date Made Active in Reports: 02/11/2013  
Number of Days to Update: 39

Source: FirstSearch  
Telephone: N/A  
Last EDR Contact: 01/03/2013  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## IN SPILLS 80: SPILLS80 data from FirstSearch

Spills 80 includes those spill and release records available from FirstSearch databases prior to 1990. Typically, they may include chemical, oil and/or hazardous substance spills recorded before 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 80.

|   |   |
|---|---|
| Date of Government Version: 09/11/2002  | Source: FirstSearch                       |
| Date Data Arrived at EDR: 01/03/2013    | Telephone: N/A                            |
| Date Made Active in Reports: 02/28/2013 | Last EDR Contact: 01/03/2013              |
| Number of Days to Update: 56            | Next Scheduled EDR Contact: N/A           |
|   | Data Release Frequency: No Update Planned |

## Other Ascertainable Records

### RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

|   |   |
|---|---|
| Date of Government Version: 12/11/2017  | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 12/26/2017    | Telephone: 312-886-6186                 |
| Date Made Active in Reports: 02/09/2018 | Last EDR Contact: 01/19/2018            |
| Number of Days to Update: 45            | Next Scheduled EDR Contact: 04/09/2018  |
|   | Data Release Frequency: Quarterly       |

### FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

|   |  |
|---|--|
| Date of Government Version: 01/31/2015  | Source: U.S. Army Corps of Engineers   |
| Date Data Arrived at EDR: 07/08/2015    | Telephone: 202-528-4285                |
| Date Made Active in Reports: 10/13/2015 | Last EDR Contact: 02/21/2018           |
| Number of Days to Update: 97            | Next Scheduled EDR Contact: 06/04/2018 |
|   | Data Release Frequency: Varies         |

### DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

|   |  |
|---|--|
| Date of Government Version: 12/31/2005  | Source: USGS                           |
| Date Data Arrived at EDR: 11/10/2006    | Telephone: 888-275-8747                |
| Date Made Active in Reports: 01/11/2007 | Last EDR Contact: 10/13/2017           |
| Number of Days to Update: 62            | Next Scheduled EDR Contact: 01/22/2018 |
|   | Data Release Frequency: Semi-Annually  |

### FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

|   |  |
|---|--|
| Date of Government Version: 12/31/2005  | Source: U.S. Geological Survey         |
| Date Data Arrived at EDR: 02/06/2006    | Telephone: 888-275-8747                |
| Date Made Active in Reports: 01/11/2007 | Last EDR Contact: 10/11/2017           |
| Number of Days to Update: 339           | Next Scheduled EDR Contact: 01/22/2018 |
|   | Data Release Frequency: N/A            |

### SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/01/2017  
Date Data Arrived at EDR: 02/03/2017  
Date Made Active in Reports: 04/07/2017  
Number of Days to Update: 63

Source: Environmental Protection Agency  
Telephone: 615-532-8599  
Last EDR Contact: 02/16/2018  
Next Scheduled EDR Contact: 05/28/2018  
Data Release Frequency: Varies

## US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 10/17/2017  
Date Data Arrived at EDR: 11/01/2017  
Date Made Active in Reports: 12/08/2017  
Number of Days to Update: 37

Source: Environmental Protection Agency  
Telephone: 202-566-1917  
Last EDR Contact: 01/19/2018  
Next Scheduled EDR Contact: 04/09/2018  
Data Release Frequency: Quarterly

## EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013  
Date Data Arrived at EDR: 03/21/2014  
Date Made Active in Reports: 06/17/2014  
Number of Days to Update: 88

Source: Environmental Protection Agency  
Telephone: 617-520-3000  
Last EDR Contact: 01/31/2018  
Next Scheduled EDR Contact: 05/21/2018  
Data Release Frequency: Quarterly

## 2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013  
Date Data Arrived at EDR: 03/03/2015  
Date Made Active in Reports: 03/09/2015  
Number of Days to Update: 6

Source: Environmental Protection Agency  
Telephone: 703-308-4044  
Last EDR Contact: 02/08/2018  
Next Scheduled EDR Contact: 05/21/2018  
Data Release Frequency: Varies

## TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 06/21/2017  
Date Made Active in Reports: 01/05/2018  
Number of Days to Update: 198

Source: EPA  
Telephone: 202-260-5521  
Last EDR Contact: 12/22/2017  
Next Scheduled EDR Contact: 04/02/2018  
Data Release Frequency: Every 4 Years

## TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 01/10/2018  
Date Made Active in Reports: 01/12/2018  
Number of Days to Update: 2

Source: EPA  
Telephone: 202-566-0250  
Last EDR Contact: 02/23/2018  
Next Scheduled EDR Contact: 06/04/2018  
Data Release Frequency: Annually

## SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009  
Date Data Arrived at EDR: 12/10/2010  
Date Made Active in Reports: 02/25/2011  
Number of Days to Update: 77

Source: EPA  
Telephone: 202-564-4203  
Last EDR Contact: 01/25/2018  
Next Scheduled EDR Contact: 05/07/2018  
Data Release Frequency: Annually

## ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 12/11/2017  
Date Data Arrived at EDR: 12/22/2017  
Date Made Active in Reports: 01/12/2018  
Number of Days to Update: 21

Source: EPA  
Telephone: 703-416-0223  
Last EDR Contact: 02/06/2018  
Next Scheduled EDR Contact: 03/19/2018  
Data Release Frequency: Annually

## RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/02/2017  
Date Data Arrived at EDR: 11/17/2017  
Date Made Active in Reports: 12/08/2017  
Number of Days to Update: 21

Source: Environmental Protection Agency  
Telephone: 202-564-8600  
Last EDR Contact: 01/19/2018  
Next Scheduled EDR Contact: 05/07/2018  
Data Release Frequency: Varies

## RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995  
Date Data Arrived at EDR: 07/03/1995  
Date Made Active in Reports: 08/07/1995  
Number of Days to Update: 35

Source: EPA  
Telephone: 202-564-4104  
Last EDR Contact: 06/02/2008  
Next Scheduled EDR Contact: 09/01/2008  
Data Release Frequency: No Update Planned



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

|   |  |
|---|--|
| Date of Government Version: 10/25/2013  | Source: EPA                            |
| Date Data Arrived at EDR: 10/17/2014    | Telephone: 202-564-6023                |
| Date Made Active in Reports: 10/20/2014 | Last EDR Contact: 02/06/2018           |
| Number of Days to Update: 3             | Next Scheduled EDR Contact: 05/21/2018 |
|   | Data Release Frequency: Quarterly      |

## PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

|   |  |
|---|--|
| Date of Government Version: 06/01/2017  | Source: EPA                            |
| Date Data Arrived at EDR: 06/09/2017    | Telephone: 202-566-0500                |
| Date Made Active in Reports: 10/13/2017 | Last EDR Contact: 01/12/2018           |
| Number of Days to Update: 126           | Next Scheduled EDR Contact: 04/23/2018 |
|   | Data Release Frequency: Annually       |

## ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

|   |   |
|---|---|
| Date of Government Version: 11/18/2016  | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 11/23/2016    | Telephone: 202-564-2501                 |
| Date Made Active in Reports: 02/10/2017 | Last EDR Contact: 01/09/2018            |
| Number of Days to Update: 79            | Next Scheduled EDR Contact: 04/23/2018  |
|   | Data Release Frequency: Quarterly       |

## FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

|   |   |
|---|---|
| Date of Government Version: 04/09/2009  | Source: EPA/Office of Prevention, Pesticides and Toxic Substances |
| Date Data Arrived at EDR: 04/16/2009    | Telephone: 202-566-1667   |
| Date Made Active in Reports: 05/11/2009 | Last EDR Contact: 08/18/2017                                      |
| Number of Days to Update: 25            | Next Scheduled EDR Contact: 12/04/2017                            |
|   | Data Release Frequency: Quarterly                                 |

## FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

|   |  |
|---|--|
| Date of Government Version: 04/09/2009  | Source: EPA                            |
| Date Data Arrived at EDR: 04/16/2009    | Telephone: 202-566-1667                |
| Date Made Active in Reports: 05/11/2009 | Last EDR Contact: 08/18/2017           |
| Number of Days to Update: 25            | Next Scheduled EDR Contact: 12/04/2017 |
|   | Data Release Frequency: Quarterly      |

## MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

|   |  |
|---|--|
| Date of Government Version: 08/30/2016  | Source: Nuclear Regulatory Commission  |
| Date Data Arrived at EDR: 09/08/2016    | Telephone: 301-415-7169                |
| Date Made Active in Reports: 10/21/2016 | Last EDR Contact: 01/19/2018           |
| Number of Days to Update: 43            | Next Scheduled EDR Contact: 05/21/2018 |
|   | Data Release Frequency: Quarterly      |

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

|   |  |
|---|--|
| Date of Government Version: 12/31/2005  | Source: Department of Energy           |
| Date Data Arrived at EDR: 08/07/2009    | Telephone: 202-586-8719                |
| Date Made Active in Reports: 10/22/2009 | Last EDR Contact: 12/05/2017           |
| Number of Days to Update: 76            | Next Scheduled EDR Contact: 03/19/2018 |
|   | Data Release Frequency: Varies         |

## COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

|   |   |
|---|---|
| Date of Government Version: 07/01/2014  | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 09/10/2014    | Telephone: N/A                          |
| Date Made Active in Reports: 10/20/2014 | Last EDR Contact: 12/08/2017            |
| Number of Days to Update: 40            | Next Scheduled EDR Contact: 03/19/2018  |
|   | Data Release Frequency: Varies          |

## PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

|   |   |
|---|---|
| Date of Government Version: 05/24/2017  | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 11/30/2017    | Telephone: 202-566-0517                 |
| Date Made Active in Reports: 12/15/2017 | Last EDR Contact: 01/26/2018            |
| Number of Days to Update: 15            | Next Scheduled EDR Contact: 05/07/2018  |
|   | Data Release Frequency: Varies          |

## RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

|   |   |
|---|---|
| Date of Government Version: 10/02/2017  | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 10/05/2017    | Telephone: 202-343-9775                 |
| Date Made Active in Reports: 10/13/2017 | Last EDR Contact: 01/04/2018            |
| Number of Days to Update: 8             | Next Scheduled EDR Contact: 04/16/2018  |
|   | Data Release Frequency: Quarterly       |

## HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

|   |   |
|---|---|
| Date of Government Version: 10/19/2006  | Source: Environmental Protection Agency   |
| Date Data Arrived at EDR: 03/01/2007    | Telephone: 202-564-2501                   |
| Date Made Active in Reports: 04/10/2007 | Last EDR Contact: 12/17/2007              |
| Number of Days to Update: 40            | Next Scheduled EDR Contact: 03/17/2008    |
|   | Data Release Frequency: No Update Planned |

## HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2008  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

## DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012  
Date Data Arrived at EDR: 08/07/2012  
Date Made Active in Reports: 09/18/2012  
Number of Days to Update: 42

Source: Department of Transportation, Office of Pipeline Safety  
Telephone: 202-366-4595  
Last EDR Contact: 01/19/2018  
Next Scheduled EDR Contact: 05/14/2018  
Data Release Frequency: Varies

## CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/30/2017  
Date Data Arrived at EDR: 11/10/2017  
Date Made Active in Reports: 01/12/2018  
Number of Days to Update: 63

Source: Department of Justice, Consent Decree Library  
Telephone: Varies  
Last EDR Contact: 01/04/2018  
Next Scheduled EDR Contact: 04/02/2018  
Data Release Frequency: Varies

## BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015  
Date Data Arrived at EDR: 02/22/2017  
Date Made Active in Reports: 09/28/2017  
Number of Days to Update: 218

Source: EPA/NTIS  
Telephone: 800-424-9346  
Last EDR Contact: 02/23/2018  
Next Scheduled EDR Contact: 06/04/2018  
Data Release Frequency: Biennially

## INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014  
Date Data Arrived at EDR: 07/14/2015  
Date Made Active in Reports: 01/10/2017  
Number of Days to Update: 546

Source: USGS  
Telephone: 202-208-3710  
Last EDR Contact: 01/09/2018  
Next Scheduled EDR Contact: 04/23/2018  
Data Release Frequency: Semi-Annually

## FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016  
Date Data Arrived at EDR: 12/27/2016  
Date Made Active in Reports: 02/17/2017  
Number of Days to Update: 52

Source: Department of Energy  
Telephone: 202-586-3559  
Last EDR Contact: 01/19/2018  
Next Scheduled EDR Contact: 05/21/2018  
Data Release Frequency: Varies

## UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/23/2017  
Date Data Arrived at EDR: 10/11/2017  
Date Made Active in Reports: 11/03/2017  
Number of Days to Update: 23

Source: Department of Energy  
Telephone: 505-845-0011  
Last EDR Contact: 02/23/2018  
Next Scheduled EDR Contact: 06/04/2018  
Data Release Frequency: Varies

## LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 10/10/2017  
Date Data Arrived at EDR: 11/03/2017  
Date Made Active in Reports: 12/15/2017  
Number of Days to Update: 42

Source: Environmental Protection Agency  
Telephone: 703-603-8787  
Last EDR Contact: 02/06/2018  
Next Scheduled EDR Contact: 05/21/2018  
Data Release Frequency: Varies

## LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001  
Date Data Arrived at EDR: 10/27/2010  
Date Made Active in Reports: 12/02/2010  
Number of Days to Update: 36

Source: American Journal of Public Health  
Telephone: 703-305-6451  
Last EDR Contact: 12/02/2009  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016  
Date Data Arrived at EDR: 10/26/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 100

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 09/26/2017  
Next Scheduled EDR Contact: 01/08/2018  
Data Release Frequency: Annually

## US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016  
Date Data Arrived at EDR: 10/26/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 100

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 09/26/2017  
Next Scheduled EDR Contact: 01/08/2018  
Data Release Frequency: Annually

## US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 10/29/2017  
Date Data Arrived at EDR: 11/28/2017  
Date Made Active in Reports: 01/12/2018  
Number of Days to Update: 45

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959  
Last EDR Contact: 11/28/2017  
Next Scheduled EDR Contact: 03/12/2018  
Data Release Frequency: Semi-Annually

## US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/05/2005  
Date Data Arrived at EDR: 02/29/2008  
Date Made Active in Reports: 04/18/2008  
Number of Days to Update: 49

Source: USGS  
Telephone: 703-648-7709  
Last EDR Contact: 12/01/2017  
Next Scheduled EDR Contact: 03/12/2018  
Data Release Frequency: Varies

## US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011  
Date Data Arrived at EDR: 06/08/2011  
Date Made Active in Reports: 09/13/2011  
Number of Days to Update: 97

Source: USGS  
Telephone: 703-648-7709  
Last EDR Contact: 12/01/2017  
Next Scheduled EDR Contact: 03/12/2018  
Data Release Frequency: Varies

## ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/25/2017  
Date Data Arrived at EDR: 09/26/2017  
Date Made Active in Reports: 10/20/2017  
Number of Days to Update: 24

Source: Department of Interior  
Telephone: 202-208-2609  
Last EDR Contact: 12/19/2017  
Next Scheduled EDR Contact: 03/26/2018  
Data Release Frequency: Quarterly

## FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/23/2017  
Date Data Arrived at EDR: 09/06/2017  
Date Made Active in Reports: 09/15/2017  
Number of Days to Update: 9

Source: EPA  
Telephone: (312) 353-2000  
Last EDR Contact: 02/23/2018  
Next Scheduled EDR Contact: 03/19/2018  
Data Release Frequency: Quarterly

## UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2016  
Date Data Arrived at EDR: 10/31/2017  
Date Made Active in Reports: 01/12/2018  
Number of Days to Update: 73

Source: Department of Defense  
Telephone: 703-704-1564  
Last EDR Contact: 01/02/2018  
Next Scheduled EDR Contact: 04/30/2018  
Data Release Frequency: Varies

## DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/27/2017  
Date Data Arrived at EDR: 11/21/2017  
Date Made Active in Reports: 01/12/2018  
Number of Days to Update: 52

Source: Environmental Protection Agency  
Telephone: 202-564-0527  
Last EDR Contact: 01/19/2018  
Next Scheduled EDR Contact: 03/12/2018  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

|   |   |
|---|---|
| Date of Government Version: 09/02/2017  | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 09/06/2017    | Telephone: 202-564-2280                 |
| Date Made Active in Reports: 10/20/2017 | Last EDR Contact: 01/19/2018            |
| Number of Days to Update: 44            | Next Scheduled EDR Contact: 03/19/2018  |
|   | Data Release Frequency: Quarterly       |

## FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

|   |  |
|---|--|
| Date of Government Version: 11/20/2017  | Source: EPA                            |
| Date Data Arrived at EDR: 11/20/2017    | Telephone: 800-385-6164                |
| Date Made Active in Reports: 01/12/2018 | Last EDR Contact: 02/21/2018           |
| Number of Days to Update: 53            | Next Scheduled EDR Contact: 06/04/2018 |
|   | Data Release Frequency: Quarterly      |

## IN AIRS: Permitted Sources & Emissions Listing

Current permitted sources and emissions inventory information.

|   |  |
|---|--|
| Date of Government Version: 08/03/2016  | Source: Department of Environmental Management |
| Date Data Arrived at EDR: 08/05/2016    | Telephone: 317-233-0185                        |
| Date Made Active in Reports: 08/23/2016 | Last EDR Contact: 01/03/2018                   |
| Number of Days to Update: 18            | Next Scheduled EDR Contact: 04/16/2018         |
|   | Data Release Frequency: Varies                 |

## KY AIRS: Permitted Airs Facility Listing

A listing of permitted Airs facilities.

|   |  |
|---|--|
| Date of Government Version: 01/02/2018  | Source: Department of Environmental Protection |
| Date Data Arrived at EDR: 01/05/2018    | Telephone: 502-573-3382                        |
| Date Made Active in Reports: 02/20/2018 | Last EDR Contact: 01/29/2018                   |
| Number of Days to Update: 46            | Next Scheduled EDR Contact: 05/14/2018         |
|   | Data Release Frequency: Semi-Annually          |

## IN BULK: Registered Bulk Fertilizer and Pesticide Storage Facilities

A listing of registered dry or liquid bulk fertilizer and pesticide storage facilities.

|   |   |
|---|---|
| Date of Government Version: 05/01/2017  | Source: Office of Indiana State Chemist |
| Date Data Arrived at EDR: 05/11/2017    | Telephone: 765-494-0579                 |
| Date Made Active in Reports: 09/07/2017 | Last EDR Contact: 12/26/2017            |
| Number of Days to Update: 119           | Next Scheduled EDR Contact: 04/16/2018  |
|   | Data Release Frequency: Varies          |

## IN CFO: Confined Feeding Operations

This dataset consists of Confined Feeding Operations - i.e. A swine, chicken, turkey, beef or dairy agri-business that has large enough numbers of animals that IDEM regulates for environmental concerns, as defined by IC 13-18-10 of the Indiana Code.

|   |  |
|---|--|
| Date of Government Version: 09/03/2013  | Source: Department of Environmental Management |
| Date Data Arrived at EDR: 12/11/2013    | Telephone: 317-232-8726                        |
| Date Made Active in Reports: 01/17/2014 | Last EDR Contact: 12/12/2014                   |
| Number of Days to Update: 37            | Next Scheduled EDR Contact: 03/23/2015         |
|   | Data Release Frequency: Varies                 |

## IN COAL ASH: Coal Ash Disposal Sites

A listing of coal ash disposal site locations.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/19/2016  
Date Data Arrived at EDR: 01/04/2017  
Date Made Active in Reports: 01/20/2017  
Number of Days to Update: 16

Source: Department of Environmental Management  
Telephone: 317-233-4624  
Last EDR Contact: 01/22/2018  
Next Scheduled EDR Contact: 03/26/2018  
Data Release Frequency: Varies

**KY COAL ASH: Coal Ash Disposal Sites**  
A listing of coal ash pond site locations.

Date of Government Version: 12/09/2013  
Date Data Arrived at EDR: 05/01/2014  
Date Made Active in Reports: 07/07/2014  
Number of Days to Update: 67

Source: Department of Environmental Protection  
Telephone: 502-564-6716  
Last EDR Contact: 01/29/2018  
Next Scheduled EDR Contact: 05/14/2018  
Data Release Frequency: Varies

**IN DRYCLEANERS: Drycleaner Facility Listing**  
A list of drycleaners involved in the Indiana 5-Star Environmental Recognition Program. It is a voluntary program that ranks participating drycleaners on a scale of one to five stars. The program recognizes those drycleaners willing to do more for the environment and worker safety than the rules require. These drycleaners are going above and beyond the rules to protect the environment, their employees and their neighbors and customers.

Date of Government Version: 06/27/2016  
Date Data Arrived at EDR: 06/28/2016  
Date Made Active in Reports: 08/15/2016  
Number of Days to Update: 48

Source: Department of Environmental Management  
Telephone: 800-988-7901  
Last EDR Contact: 12/08/2017  
Next Scheduled EDR Contact: 03/26/2018  
Data Release Frequency: Varies

**KY DRYCLEANERS: Drycleaner Listing**  
A listing of drycleaner facility locations.

Date of Government Version: 01/02/2018  
Date Data Arrived at EDR: 01/05/2018  
Date Made Active in Reports: 02/20/2018  
Number of Days to Update: 46

Source: Department of Environmental Protection  
Telephone: 502-573-3382  
Last EDR Contact: 01/29/2018  
Next Scheduled EDR Contact: 05/14/2018  
Data Release Frequency: Semi-Annually

**IN Financial Assurance 1: Financial Assurance Information Listing**  
Financial assurance information.

Date of Government Version: 01/11/2018  
Date Data Arrived at EDR: 01/11/2018  
Date Made Active in Reports: 02/23/2018  
Number of Days to Update: 43

Source: Department of Environmental Management  
Telephone: 317-233-1052  
Last EDR Contact: 01/10/2018  
Next Scheduled EDR Contact: 04/16/2018  
Data Release Frequency: Varies

**KY Financial Assurance 1: Financial Assurance Information Listing**  
A listing of financial assurance information.

Date of Government Version: 11/27/2017  
Date Data Arrived at EDR: 11/27/2017  
Date Made Active in Reports: 12/28/2017  
Number of Days to Update: 31

Source: Department of Environmental Protection  
Telephone: 502-564-6716  
Last EDR Contact: 01/29/2018  
Next Scheduled EDR Contact: 05/14/2018  
Data Release Frequency: Varies

**IN Financial Assurance 2: Financial Assurance Information Listing**  
Financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/11/2018  
Date Data Arrived at EDR: 01/11/2018  
Date Made Active in Reports: 02/23/2018  
Number of Days to Update: 43

Source: Department of Environmental Management  
Telephone: 317-233-1052  
Last EDR Contact: 01/10/2018  
Next Scheduled EDR Contact: 04/16/2018  
Data Release Frequency: Varies

## KY Financial Assurance 2: Financial Assurance Information Listing

Financial Assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/14/2014  
Date Data Arrived at EDR: 06/06/2014  
Date Made Active in Reports: 06/24/2014  
Number of Days to Update: 18

Source: Department of Environmental Protection  
Telephone: 502-564-5981  
Last EDR Contact: 01/29/2018  
Next Scheduled EDR Contact: 05/14/2018  
Data Release Frequency: Varies

## KY Financial Assurance 3: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/27/2017  
Date Data Arrived at EDR: 11/28/2017  
Date Made Active in Reports: 12/28/2017  
Number of Days to Update: 30

Source: Department of Environmental Protection  
Telephone: 502-564-6716  
Last EDR Contact: 01/29/2018  
Next Scheduled EDR Contact: 05/14/2018  
Data Release Frequency: Varies

## IND WASTE: Industrial Waste Sites Listing

The listing contains industrial waste site locations in Indiana, provided by personnel of Indiana Department of Environmental Management, Office of Land Quality.

Date of Government Version: 08/04/2015  
Date Data Arrived at EDR: 09/09/2015  
Date Made Active in Reports: 10/07/2015  
Number of Days to Update: 28

Source: Department of Environmental Management  
Telephone: 317-232-8726  
Last EDR Contact: 12/08/2017  
Next Scheduled EDR Contact: 03/19/2018  
Data Release Frequency: Quarterly

## IN MANIFEST: Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a treatment, storage, and disposal facility.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 10/03/2017  
Date Made Active in Reports: 12/05/2017  
Number of Days to Update: 63

Source: Department of Environmental Management  
Telephone: 317-233-4624  
Last EDR Contact: 01/03/2018  
Next Scheduled EDR Contact: 04/16/2018  
Data Release Frequency: Annually

## IN NPDES: NPDES Permit Listing

A listing of active NPDES Permit Section facility locations.

Date of Government Version: 10/29/2017  
Date Data Arrived at EDR: 02/06/2018  
Date Made Active in Reports: 02/27/2018  
Number of Days to Update: 21

Source: Department of Environmental Management  
Telephone: 317-233-0676  
Last EDR Contact: 01/05/2018  
Next Scheduled EDR Contact: 04/23/2018  
Data Release Frequency: Varies

## KY NPDES: Permitted Facility Listing

A listing of permitted wastewater facilities.



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/29/2017  
Date Data Arrived at EDR: 11/30/2017  
Date Made Active in Reports: 12/28/2017  
Number of Days to Update: 28

Source: Department of Environmental Protection  
Telephone: 502-564-3410  
Last EDR Contact: 02/05/2018  
Next Scheduled EDR Contact: 05/21/2018  
Data Release Frequency: Semi-Annually

## IN OISC: Office of Indiana State Chemist Database

Restricted use pesticide dealers and pesticide & fertilizer applicators.

Date of Government Version: 12/18/2017  
Date Data Arrived at EDR: 12/19/2017  
Date Made Active in Reports: 01/24/2018  
Number of Days to Update: 36

Source: Office of Indiana State Chemist & Seed  
Telephone: 765-494-1492  
Last EDR Contact: 12/19/2017  
Next Scheduled EDR Contact: 04/02/2018  
Data Release Frequency: Quarterly

## IN SCP: State Cleanup Program Sites

The goals for the State Cleanup Section are to mitigate risk to human health and the environment.

Date of Government Version: 08/29/2016  
Date Data Arrived at EDR: 08/29/2016  
Date Made Active in Reports: 10/20/2016  
Number of Days to Update: 52

Source: Department of Environmental Management  
Telephone: 317-233-0068  
Last EDR Contact: 01/05/2018  
Next Scheduled EDR Contact: 04/23/2018  
Data Release Frequency: Quarterly

## IN TIER 2: Tier 2 Facility Listing

A listing of facilities which store or manufacture hazardous materials that submit a chemical inventory report.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 07/25/2017  
Date Made Active in Reports: 09/07/2017  
Number of Days to Update: 44

Source: Department of Environmental Management  
Telephone: 317-233-0066  
Last EDR Contact: 02/22/2018  
Next Scheduled EDR Contact: 06/11/2018  
Data Release Frequency: Varies

## IN UIC: UIC Site Listing

A listing of class II well locations

Date of Government Version: 09/27/2017  
Date Data Arrived at EDR: 09/27/2017  
Date Made Active in Reports: 12/04/2017  
Number of Days to Update: 68

Source: Department of Natural Resources  
Telephone: 317-232-0045  
Last EDR Contact: 02/23/2018  
Next Scheduled EDR Contact: 06/11/2018  
Data Release Frequency: Varies

## KY UIC: UIC Information

A listing of wells identified as underground injection wells, in the Kentucky Oil & Gas Wells data base.

Date of Government Version: 12/15/2017  
Date Data Arrived at EDR: 01/17/2018  
Date Made Active in Reports: 02/20/2018  
Number of Days to Update: 34

Source: Kentucky Geological Survey  
Telephone: 859-323-0544  
Last EDR Contact: 01/17/2018  
Next Scheduled EDR Contact: 04/30/2018  
Data Release Frequency: Quarterly

## **EDR HIGH RISK HISTORICAL RECORDS**

### ***EDR Exclusive Records***

#### EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## EDR RECOVERED GOVERNMENT ARCHIVES

### *Exclusive Recovered Govt. Archives*

#### IN RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Management in Indiana.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 12/24/2013  
Number of Days to Update: 176

Source: Department of Environmental Management  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

#### KY RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/03/2014  
Number of Days to Update: 186

Source: Department of Environmental Protection  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## IN RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Management in Indiana.

|   |  |
|---|--|
| Date of Government Version: N/A         | Source: Department of Environmental Management |
| Date Data Arrived at EDR: 07/01/2013    | Telephone: N/A                                 |
| Date Made Active in Reports: 01/20/2014 | Last EDR Contact: 06/01/2012                   |
| Number of Days to Update: 203           | Next Scheduled EDR Contact: N/A                |
|   | Data Release Frequency: Varies                 |

## KY RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists.

|   |  |
|---|--|
| Date of Government Version: N/A         | Source: Department of Environmental Protection |
| Date Data Arrived at EDR: 07/01/2013    | Telephone: N/A                                 |
| Date Made Active in Reports: 01/15/2014 | Last EDR Contact: 06/01/2012                   |
| Number of Days to Update: 198           | Next Scheduled EDR Contact: N/A                |
|   | Data Release Frequency: Varies                 |

## IN RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Management in Indiana.

|   |  |
|---|--|
| Date of Government Version: N/A         | Source: Department of Environmental Management |
| Date Data Arrived at EDR: 07/01/2013    | Telephone: N/A                                 |
| Date Made Active in Reports: 12/24/2013 | Last EDR Contact: 06/01/2012                   |
| Number of Days to Update: 176           | Next Scheduled EDR Contact: N/A                |
|   | Data Release Frequency: Varies                 |

## OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

## CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

|   |   |
|---|---|
| Date of Government Version: 11/11/2017  | Source: Department of Energy & Environmental Protection |
| Date Data Arrived at EDR: 11/14/2017    | Telephone: 860-424-3375                                 |
| Date Made Active in Reports: 12/18/2017 | Last EDR Contact: 02/14/2018                            |
| Number of Days to Update: 34            | Next Scheduled EDR Contact: 05/28/2018                  |
|   | Data Release Frequency: No Update Planned               |

## NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

|   |  |
|---|--|
| Date of Government Version: 12/31/2016  | Source: Department of Environmental Protection |
| Date Data Arrived at EDR: 04/11/2017    | Telephone: N/A                                 |
| Date Made Active in Reports: 07/27/2017 | Last EDR Contact: 01/05/2018                   |
| Number of Days to Update: 107           | Next Scheduled EDR Contact: 04/23/2018         |
|   | Data Release Frequency: Annually               |

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 10/01/2017  
Date Data Arrived at EDR: 11/01/2017  
Date Made Active in Reports: 11/13/2017  
Number of Days to Update: 12

Source: Department of Environmental Conservation  
Telephone: 518-402-8651  
Last EDR Contact: 01/31/2018  
Next Scheduled EDR Contact: 05/14/2018  
Data Release Frequency: Quarterly

## PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 07/25/2017  
Date Made Active in Reports: 09/25/2017  
Number of Days to Update: 62

Source: Department of Environmental Protection  
Telephone: 717-783-8990  
Last EDR Contact: 01/16/2018  
Next Scheduled EDR Contact: 04/30/2018  
Data Release Frequency: Annually

## RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2013  
Date Data Arrived at EDR: 06/19/2015  
Date Made Active in Reports: 07/15/2015  
Number of Days to Update: 26

Source: Department of Environmental Management  
Telephone: 401-222-2797  
Last EDR Contact: 02/21/2018  
Next Scheduled EDR Contact: 06/04/2018  
Data Release Frequency: Annually

## VT MANIFEST: Hazardous Waste Manifest Data

Hazardous waste manifest information.

Date of Government Version: 01/12/2018  
Date Data Arrived at EDR: 01/19/2018  
Date Made Active in Reports: 02/13/2018  
Number of Days to Update: 25

Source: Department of Environmental Conservation  
Telephone: 802-241-3443  
Last EDR Contact: 01/12/2018  
Next Scheduled EDR Contact: 04/30/2018  
Data Release Frequency: Annually

## WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 04/13/2017  
Date Made Active in Reports: 07/14/2017  
Number of Days to Update: 92

Source: Department of Natural Resources  
Telephone: N/A  
Last EDR Contact: 12/11/2017  
Next Scheduled EDR Contact: 03/26/2018  
Data Release Frequency: Annually

## Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

## Electric Power Transmission Line Data

Source: PennWell Corporation

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**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

## Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

## Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

## Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

## Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

## Daycare Centers: Child Care Listing

Source: Family & Social Services Administration

Telephone: 317-232-4740

**Flood Zone Data:** This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

## State Wetlands Data: Wetland Inventory

Source: US Fish & Wildlife Service

Telephone: 703-358-2171

## Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

## **STREET AND ADDRESS INFORMATION**

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## **GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM**

### **TARGET PROPERTY ADDRESS**

A.B.BROWN GENERATING STATION  
8511 WELBORN RD  
EVANSVILLE, IN 47712

### **TARGET PROPERTY COORDINATES**

|                               |                            |
|-------------------------------|----------------------------|
| Latitude (North):             | 37.907776 - 37° 54' 27.99" |
| Longitude (West):             | 87.707951 - 87° 42' 28.62" |
| Universal Tranverse Mercator: | Zone 16                    |
| UTM X (Meters):               | 437764.1                   |
| UTM Y (Meters):               | 4195613.5                  |
| Elevation:                    | 453 ft. above sea level    |

### **USGS TOPOGRAPHIC MAP**

|                      |                           |
|----------------------|---------------------------|
| Target Property Map: | 5946019 WEST FRANKLIN, IN |
| Version Date:        | 2013                      |

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

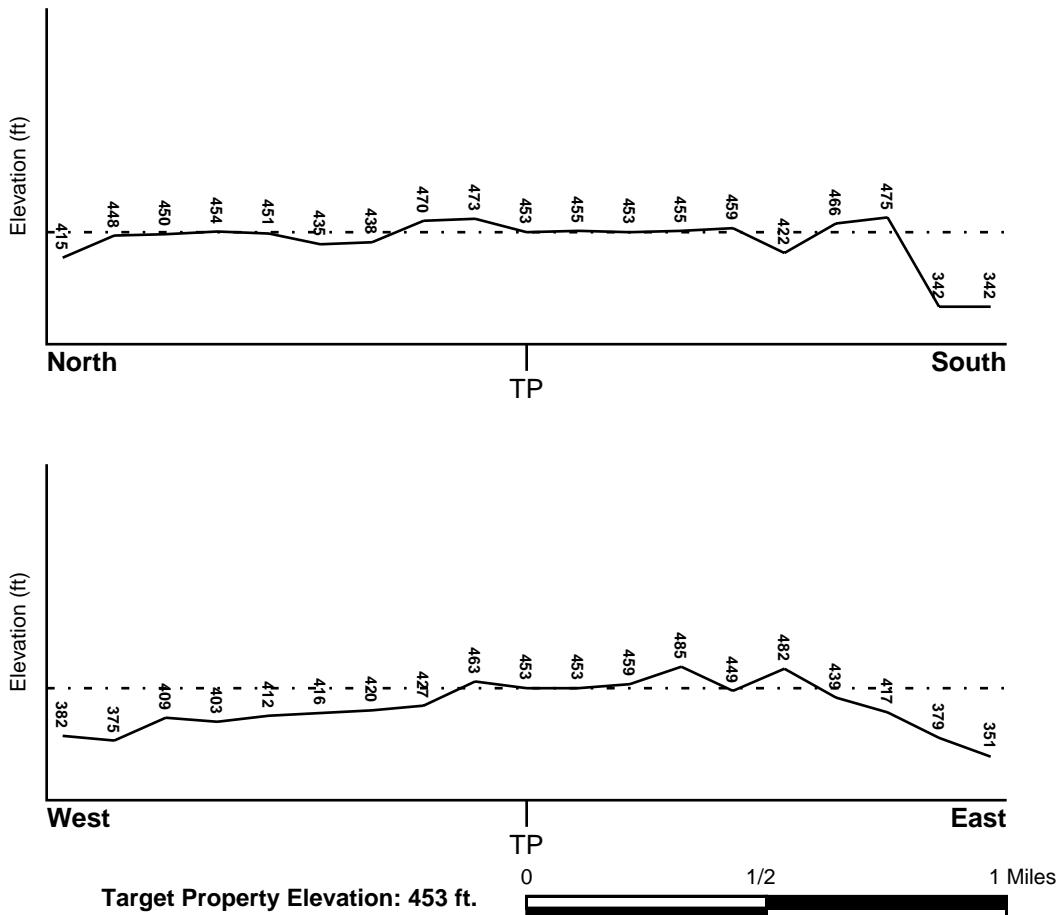
## TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General South

## SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

## **FEMA FLOOD ZONE**

|   |                         |
|---|-------------------------|
| <u>Flood Plain Panel at Target Property</u> | <u>FEMA Source Type</u> |
| 21101C0065E                                 | FEMA FIRM Flood data    |
| <u>Additional Panels in search area:</u>    | <u>FEMA Source Type</u> |
| Not Reported                                |                         |

## **NATIONAL WETLAND INVENTORY**

|                                    |  |
|------------------------------------|--|
| <u>NWI Quad at Target Property</u> | <u>NWI Electronic Data Coverage</u>            |
| WEST FRANKLIN                      | YES - refer to the Overview Map and Detail Map |

## HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## **AQUIFLOW®**

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

| <u>MAP ID</u> | <u>LOCATION FROM TP</u> | <u>GENERAL DIRECTION GROUNDWATER FLOW</u> |
|---------------|-------------------------|---|
| Not Reported  |                         |   |



# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

## GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

### **ROCK STRATIGRAPHIC UNIT**

Era: Paleozoic  
System: Pennsylvanian  
Series: Missourian Series  
Code: PP3 (*decoded above as Era, System & Series*)

### **GEOLOGIC AGE IDENTIFICATION**

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

## DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: ALFORD

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

| Soil Layer Information |           |           |                    |  |  |                           |                        |
|------------------------|-----------|-----------|--------------------|--|--|---------------------------|------------------------|
| Layer                  | Boundary  |           | Soil Texture Class | Classification   |  | Permeability Rate (in/hr) | Soil Reaction (pH)     |
|                        | Upper     | Lower     |                    | AASHTO Group   | Unified Soil   |                           |                        |
| 1                      | 0 inches  | 6 inches  | silt loam          | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.  | FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay Soils. | Max: 2.00<br>Min: 0.60    | Max: 7.30<br>Min: 4.50 |
| 2                      | 6 inches  | 72 inches | silty clay loam    | Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils. | FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay Soils. | Max: 2.00<br>Min: 0.60    | Max: 6.00<br>Min: 4.50 |
| 3                      | 72 inches | 80 inches | silt loam          | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.  | FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.            | Max: 2.00<br>Min: 0.60    | Max: 6.50<br>Min: 5.10 |

### OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: No Other Soil Types

Surficial Soil Types: No Other Soil Types

Shallow Soil Types: No Other Soil Types

Deeper Soil Types: No Other Soil Types

### LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

### WELL SEARCH DISTANCE INFORMATION

| <u>DATABASE</u>  | <u>SEARCH DISTANCE (miles)</u> |
|------------------|--------------------------------|
| Federal USGS     | 1.000                          |
| Federal FRDS PWS | Nearest PWS within 1 mile      |
| State Database   | 1.000                          |

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## FEDERAL USGS WELL INFORMATION

| MAP ID         | WELL ID | LOCATION<br>FROM TP |
|----------------|---------|---------------------|
| No Wells Found |         |                     |

## FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

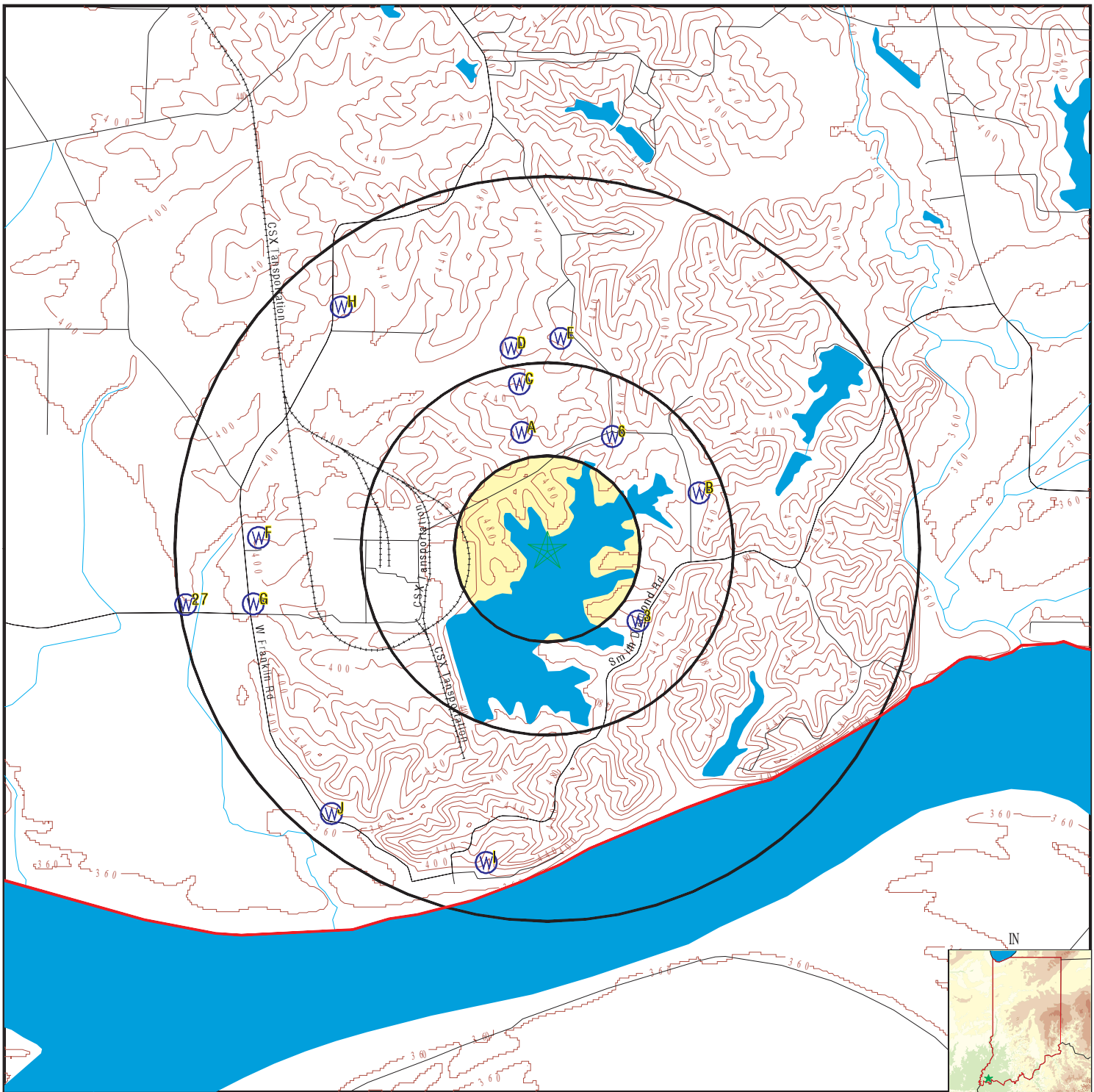
| MAP ID              | WELL ID | LOCATION<br>FROM TP |
|---------------------|---------|---------------------|
| No PWS System Found |         |                     |

Note: PWS System location is not always the same as well location.

## STATE DATABASE WELL INFORMATION

| MAP ID | WELL ID         | LOCATION<br>FROM TP  |
|--------|-----------------|----------------------|
| A1     | INLIT2000000152 | 1/4 - 1/2 Mile North |
| A2     | INDNR3000291930 | 1/4 - 1/2 Mile North |
| 3      | INDNR3000291753 | 1/4 - 1/2 Mile SE    |
| A4     | INDNR3000106930 | 1/4 - 1/2 Mile NNW   |
| A5     | INDNR3000115607 | 1/4 - 1/2 Mile NNW   |
| 6      | INDNR3000166084 | 1/4 - 1/2 Mile NNE   |
| B7     | INDNR3000290940 | 1/4 - 1/2 Mile ENE   |
| B8     | INLIT2000000147 | 1/4 - 1/2 Mile ENE   |
| C9     | INLIT2000000160 | 1/4 - 1/2 Mile North |
| C10    | INDNR3000291962 | 1/4 - 1/2 Mile North |
| D11    | INLIT2000000176 | 1/2 - 1 Mile North   |
| D12    | INDNR3000290938 | 1/2 - 1 Mile North   |
| E13    | INLIT2000000182 | 1/2 - 1 Mile North   |
| E14    | INDNR3000291545 | 1/2 - 1 Mile North   |
| F15    | INDNR3000306433 | 1/2 - 1 Mile West    |
| F16    | INLIT2000000141 | 1/2 - 1 Mile West    |
| F17    | INDNR3000291307 | 1/2 - 1 Mile West    |
| G18    | INLIT2000000131 | 1/2 - 1 Mile West    |
| G19    | INDNR3000291707 | 1/2 - 1 Mile West    |
| H20    | INLIT2000000188 | 1/2 - 1 Mile NW      |
| H21    | INDNR3000291759 | 1/2 - 1 Mile NW      |
| I22    | INDNR3000291965 | 1/2 - 1 Mile South   |
| I23    | INLIT2000000109 | 1/2 - 1 Mile South   |
| J24    | INDNR3000291976 | 1/2 - 1 Mile SW      |
| J25    | INLIT2000000115 | 1/2 - 1 Mile SW      |
| J26    | INDNR3000290743 | 1/2 - 1 Mile SW      |
| 27     | INDNR3000291314 | 1/2 - 1 Mile West    |

# PHYSICAL SETTING SOURCE MAP - 05203791.2r



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location

SITE NAME: A.B. Brown Generating Station  
ADDRESS: 8511 Welborn Rd  
Evansville IN 47712  
LAT/LONG: 37.907776 / 87.707951

CLIENT: Haley & Aldrich, Inc.  
CONTACT: Julia Scott  
INQUIRY #: 05203791.2r  
DATE: February 28, 2018 2:46 pm

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Elevation

Database      EDR ID Number

**A1**  
**North**  
**1/4 - 1/2 Mile**  
**Higher**

**IN WELLS      INLIT2000000152**

|                |                            |              |                      |
|----------------|----------------------------|--------------|----------------------|
| Area:          | 0                          |              |                      |
| Perimeter:     | 0                          |              |                      |
| Lith 2:        | 152                        | Lith 2 id:   | 152                  |
| Index :        | 96555                      |              |                      |
| Alias :        | 233541                     |              |                      |
| Z:             | 0                          |              |                      |
| Z dem f:       | 467                        |              |                      |
| Z dem m:       | 142.397268                 |              |                      |
| Lith depth:    | 48                         |              |                      |
| Depth:         | 48                         |              |                      |
| Static:        | 0                          |              |                      |
| Comp date:     | 1979-10-29 00:00:00        |              |                      |
| Owner addr:    | 20 NW 4TH ST EVANSVILLE IN |              |                      |
| Owner zip:     | 47741                      |              |                      |
| Driller na:    | Goebel Brothers            |              |                      |
| Entered by:    | SCF                        |              |                      |
| Record sou:    | IDNR                       |              |                      |
| Entry date:    | Not Reported               |              |                      |
| Project id:    | Not Reported               |              |                      |
| Location b:    | 36                         |              |                      |
| Brdepth:       | 27                         |              |                      |
| Site id:       | INLIT2000000152            |              |                      |
| Edr latitude:  | 37.9120160981975           |              |                      |
| Edr longitude: | -87.7089431575292          |              |                      |
| Edr x:         | -25613858.4046372          |              |                      |
| Edr y:         | 11912067.7865137           |              |                      |
| Edr ll src:    | GOV                        | Edr tblname: | IN_WELLS_LITH_201209 |
| Edr src:       | SW                         |              |                      |
| Latitude:      | 37.9120160981975           |              |                      |
| Longitude:     | -87.7089431575292          |              |                      |
| X coord:       | -25613858.4046372          |              |                      |
| Y coord:       | 11912067.7865137           |              |                      |

**A2**  
**North**  
**1/4 - 1/2 Mile**  
**Higher**

**IN WELLS      INDNR3000291930**

|             |        |
|-------------|--------|
| Objectid:   | 291930 |
| Dblrefno:   | 233541 |
| Dblaquelv:  | 0      |
| Dblbailerr: | 0      |
| Dblbedrock: | 27     |
| Dblpumprat: | 0      |
| Dblbedro 1: | 418    |
| Dblscreenl: | 0      |
| Dblstatic:  | 0      |
| Dbldepth:   | 48     |

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|              |   |             |                            |
|--------------|---|-------------|----------------------------|
| Strowner:    | SIGECO  | Strownerad: | 20 NW 4TH ST EVANSVILLE IN |
| Strrng1:     | 12W   | Strtwn1:    | 7S                         |
| Dblsec1:     | 13  |             |                            |
| Dblutmy:     | 4196085   |             |                            |
| Dblutmx:     | 437680  |             |                            |
| Intreserve:  | 0   | Strreserve: | Not Reported               |
| Strcounty:   | POSEY   | Strtopo:    | WEST FRANKLIN, IN-KY       |
| Dblbailerd:  | 0   |             |                            |
| Dblbailerh:  | 0   |             |                            |
| Dblcasingd:  | 4   |             |                            |
| Dblcasingl:  | 50  |             |                            |
| Strcasingm:  | Not Reported  |             |                            |
| Dblgroutt:   | 0   |             |                            |
| Strgroutm:   | Not Reported  |             |                            |
| Dbllinerdi:  | 0   |             |                            |
| Dbllinerto:  | 0   |             |                            |
| Dblpumpset:  | 0   |             |                            |
| Dblpumpdw:   | 0   |             |                            |
| Dblpumphou:  | 0   |             |                            |
| Dblscreend:  | 0   |             |                            |
| Dtmcompdat:  | 29-OCT-79   |             |                            |
| Dblgrndelet: | 445   |             |                            |
| Strpumptyp:  | Not Reported  | Strownertx: | Not Reported               |
| Utmx nad83:  | 437679.86774  |             |                            |
| Utmx nad83:  | 4196295.16676   |             |                            |
| Loc type:    | Actual Location   |             |                            |
| Report:      | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233541&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233541&amp;_from=SUMMARY&amp;_action=Details</a> |             |                            |
| Site id:     | INDNR3000291930   |             |                            |

**3**  
**SE**  
**1/4 - 1/2 Mile**  
**Higher**

**IN WELLS      INDNR3000291753**

|             |          |             |                      |
|-------------|----------|-------------|----------------------|
| Objectid:   | 291753   |             |                      |
| Dblrefno:   | 233562   |             |                      |
| Dblaquely:  | 0        |             |                      |
| Dblbailer:  | 3        |             |                      |
| Dblbedrock: | 25       |             |                      |
| Dblpumprat: | 0        |             |                      |
| Dblbedro 1: | 455      |             |                      |
| Dblscreenl: | 0        |             |                      |
| Dblstatic:  | 50       |             |                      |
| Dbldepth:   | 83       |             |                      |
| Strowner:   | BOB CARR | Strownerad: | R2 EVANSVILLE        |
| Strrng1:    | 12W      | Strtwn1:    | 7S                   |
| Dblsec1:    | 24       |             |                      |
| Dblutmy:    | 4195294  |             |                      |
| Dblutmx:    | 438156   |             |                      |
| Intreserve: | 0        | Strreserve: | Not Reported         |
| Strcounty:  | POSEY    | Strtopo:    | WEST FRANKLIN, IN-KY |
| Dblbailerd: | 0        |             |                      |
| Dblbailerh: | 0        |             |                      |
| Dblcasingd: | 6.63     |             |                      |

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|             |   |             |              |
|-------------|---|-------------|--------------|
| Dblcasingl: | 27  |             |              |
| Strcasingm: | Not Reported  |             |              |
| Dblgroutt:  | 0   |             |              |
| Strgroutm:  | Not Reported  |             |              |
| Dbllinerdi: | 0   |             |              |
| Dbllinerto: | 0   |             |              |
| Dblpumpset: | 0   |             |              |
| Dblpumpdw:  | 0   |             |              |
| Dblpumphou: | 0   |             |              |
| Dblscreend: | 0   |             |              |
| Dtmcompdat: | 07-MAY-65   |             |              |
| Dblgrndele: | 480   |             |              |
| Strpumptyp: | Not Reported  | Strownertx: | Not Reported |
| Utmx nad83: | 438155.883825   |             |              |
| Utmy nad83: | 4195504.15023   |             |              |
| Loc type:   | Actual Location   |             |              |
| Report:     | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233562&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233562&amp;_from=SUMMARY&amp;_action=Details</a> |             |              |
| Site id:    | INDNR3000291753   |             |              |

**A4  
NNW  
1/4 - 1/2 Mile  
Higher**

**IN WELLS      INDNR3000106930**

|             |                             |             |                          |
|-------------|-----------------------------|-------------|--------------------------|
| Objectid:   | 106930                      |             |                          |
| Dblrefno:   | 233571                      |             |                          |
| Dblaquelv:  | 0                           |             |                          |
| Dblbailerr: | 0                           |             |                          |
| Dblbedrock: | 0                           |             |                          |
| Dblpumprat: | 0                           |             |                          |
| Dblbedro 1: | 458                         |             |                          |
| Dblscreenl: | 10                          |             |                          |
| Dblstatic:  | 0                           |             |                          |
| Dbldepth:   | 50                          |             |                          |
| Strowner:   | SOUTHERN IND GAS & ELECTRIC | Strownerad: | PO BOX 569 EVANSVILLE IN |
| Strrng1:    | 12W                         | Strtwn1:    | 7S                       |
| Dblsec1:    | 13                          |             |                          |
| Dblutmy:    | 4196143                     |             |                          |
| Dblutm:     | 437637                      |             |                          |
| Intreserve: | 0                           | Strreserve: | Not Reported             |
| Strcounty:  | POSEY                       | Strtopo:    | WEST FRANKLIN, IN-KY     |
| Dblbailerd: | 0                           |             |                          |
| Dblbailerh: | 0                           |             |                          |
| Dblcasingd: | 4                           |             |                          |
| Dblcasingl: | 42                          |             |                          |
| Strcasingm: | Not Reported                |             |                          |
| Dblgroutt:  | 0                           |             |                          |
| Strgroutm:  | Not Reported                |             |                          |
| Dbllinerdi: | 0                           |             |                          |
| Dbllinerto: | 0                           |             |                          |
| Dblpumpset: | 0                           |             |                          |
| Dblpumpdw:  | 0                           |             |                          |
| Dblpumphou: | 0                           |             |                          |
| Dblscreend: | 4                           |             |                          |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dtmcompdat: 09-OCT-81  
 Dblgrndelet: 476  
 Strpumpstyp: Not Reported Strownertx: Not Reported  
 Utmx nad83: 437636.866462  
 Utmy nad83: 4196353.16798  
 Loc type: Estimated Location/TRS\_quarter sections\_county  
 Report: [https://secure.in.gov/apps/dnr/water/dnr\\_waterwell?refNo=233571&\\_from=SUMMARY&\\_action=Details](https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233571&_from=SUMMARY&_action=Details)  
 Site id: INDNR3000106930

**A5**  
**NNW**  
**1/4 - 1/2 Mile**  
**Higher**

**IN WELLS**      **INDNR3000115607**

|               |   |             |  |
|---------------|---|-------------|--|
| Objectid:     | 115607  |             |  |
| Dblrefno:     | 264265  |             |  |
| Dblaquelv:    | 0   |             |  |
| Dblbailerr:   | 0   |             |  |
| Dblbedrock:   | 0   |             |  |
| Dblpumprat:   | 0   |             |  |
| Dblbedro 1:   | 0   |             |  |
| Dblscreenl:   | 0   |             |  |
| Dblstatic:    | 0   |             |  |
| Dbldepth:     | 0   |             |  |
| Strowner:     | SOUTHERN INDIANA GAS/ELECTRICO  | Strownerad: | 8511 WELBORN RD, MT VERNON IN/ AB BROWN STATIO |
| Strrng1:      | 12W   | Strtrwn1:   | 7S   |
| Dblsec1:      | 13  |             |  |
| Dblutmy:      | 4196143   |             |  |
| Dblutmx:      | 437637  |             |  |
| Intreserve:   | 0   | Strreserve: | Not Reported                                   |
| Strcounty:    | POSEY   | Strtopo:    | WEST FRANKLIN, IN-KY                           |
| Dblbailerd:   | 0   |             |  |
| Dblbailerh:   | 0   |             |  |
| Dblcasingd:   | 0   |             |  |
| Dblcasingl:   | 0   |             |  |
| Strcasingm:   | Not Reported  |             |  |
| Dblgroutt:    | 0   |             |  |
| Strgroutm:    | Not Reported  |             |  |
| Dbllinerdi:   | 0   |             |  |
| Dbllinerto:   | 0   |             |  |
| Dblpumpset:   | 0   |             |  |
| Dblpumpdw:    | 0   |             |  |
| Dblpumphou:   | 0   |             |  |
| Dblscreenend: | 0   |             |  |
| Dtmcompdat:   | 06-DEC-89   |             |  |
| Dblgrndelet:  | 0   |             |  |
| Strpumpstyp:  | Not Reported  | Strownertx: | (812)985-6225                                  |
| Utmx nad83:   | 437636.866462   |             |  |
| Utmy nad83:   | 4196353.16798   |             |  |
| Loc type:     | Estimated Location/TRS_quarter sections_county  |             |  |
| Report:       | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=264265&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=264265&amp;_from=SUMMARY&amp;_action=Details</a> |             |  |
| Site id:      | INDNR3000115607   |             |  |

**6**  
**NNE**  
**1/4 - 1/2 Mile**  
**Higher**

**IN WELLS**      **INDNR3000166084**



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|              |   |             |                                  |
|--------------|---|-------------|----------------------------------|
| Objectid:    | 166084  |             |                                  |
| Dblrefno:    | 327916  |             |                                  |
| Dblaquelv:   | 0   |             |                                  |
| Dblbailerr:  | 0   |             |                                  |
| Dblbedrock:  | 0   |             |                                  |
| Dblpumprat:  | 0   |             |                                  |
| Dblbedro 1:  | 0   |             |                                  |
| Dblscreenl:  | 10  |             |                                  |
| Dblstatic:   | 7   |             |                                  |
| Dbldepth:    | 30  |             |                                  |
| Strownerad:  | SIGECO  | Strownerad: | 8511 WELLBORN RD., MT VERNON, IN |
| Strrng1:     | 12W   | Strtrwn1:   | 7S                               |
| Dblsec1:     | 13  |             |                                  |
| Dblutmy:     | 4196092   |             |                                  |
| Dblutmx:     | 438051  |             |                                  |
| Intreserve:  | 0   | Strreserve: | Not Reported                     |
| Strcounty:   | POSEY   | Strtopo:    | WEST FRANKLIN, IN-KY             |
| Dblbailerd:  | 0   |             |                                  |
| Dblbailerh:  | 0   |             |                                  |
| Dblcasingd:  | 4   |             |                                  |
| Dblcasingl:  | 20  |             |                                  |
| Strcasingm:  | VPC   |             |                                  |
| Dblgroutt:   | 18  |             |                                  |
| Strgroutm:   | BENT  |             |                                  |
| Dbllinerdi:  | 0   |             |                                  |
| Dbllinerto:  | 0   |             |                                  |
| Dblpumpset:  | 0   |             |                                  |
| Dblpumpdw:   | 0   |             |                                  |
| Dblpumphou:  | 0   |             |                                  |
| Dblscreend:  | 4   |             |                                  |
| Dtmcompdat:  | 18-MAY-99   |             |                                  |
| Dblgrndelev: | 0   |             |                                  |
| Strpumptyp:  | Not Reported  | Strownertx: | (812)465-5434                    |
| Utmx nad83:  | 438050.872667   |             |                                  |
| Utmy nad83:  | 4196302.16719   |             |                                  |
| Loc type:    | Estimated Location/Geocoding addresses  |             |                                  |
| Report:      | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=327916&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=327916&amp;_from=SUMMARY&amp;_action=Details</a> |             |                                  |
| Site id:     | INDNR3000166084   |             |                                  |

**B7  
ENE  
1/4 - 1/2 Mile  
Higher**

**IN WELLS      INDNR3000290940**

|             |        |
|-------------|--------|
| Objectid:   | 290940 |
| Dblrefno:   | 233561 |
| Dblaquelv:  | 0      |
| Dblbailerr: | 0      |
| Dblbedrock: | 18     |
| Dblpumprat: | 0      |
| Dblbedro 1: | 452    |
| Dblscreenl: | 0      |
| Dblstatic:  | 0      |
| Dbldepth:   | 78     |

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|              |   |             |                      |
|--------------|---|-------------|----------------------|
| Strowner:    | JEFF SCOTT  | Strownerad: | Not Reported         |
| Strrng1:     | 12W   | Strtwn1:    | 7S                   |
| Dblsec1:     | 13  |             |                      |
| Dblutmy:     | 4195848   |             |                      |
| Dblutmx:     | 438423  |             |                      |
| Intreserve:  | 0   | Strreserve: | Not Reported         |
| Strcounty:   | POSEY   | Strtopo:    | WEST FRANKLIN, IN-KY |
| Dblbailerd:  | 0   |             |                      |
| Dblbailerh:  | 0   |             |                      |
| Dblcasingd:  | 5.5   |             |                      |
| Dblcasingl:  | 50  |             |                      |
| Strcasingm:  | Not Reported  |             |                      |
| Dblgroutt:   | 0   |             |                      |
| Strgroutm:   | Not Reported  |             |                      |
| Dbllinerdi:  | 0   |             |                      |
| Dbllinerto:  | 0   |             |                      |
| Dblpumpset:  | 0   |             |                      |
| Dblpumpdw:   | 0   |             |                      |
| Dblpumphou:  | 0   |             |                      |
| Dblscreend:  | 0   |             |                      |
| Dtmcompdat:  | 10-AUG-79   |             |                      |
| Dblgrndelet: | 470   |             |                      |
| Strpumptyp:  | Not Reported  | Strownertx: | Not Reported         |
| Utmx nad83:  | 438422.880691   |             |                      |
| Utm y nad83: | 4196058.16228   |             |                      |
| Loc type:    | Actual Location   |             |                      |
| Report:      | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233561&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233561&amp;_from=SUMMARY&amp;_action=Details</a> |             |                      |
| Site id:     | INDNR3000290940   |             |                      |

**B8  
ENE  
1/4 - 1/2 Mile  
Higher**

**IN WELLS      INLIT2000000147**

|             |                     |            |     |
|-------------|---------------------|------------|-----|
| Area:       | 0                   |            |     |
| Perimeter:  | 0                   |            |     |
| Lith 2:     | 147                 | Lith 2 id: | 147 |
| Index :     | 96565               |            |     |
| Alias :     | 233561              |            |     |
| Z:          | 470                 |            |     |
| Z dem f:    | 486                 |            |     |
| Z dem m:    | 148.143199          |            |     |
| Lith depth: | 78                  |            |     |
| Depth:      | 78                  |            |     |
| Static:     | 0                   |            |     |
| Comp date:  | 1979-08-10 00:00:00 |            |     |
| Owner addr: | Not Reported        |            |     |
| Owner zip:  | 0                   |            |     |
| Driller na: | Goebel Brothers     |            |     |
| Entered by: | RR                  |            |     |
| Record sou: | IDNR                |            |     |
| Entry date: | Not Reported        |            |     |
| Project id: | Not Reported        |            |     |
| Location b: | 78                  |            |     |

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|                |                   |              |                      |
|----------------|-------------------|--------------|----------------------|
| Brdepth:       | 48                |              |                      |
| Site id:       | INLIT2000000147   |              |                      |
| Edr latitude:  | 37.9099307776073  |              |                      |
| Edr longitude: | -87.7004709595389 |              |                      |
| Edr x:         | -25611384.2478194 |              |                      |
| Edr y:         | 11911299.1388152  |              |                      |
| Edr ll src:    | GOV               | Edr tblname: | IN_WELLS_LITH_201209 |
| Edr src:       | SW                |              |                      |
| Latitude:      | 37.9099307776073  |              |                      |
| Longitude:     | -87.7004709595389 |              |                      |
| X coord:       | -25611384.2478194 |              |                      |
| Y coord:       | 11911299.1388152  |              |                      |

**C9**  
**North**  
**1/4 - 1/2 Mile**  
**Lower**

**IN WELLS      INLIT2000000160**

|                |                               |              |                      |
|----------------|-------------------------------|--------------|----------------------|
| Area:          | 0                             |              |                      |
| Perimeter:     | 0                             |              |                      |
| Lith 2:        | 160                           | Lith 2 id:   | 160                  |
| Index :        | 96558                         |              |                      |
| Alias :        | 233551                        |              |                      |
| Z:             | 0                             |              |                      |
| Z dem f:       | 443                           |              |                      |
| Z dem m:       | 135.017358                    |              |                      |
| Lith depth:    | 48                            |              |                      |
| Depth:         | 48                            |              |                      |
| Static:        | 0                             |              |                      |
| Comp date:     | 1979-10-30 00:00:00           |              |                      |
| Owner addr:    | 20 NW FOUTH ST. EVANSVILLE IN |              |                      |
| Owner zip:     | 47741                         |              |                      |
| Driller na:    | Goebel Brothers               |              |                      |
| Entered by:    | RR                            |              |                      |
| Record sou:    | IDNR                          |              |                      |
| Entry date:    | Not Reported                  |              |                      |
| Project id:    | Not Reported                  |              |                      |
| Location b:    | 36                            |              |                      |
| Brdepth:       | 36                            |              |                      |
| Site id:       | INLIT2000000160               |              |                      |
| Edr latitude:  | 37.9141770039021              |              |                      |
| Edr longitude: | -87.7093051886962             |              |                      |
| Edr x:         | -25613964.1294894             |              |                      |
| Edr y:         | 11912864.3180111              |              |                      |
| Edr ll src:    | GOV                           | Edr tblname: | IN_WELLS_LITH_201209 |
| Edr src:       | SW                            |              |                      |
| Latitude:      | 37.9141770039021              |              |                      |
| Longitude:     | -87.7093051886962             |              |                      |
| X coord:       | -25613964.1294894             |              |                      |
| Y coord:       | 11912864.3180111              |              |                      |

**C10**  
**North**  
**1/4 - 1/2 Mile**  
**Lower**

**IN WELLS      INDNR3000291962**

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|              |   |             |                                 |
|--------------|---|-------------|---------------------------------|
| Objectid:    | 291962  |             |                                 |
| Dblrefno:    | 233551  |             |                                 |
| Dblaquelv:   | 0   |             |                                 |
| Dblbailerr:  | 6   |             |                                 |
| Dblbedrock:  | 36  |             |                                 |
| Dblpumprat:  | 0   |             |                                 |
| Dblbedro 1:  | 445   |             |                                 |
| Dblscreenl:  | 0   |             |                                 |
| Dblstatic:   | 0   |             |                                 |
| Dbldepth:    | 48  |             |                                 |
| Strownerad:  | SIGECO  | Strownerad: | 20 NW FOUTH ST., EVANSVILLE, IN |
| Strrng1:     | 12W   | Strtrwn1:   | 7S                              |
| Dblsec1:     | 13  |             |                                 |
| Dblutmy:     | 4196325   |             |                                 |
| Dblutmx:     | 437650  |             |                                 |
| Intreserve:  | 0   | Strreserve: | Not Reported                    |
| Strcounty:   | POSEY   | Strtopo:    | WEST FRANKLIN, IN-KY            |
| Dblbailerd:  | 0   |             |                                 |
| Dblbailerh:  | 0   |             |                                 |
| Dblcasingd:  | 4   |             |                                 |
| Dblcasingl:  | 50  |             |                                 |
| Strcasingm:  | Not Reported  |             |                                 |
| Dblgroutt:   | 0   |             |                                 |
| Strgroutm:   | Not Reported  |             |                                 |
| Dbllinerdi:  | 0   |             |                                 |
| Dbllinerdi:  | 0   |             |                                 |
| Dblpumpset:  | 0   |             |                                 |
| Dblpumpdw:   | 0   |             |                                 |
| Dblpumphou:  | 0   |             |                                 |
| Dblscreend:  | 0   |             |                                 |
| Dtmcompdat:  | 30-OCT-79   |             |                                 |
| Dblgrndelet: | 481   |             |                                 |
| Strpumptyp:  | Not Reported  | Strownertx: | Not Reported                    |
| Utmx nad83:  | 437649.864447   |             |                                 |
| Utmy nad83:  | 4196535.1719  |             |                                 |
| Loc type:    | Actual Location   |             |                                 |
| Report:      | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233551&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233551&amp;_from=SUMMARY&amp;_action=Details</a> |             |                                 |
| Site id:     | INDNR3000291962   |             |                                 |

**D11  
North  
1/2 - 1 Mile  
Lower**

**IN WELLS      INLIT2000000176**

|             |            |            |     |
|-------------|------------|------------|-----|
| Area:       | 0          |            |     |
| Perimeter:  | 0          |            |     |
| Lith 2:     | 176        | Lith 2 id: | 176 |
| Index :     | 96561      |            |     |
| Alias :     | 233556     |            |     |
| Z:          | 0          |            |     |
| Z dem f:    | 438        |            |     |
| Z dem m:    | 133.505377 |            |     |
| Lith depth: | 48         |            |     |
| Depth:      | 48         |            |     |

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|                |                               |              |                      |
|----------------|-------------------------------|--------------|----------------------|
| Static:        | 0                             |              |                      |
| Comp date:     | 1979-10-30 00:00:00           |              |                      |
| Owner addr:    | 20 NW FOURTH ST EVANSVILLE IN |              |                      |
| Owner zip:     | 0                             |              |                      |
| Driller na:    | Goebel Brothers               |              |                      |
| Entered by:    | CWY                           |              |                      |
| Record sou:    | IDNR                          |              |                      |
| Entry date:    | Not Reported                  |              |                      |
| Project id:    | Not Reported                  |              |                      |
| Location b:    | 0                             |              |                      |
| Brdepth:       | 0                             |              |                      |
| Site id:       | INLIT2000000176               |              |                      |
| Edr latitude:  | 37.9155715159231              |              |                      |
| Edr longitude: | -87.7097167616912             |              |                      |
| Edr x:         | -25614084.3221635             |              |                      |
| Edr y:         | 11913378.3616426              |              |                      |
| Edr ll src:    | GOV                           | Edr tblname: | IN_WELLS_LITH_201209 |
| Edr src:       | SW                            |              |                      |
| Latitude:      | 37.9155715159231              |              |                      |
| Longitude:     | -87.7097167616912             |              |                      |
| X coord:       | -25614084.3221635             |              |                      |
| Y coord:       | 11913378.3616426              |              |                      |

**D12  
North  
1/2 - 1 Mile  
Lower**

**IN WELLS      INDNR3000290938**

|             |              |             |                                 |
|-------------|--------------|-------------|---------------------------------|
| Objectid:   | 290938       |             |                                 |
| Dblrefno:   | 233556       |             |                                 |
| Dblaquelv:  | 410          |             |                                 |
| Dblbailerr: | 5            |             |                                 |
| Dblbedrock: | 0            |             |                                 |
| Dblpumprat: | 0            |             |                                 |
| Dblbedro 1: | 0            |             |                                 |
| Dblscreenl: | 0            |             |                                 |
| Dblstatic:  | 0            |             |                                 |
| Dbldepth:   | 48           |             |                                 |
| Strownerad: | SIGECO       | Strownerad: | 20 NW FOURTH ST, EVANSVILLE, IN |
| Strrng1:    | 12W          | Strtwn1:    | 7S                              |
| Dblsec1:    | 13           |             |                                 |
| Dblutmy:    | 4196480      |             |                                 |
| Dblutmx:    | 437615       |             |                                 |
| Intreserve: | 0            | Streserve:  | Not Reported                    |
| Strcounty:  | POSEY        | Strtopo:    | WEST FRANKLIN, IN-KY            |
| Dblbailerd: | 0            |             |                                 |
| Dblbailerh: | 0            |             |                                 |
| Dblcasingd: | 4            |             |                                 |
| Dblcasingl: | 50           |             |                                 |
| Strcasingm: | Not Reported |             |                                 |
| Dblgroutt:  | 0            |             |                                 |
| Strgroutm:  | Not Reported |             |                                 |
| Dbllinerdi: | 0            |             |                                 |
| Dbllinerto: | 0            |             |                                 |
| Dblpumpset: | 0            |             |                                 |
| Dblpumpdw:  | 0            |             |                                 |
| Dblpumphou: | 0            |             |                                 |
| Dblscreend: | 0            |             |                                 |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|              |   |             |              |
|--------------|---|-------------|--------------|
| Dtmcompdat:  | 30-OCT-79   |             |              |
| Dblgrndelev: | 458   |             |              |
| Strpumpstyp: | Not Reported  | Strownertx: | Not Reported |
| Utmx nad83:  | 437614.862115   |             |              |
| Utmy nad83:  | 4196690.17521   |             |              |
| Loc type:    | Actual Location   |             |              |
| Report:      | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233556&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233556&amp;_from=SUMMARY&amp;_action=Details</a> |             |              |
| Site id:     | INDNR3000290938   |             |              |

**E13  
North  
1/2 - 1 Mile  
Higher**

**IN WELLS      INLIT2000000182**

|                |                                 |              |                      |
|----------------|---------------------------------|--------------|----------------------|
| Area:          | 0                               |              |                      |
| Perimeter:     | 0                               |              |                      |
| Lith 2:        | 182                             | Lith 2 id:   | 182                  |
| Index :        | 96557                           |              |                      |
| Alias :        | 233546                          |              |                      |
| Z:             | 0                               |              |                      |
| Z dem f:       | 472                             |              |                      |
| Z dem m:       | 143.852251                      |              |                      |
| Lith depth:    | 52                              |              |                      |
| Depth:         | 45                              |              |                      |
| Static:        | 0                               |              |                      |
| Comp date:     | 1979-10-30 00:00:00             |              |                      |
| Owner addr:    | 20 NW FOURTH ST. EVANSVILLE IN. |              |                      |
| Owner zip:     | 0                               |              |                      |
| Driller na:    | Goebel Brothers                 |              |                      |
| Entered by:    | RR                              |              |                      |
| Record sou:    | IDNR                            |              |                      |
| Entry date:    | Not Reported                    |              |                      |
| Project id:    | Not Reported                    |              |                      |
| Location b:    | 23                              |              |                      |
| Brdepth:       | 23                              |              |                      |
| Site id:       | INLIT2000000182                 |              |                      |
| Edr latitude:  | 37.9159467338231                |              |                      |
| Edr longitude: | -87.707274380796                |              |                      |
| Edr x:         | -25613371.0676632               |              |                      |
| Edr y:         | 11913516.6757686                |              |                      |
| Edr ll src:    | GOV                             | Edr tblname: | IN_WELLS_LITH_201209 |
| Edr src:       | SW                              |              |                      |
| Latitude:      | 37.9159467338231                |              |                      |
| Longitude:     | -87.707274380796                |              |                      |
| X coord:       | -25613371.0676632               |              |                      |
| Y coord:       | 11913516.6757686                |              |                      |

**E14  
North  
1/2 - 1 Mile  
Higher**

**IN WELLS      INDNR3000291545**

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|               |   |             |                                  |
|---------------|---|-------------|----------------------------------|
| Objectid:     | 291545  |             |                                  |
| Dblrefno:     | 233546  |             |                                  |
| Dblaquelv:    | 0   |             |                                  |
| Dblbailerr:   | 1   |             |                                  |
| Dblbedrock:   | 23  |             |                                  |
| Dblpumprat:   | 0   |             |                                  |
| Dblbedro 1:   | 407   |             |                                  |
| Dblscreenl:   | 0   |             |                                  |
| Dblstatic:    | 0   |             |                                  |
| Dbldepth:     | 45  |             |                                  |
| Strownerad:   | SIGECO  | Strownerad: | 20 NW FOUTH ST., EVANSVILLE, IN. |
| Strrng1:      | 12W   | Strtrwn1:   | 7S                               |
| Dblsec1:      | 13  |             |                                  |
| Dblutmy:      | 4196520   |             |                                  |
| Dblutmx:      | 437830  |             |                                  |
| Intreserve:   | 0   | Strreserve: | Not Reported                     |
| Strcounty:    | POSEY   | Strtopo:    | WEST FRANKLIN, IN-KY             |
| Dblbailerd:   | 0   |             |                                  |
| Dblbailerh:   | 0   |             |                                  |
| Dblcasingd:   | 4   |             |                                  |
| Dblcasingl:   | 45  |             |                                  |
| Strcasingm:   | Not Reported  |             |                                  |
| Dblgroutt:    | 0   |             |                                  |
| Strgroutm:    | Not Reported  |             |                                  |
| Dbllinerdi:   | 0   |             |                                  |
| Dbllinertr:   | 0   |             |                                  |
| Dblpumpset:   | 0   |             |                                  |
| Dblpumpdw:    | 0   |             |                                  |
| Dblpumphou:   | 0   |             |                                  |
| Dblscreenend: | 0   |             |                                  |
| Dtmcompdat:   | 30-OCT-79   |             |                                  |
| Dblgrndelet:  | 430   |             |                                  |
| Strpumptyp:   | Not Reported  | Strownertx: | Not Reported                     |
| Utmx nad83:   | 437829.864507   |             |                                  |
| Utmy nad83:   | 4196730.1762  |             |                                  |
| Loc type:     | Actual Location   |             |                                  |
| Report:       | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233546&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233546&amp;_from=SUMMARY&amp;_action=Details</a> |             |                                  |
| Site id:      | INDNR3000291545   |             |                                  |

**F15  
West  
1/2 - 1 Mile  
Lower**

**IN WELLS**

**INDNR3000306433**

|             |        |
|-------------|--------|
| Objectid:   | 306433 |
| Dblrefno:   | 313382 |
| Dblaquelv:  | 0      |
| Dblbailerr: | 0      |
| Dblbedrock: | 0      |
| Dblpumprat: | 0      |
| Dblbedro 1: | 0      |
| Dblscreenl: | 0      |
| Dblstatic:  | 0      |
| Dbldepth:   | 18     |

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|              |   |             |                      |
|--------------|---|-------------|----------------------|
| Strowner:    | RUDOLPH BOERNER   | Strownerad: | Not Reported         |
| Strrng1:     | 12W   | Strtrwn1:   | 7S                   |
| Dblsec1:     | 14  |             |                      |
| Dblutmy:     | 4195650   |             |                      |
| Dblutmx:     | 436525  |             |                      |
| Intreserve:  | 0   | Strreserve: | Not Reported         |
| Strcounty:   | POSEY   | Strtopo:    | WEST FRANKLIN, IN-KY |
| Dblbailerd:  | 0   |             |                      |
| Dblbailerh:  | 0   |             |                      |
| Dblcasingd:  | 0   |             |                      |
| Dblcasingl:  | 0   |             |                      |
| Strcasingm:  | Not Reported  |             |                      |
| Dblgroutt:   | 0   |             |                      |
| Strgroutm:   | Not Reported  |             |                      |
| Dbllinerdi:  | 0   |             |                      |
| Dbllinerto:  | 0   |             |                      |
| Dblpumpset:  | 0   |             |                      |
| Dblpumpdw:   | 0   |             |                      |
| Dblpumphou:  | 0   |             |                      |
| Dblscreend:  | 0   |             |                      |
| Dtmcompdat:  | 01-JUL-56   |             |                      |
| Dblgrndelet: | 384   |             |                      |
| Strpumptyp:  | Not Reported  | Strownertx: | Not Reported         |
| Utmx nad83:  | 436524.857204   |             |                      |
| Utmx nad83:  | 4195860.1564  |             |                      |
| Loc type:    | Actual Location   |             |                      |
| Report:      | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=313382&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=313382&amp;_from=SUMMARY&amp;_action=Details</a> |             |                      |
| Site id:     | INDNR3000306433   |             |                      |

**F16  
West  
1/2 - 1 Mile  
Lower**

**IN WELLS      INLIT2000000141**

|             |                                   |            |     |
|-------------|-----------------------------------|------------|-----|
| Area:       | 0                                 |            |     |
| Perimeter:  | 0                                 |            |     |
| Lith 2:     | 141                               | Lith 2 id: | 141 |
| Index :     | 96553                             |            |     |
| Alias :     | 233536                            |            |     |
| Z:          | 404                               |            |     |
| Z dem f:    | 406                               |            |     |
| Z dem m:    | 123.733495                        |            |     |
| Lith depth: | 120                               |            |     |
| Depth:      | 120                               |            |     |
| Static:     | 43                                |            |     |
| Comp date:  | 1966-03-29 00:00:00               |            |     |
| Owner addr: | RRT. #1 MT. VERNON IN.            |            |     |
| Owner zip:  | 0                                 |            |     |
| Driller na: | Weinzapfel - Paul - Well Drilling |            |     |
| Entered by: | RR                                |            |     |
| Record sou: | IDNR                              |            |     |
| Entry date: | Not Reported                      |            |     |
| Project id: | Not Reported                      |            |     |
| Location b: | 67                                |            |     |



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|                |                   |              |                      |
|----------------|-------------------|--------------|----------------------|
| Brdepth:       | 67                |              |                      |
| Site id:       | INLIT2000000141   |              |                      |
| Edr latitude:  | 37.9082675085674  |              |                      |
| Edr longitude: | -87.7221596357258 |              |                      |
| Edr x:         | -25617718.0452731 |              |                      |
| Edr y:         | 11910686.0747691  |              |                      |
| Edr ll src:    | GOV               | Edr tblname: | IN_WELLS_LITH_201209 |
| Edr src:       | SW                |              |                      |
| Latitude:      | 37.9082675085674  |              |                      |
| Longitude:     | -87.7221596357258 |              |                      |
| X coord:       | -25617718.0452731 |              |                      |
| Y coord:       | 11910686.0747691  |              |                      |

**F17**  
**West**  
**1/2 - 1 Mile**  
**Lower**

**IN WELLS      INDNR3000291307**

|               |   |             |                          |
|---------------|---|-------------|--------------------------|
| Objectid:     | 291307  |             |                          |
| Dblrefno:     | 233536  |             |                          |
| Dblaquelv:    | 0   |             |                          |
| Dblbailerr:   | 2   |             |                          |
| Dblbedrock:   | 25  |             |                          |
| Dblpumprat:   | 0   |             |                          |
| Dblbedro 1:   | 379   |             |                          |
| Dblscreen:    | 0   |             |                          |
| Dblstatic:    | 43  |             |                          |
| Dbldepth:     | 120   |             |                          |
| Strowner:     | JERRY BOERNER   | Strownerad: | RRT. #1, MT. VERNON, IN. |
| Strrng1:      | 12W   | Strtrwn1:   | 7S                       |
| Dblsec1:      | 14  |             |                          |
| Dblutmy:      | 4195678   |             |                          |
| Dblutmx:      | 436515  |             |                          |
| Inreserve:    | 0   | Strreserve: | Not Reported             |
| Strcounty:    | POSEY   | Strtopo:    | WEST FRANKLIN, IN-KY     |
| Dblbailerd:   | 0   |             |                          |
| Dblbailerh:   | 1   |             |                          |
| Dblcasingd:   | 6.25  |             |                          |
| Dblcasingl:   | 67  |             |                          |
| Strcasingm:   | Not Reported  |             |                          |
| Dblgroutt:    | 0   |             |                          |
| Strgroutm:    | Not Reported  |             |                          |
| Dbllinerdi:   | 0   |             |                          |
| Dblinerto:    | 0   |             |                          |
| Dblpumpset:   | 0   |             |                          |
| Dblpumpdw:    | 0   |             |                          |
| Dblpumphou:   | 0   |             |                          |
| Dblscreenend: | 0   |             |                          |
| Dtmcompdat:   | 29-MAR-66   |             |                          |
| Dblgrndelet:  | 404   |             |                          |
| Strpumptyp:   | Not Reported  | Strownertx: | Not Reported             |
| Utmx nad83:   | 436514.856741   |             |                          |
| Utmx nad83:   | 4195888.157   |             |                          |
| Loc type:     | Actual Location   |             |                          |
| Report:       | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233536&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233536&amp;_from=SUMMARY&amp;_action=Details</a> |             |                          |
| Site id:      | INDNR3000291307   |             |                          |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Elevation

Database      EDR ID Number

**G18**  
**West**  
**1/2 - 1 Mile**  
**Lower**

**IN WELLS      INLIT2000000131**

|                |                     |              |                      |
|----------------|---------------------|--------------|----------------------|
| Area:          | 0                   |              |                      |
| Perimeter:     | 0                   |              |                      |
| Lith 2:        | 131                 | Lith 2 id:   | 131                  |
| Index :        | 96548               |              |                      |
| Alias :        | 233526              |              |                      |
| Z:             | 380                 |              |                      |
| Z dem f:       | 398                 |              |                      |
| Z dem m:       | 121.279525          |              |                      |
| Lith depth:    | 95                  |              |                      |
| Depth:         | 95                  |              |                      |
| Static:        | 0                   |              |                      |
| Comp date:     | 1941-02-06 00:00:00 |              |                      |
| Owner addr:    | WEST FRANKLIN       |              |                      |
| Owner zip:     | 0                   |              |                      |
| Driller na:    | Dunville Inc.       |              |                      |
| Entered by:    | KRL                 |              |                      |
| Record sou:    | IDNR                |              |                      |
| Entry date:    | Not Reported        |              |                      |
| Project id:    | Not Reported        |              |                      |
| Location b:    | 62                  |              |                      |
| Brdepth:       | 62                  |              |                      |
| Site id:       | INLIT2000000131     |              |                      |
| Edr latitude:  | 37.905607336997     |              |                      |
| Edr longitude: | -87.7223838875196   |              |                      |
| Edr x:         | -25617783.534076    |              |                      |
| Edr y:         | 11909705.5916402    |              |                      |
| Edr ll src:    | GOV                 | Edr tblname: | IN_WELLS_LITH_201209 |
| Edr src:       | SW                  |              |                      |
| Latitude:      | 37.905607336997     |              |                      |
| Longitude:     | -87.7223838875196   |              |                      |
| X coord:       | -25617783.534076    |              |                      |
| Y coord:       | 11909705.5916402    |              |                      |

**G19**  
**West**  
**1/2 - 1 Mile**  
**Lower**

**IN WELLS      INDNR3000291707**

|             |        |
|-------------|--------|
| Objectid:   | 291707 |
| Dblrefno:   | 233526 |
| Dblaquelv:  | 0      |
| Dblbailerr: | 0      |
| Dblbedrock: | 62     |
| Dblpumprat: | 0      |
| Dblbedro 1: | 318    |
| Dblscreen:  | 0      |
| Dblstatic:  | 0      |
| Dbldepth:   | 95     |

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|              |   |             |                      |
|--------------|---|-------------|----------------------|
| Strowner:    | MRS. ANNA(RUDOLPH) BEERNIS  | Strownerad: | WEST FRANKLIN        |
| Strrng1:     | 12W   | Strtrwn1:   | 7S                   |
| Dblsec1:     | 14  |             |                      |
| Dblutmy:     | 4195383   |             |                      |
| Dblutmx:     | 436493  |             |                      |
| Intreserve:  | 0   | Strreserve: | Not Reported         |
| Strcounty:   | POSEY   | Strtopo:    | WEST FRANKLIN, IN-KY |
| Dblbailerd:  | 0   |             |                      |
| Dblbailerh:  | 0   |             |                      |
| Dblcasingd:  | 0   |             |                      |
| Dblcasingl:  | 0   |             |                      |
| Strcasingm:  | Not Reported  |             |                      |
| Dblgroutt:   | 0   |             |                      |
| Strgroutm:   | Not Reported  |             |                      |
| Dbllinerdi:  | 0   |             |                      |
| Dbllinerto:  | 0   |             |                      |
| Dblpumpset:  | 0   |             |                      |
| Dblpumpdw:   | 0   |             |                      |
| Dblpumphou:  | 0   |             |                      |
| Dblscreend:  | 0   |             |                      |
| Dtmcompdat:  | 06-FEB-41   |             |                      |
| Dblgrndelet: | 380   |             |                      |
| Strpumptyp:  | Not Reported  | Strownertx: | Not Reported         |
| Utmx nad83:  | 436492.859878   |             |                      |
| Utmy nad83:  | 4195593.15054   |             |                      |
| Loc type:    | Actual Location   |             |                      |
| Report:      | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233526&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233526&amp;_from=SUMMARY&amp;_action=Details</a> |             |                      |
| Site id:     | INDNR3000291707   |             |                      |

**H2O  
NW  
1/2 - 1 Mile  
Lower**

**IN WELLS      INLIT2000000188**

|             |                        |            |     |
|-------------|------------------------|------------|-----|
| Area:       | 0                      |            |     |
| Perimeter:  | 0                      |            |     |
| Lith 2:     | 188                    | Lith 2 id: | 188 |
| Index :     | 96567                  |            |     |
| Alias :     | 233566                 |            |     |
| Z:          | 420                    |            |     |
| Z dem f:    | 440                    |            |     |
| Z dem m:    | 134.128369             |            |     |
| Lith depth: | 120                    |            |     |
| Depth:      | 120                    |            |     |
| Static:     | 0                      |            |     |
| Comp date:  | 1971-03-01 00:00:00    |            |     |
| Owner addr: | RRT. 2 MT. VERNON IN.  |            |     |
| Owner zip:  | 0                      |            |     |
| Driller na: | Little - D.L. Drilling |            |     |
| Entered by: | RR                     |            |     |
| Record sou: | IDNR                   |            |     |
| Entry date: | Not Reported           |            |     |
| Project id: | Not Reported           |            |     |
| Location b: | 42                     |            |     |

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|                |                   |              |                      |
|----------------|-------------------|--------------|----------------------|
| Brdepth:       | 15                |              |                      |
| Site id:       | INLIT2000000188   |              |                      |
| Edr latitude:  | 37.9171702582587  |              |                      |
| Edr longitude: | -87.7180599892739 |              |                      |
| Edr x:         | -25616520.815436  |              |                      |
| Edr y:         | 11913967.7005399  |              |                      |
| Edr ll src:    | GOV               | Edr tblname: | IN_WELLS_LITH_201209 |
| Edr src:       | SW                |              |                      |
| Latitude:      | 37.9171702582587  |              |                      |
| Longitude:     | -87.7180599892739 |              |                      |
| X coord:       | -25616520.815436  |              |                      |
| Y coord:       | 11913967.7005399  |              |                      |

**H21  
NW  
1/2 - 1 Mile  
Lower**

**IN WELLS      INDNR3000291759**

|             |   |             |                         |
|-------------|---|-------------|-------------------------|
| Objectid:   | 291759  |             |                         |
| Dblrefno:   | 233566  |             |                         |
| Dblaquelv:  | 0   |             |                         |
| Dblbailerr: | 2   |             |                         |
| Dblbedrock: | 15  |             |                         |
| Dblpumprat: | 0   |             |                         |
| Dblbedro 1: | 405   |             |                         |
| Dblscreen:  | 0   |             |                         |
| Dblstatic:  | 0   |             |                         |
| Dbldepth:   | 120   |             |                         |
| Strowner:   | RICHARD FOLZ  | Strownerad: | RRT. 2, MT. VERNON, IN. |
| Strrng1:    | 12W   | Strtwn1:    | 7S                      |
| Dblsec1:    | 13  |             |                         |
| Dblutmy:    | 4196663   |             |                         |
| Dblutm:     | 436883  |             |                         |
| Inreserve:  | 0   | Strreserve: | Not Reported            |
| Strcounty:  | POSEY   | Strtopo:    | WEST FRANKLIN, IN-KY    |
| Dblbailerd: | 120   |             |                         |
| Dblbailerh: | 1   |             |                         |
| Dblcasingd: | 5.5   |             |                         |
| Dblcasingl: | 48  |             |                         |
| Strcasingm: | Not Reported  |             |                         |
| Dblgroutt:  | 0   |             |                         |
| Strgroutm:  | Not Reported  |             |                         |
| Dbllinerdi: | 0   |             |                         |
| Dblinerto:  | 0   |             |                         |
| Dblpumpset: | 0   |             |                         |
| Dblpumpdw:  | 0   |             |                         |
| Dblpumphou: | 0   |             |                         |
| Dblscreen:  | 0   |             |                         |
| Dtmcompdat: | 01-MAR-71   |             |                         |
| Dblgrnde:   | 420   |             |                         |
| Strpumptyp: | Not Reported  | Strownertx: | Not Reported            |
| Utmx nad83: | 436882.850166   |             |                         |
| Utmx nad83: | 4196873.17871   |             |                         |
| Loc type:   | Actual Location   |             |                         |
| Report:     | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233566&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233566&amp;_from=SUMMARY&amp;_action=Details</a> |             |                         |
| Site id:    | INDNR3000291759   |             |                         |

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Elevation

Database      EDR ID Number

**I22**  
**South**  
**1/2 - 1 Mile**  
**Lower**

**IN WELLS      INDNR3000291965**

|             |   |             |                             |
|-------------|---|-------------|-----------------------------|
| Objectid:   | 291965  |             |                             |
| Dblrefno:   | 233557  |             |                             |
| Dblaquelv:  | 0   |             |                             |
| Dblbailerr: | .75   |             |                             |
| Dblbedrock: | 15  |             |                             |
| Dblpumprat: | 0   |             |                             |
| Dblbedro 1: | 355   |             |                             |
| Dblscreen:  | 0   |             |                             |
| Dblstatic:  | 18  |             |                             |
| Dbldepth:   | 80  |             |                             |
| Strowner:   | CHARLES MCDONALD  | Strownerad: | 5200 FULLERTON, CHICAGO, IL |
| Strrng1:    | 12W   | Strtwn1:    | 7S                          |
| Dblsec1:    | 24  |             |                             |
| Dblutmy:    | 4194258   |             |                             |
| Dblutmx:    | 437491  |             |                             |
| Intrerev:   | 0   | Strreserve: | Not Reported                |
| Strcounty:  | POSEY   | Strtopo:    | WEST FRANKLIN, IN-KY        |
| Dblbailerd: | 0   |             |                             |
| Dblbailerh: | 0   |             |                             |
| Dblcasingd: | 6.25  |             |                             |
| Dblcasingl: | 30  |             |                             |
| Strcasingm: | Not Reported  |             |                             |
| Dblgroutt:  | 0   |             |                             |
| Strgroutm:  | Not Reported  |             |                             |
| Dbllinerdi: | 0   |             |                             |
| Dbllinerho: | 0   |             |                             |
| Dblpumpset: | 0   |             |                             |
| Dblpumpdw:  | 0   |             |                             |
| Dblpumphou: | 0   |             |                             |
| Dblscreen:  | 0   |             |                             |
| Dtmcompdat: | 01-MAR-73   |             |                             |
| Dblgrnde:   | 370   |             |                             |
| Strpumptyp: | Not Reported  | Strownertx: | Not Reported                |
| Utmx nad83: | 437490.887087   |             |                             |
| Utmy nad83: | 4194468.12725   |             |                             |
| Loc type:   | Actual Location   |             |                             |
| Report:     | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233557&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233557&amp;_from=SUMMARY&amp;_action=Details</a> |             |                             |
| Site id:    | INDNR3000291965   |             |                             |

**I23**  
**South**  
**1/2 - 1 Mile**  
**Lower**

**IN WELLS      INLIT200000109**

|             |            |            |     |
|-------------|------------|------------|-----|
| Area:       | 0          |            |     |
| Perimeter:  | 0          |            |     |
| Lith 2:     | 109        | Lith 2 id: | 109 |
| Index :     | 96562      |            |     |
| Alias :     | 233557     |            |     |
| Z:          | 370        |            |     |
| Z dem f:    | 396        |            |     |
| Z dem m:    | 120.739532 |            |     |
| Lith depth: | 80         |            |     |
| Depth:      | 80         |            |     |

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|                |                            |              |                      |
|----------------|----------------------------|--------------|----------------------|
| Static:        | 18                         |              |                      |
| Comp date:     | 1973-03-01 00:00:00        |              |                      |
| Owner addr:    | 5200 FULLERTON CHICAGO IL  |              |                      |
| Owner zip:     | 60639                      |              |                      |
| Driller na:    | Richardville Well Drilling |              |                      |
| Entered by:    | RR                         |              |                      |
| Record sou:    | IDNR                       |              |                      |
| Entry date:    | Not Reported               |              |                      |
| Project id:    | Not Reported               |              |                      |
| Location b:    | 30                         |              |                      |
| Brdepth:       | 15                         |              |                      |
| Site id:       | INLIT2000000109            |              |                      |
| Edr latitude:  | 37.8955375603513           |              |                      |
| Edr longitude: | -87.7109346789822          |              |                      |
| Edr x:         | -25614439.9935456          |              |                      |
| Edr y:         | 11905994.4080507           |              |                      |
| Edr ll src:    | GOV                        | Edr tblname: | IN_WELLS_LITH_201209 |
| Edr src:       | SW                         |              |                      |
| Latitude:      | 37.8955375603513           |              |                      |
| Longitude:     | -87.7109346789822          |              |                      |
| X coord:       | -25614439.9935456          |              |                      |
| Y coord:       | 11905994.4080507           |              |                      |

**J24  
SW  
1/2 - 1 Mile  
Lower**

**IN WELLS      INDNR3000291976**

|             |              |             |                      |
|-------------|--------------|-------------|----------------------|
| Objectid:   | 291976       |             |                      |
| Dblrefno:   | 233567       |             |                      |
| Dblaquely:  | 0            |             |                      |
| Dblbailerr: | .5           |             |                      |
| Dblbedrock: | 50           |             |                      |
| Dblpumprat: | 0            |             |                      |
| Dblbedro 1: | 335          |             |                      |
| Dblscreenl: | 0            |             |                      |
| Dblstatic:  | 48           |             |                      |
| Dbldepth:   | 180          |             |                      |
| Strowner:   | J. BOERER    | Strownerad: | Not Reported         |
| Strrng1:    | 12W          | Strtwn1:    | 7S                   |
| Dblsec1:    | 24           |             |                      |
| Dblutmy:    | 4194488      |             |                      |
| Dblutmx:    | 436822       |             |                      |
| Intreserve: | 0            | Streserve:  | Not Reported         |
| Strcounty:  | VANDERBURGH  | Strtopo:    | WEST FRANKLIN, IN-KY |
| Dblbailerd: | 132          |             |                      |
| Dblbailerh: | 0            |             |                      |
| Dblcasingd: | 6.25         |             |                      |
| Dblcasingl: | 44           |             |                      |
| Strcasingm: | Not Reported |             |                      |
| Dblgroutt:  | 0            |             |                      |
| Strgroutm:  | Not Reported |             |                      |
| Dbllinerdi: | 0            |             |                      |
| Dbllinerto: | 0            |             |                      |
| Dblpumpset: | 0            |             |                      |
| Dblpumpdw:  | 0            |             |                      |
| Dblpumphou: | 0            |             |                      |
| Dblscreend: | 0            |             |                      |

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dtmcompdat: 14-OCT-53  
 Dblgrnde: 385  
 Strpump: Not Reported      Strownertx: Not Reported  
 Utmx nad83: 436821.874931  
 Utmy nad83: 4194698.13139  
 Loc type: Actual Location  
 Report: [https://secure.in.gov/apps/dnr/water/dnr\\_waterwell?refNo=233567&\\_from=SUMMARY&\\_action=Details](https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233567&_from=SUMMARY&_action=Details)  
 Site id: INDNR3000291976

**J25**  
**SW**  
**1/2 - 1 Mile**  
**Lower**

**IN WELLS      INLIT200000115**

|                |                       |              |                      |
|----------------|-----------------------|--------------|----------------------|
| Area:          | 0                     |              |                      |
| Perimeter:     | 0                     |              |                      |
| Lith 2:        | 115                   | Lith 2 id:   | 115                  |
| Index :        | 96568                 |              |                      |
| Alias :        | 233567                |              |                      |
| Z:             | 385                   |              |                      |
| Z dem f:       | 399                   |              |                      |
| Z dem m:       | 121.72352             |              |                      |
| Lith depth:    | 180                   |              |                      |
| Depth:         | 180                   |              |                      |
| Static:        | 48                    |              |                      |
| Comp date:     | 1953-10-14 00:00:00   |              |                      |
| Owner addr:    | Not Reported          |              |                      |
| Owner zip:     | 0                     |              |                      |
| Driller na:    | Richardville - Edmond |              |                      |
| Entered by:    | KRL                   |              |                      |
| Record sou:    | IDNR                  |              |                      |
| Entry date:    | Not Reported          |              |                      |
| Project id:    | Not Reported          |              |                      |
| Location b:    | 85                    |              |                      |
| Brdepth:       | 50                    |              |                      |
| Site id:       | INLIT200000115        |              |                      |
| Edr latitude:  | 37.8975642008719      |              |                      |
| Edr longitude: | -87.7185632751526     |              |                      |
| Edr x:         | -25616667.791249      |              |                      |
| Edr y:         | 11906741.2787029      |              |                      |
| Edr ll src:    | GOV                   | Edr tblname: | IN_WELLS_LITH_201209 |
| Edr src:       | SW                    |              |                      |
| Latitude:      | 37.8975642008719      |              |                      |
| Longitude:     | -87.7185632751526     |              |                      |
| X coord:       | -25616667.791249      |              |                      |
| Y coord:       | 11906741.2787029      |              |                      |

**J26**  
**SW**  
**1/2 - 1 Mile**  
**Lower**

**IN WELLS      INDNR3000290743**

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|              |   |             |                      |
|--------------|---|-------------|----------------------|
| Objectid:    | 290743  |             |                      |
| Dblrefno:    | 233572  |             |                      |
| Dblaquelv:   | 0   |             |                      |
| Dblbailerr:  | 0   |             |                      |
| Dblbedrock:  | 0   |             |                      |
| Dblpumprat:  | 0   |             |                      |
| Dblbedro 1:  | 0   |             |                      |
| Dblscreenl:  | 2   |             |                      |
| Dblstatic:   | 17  |             |                      |
| Dbldepth:    | 36  |             |                      |
| Strowner:    | J. BOERNER  | Strownerad: | WEST FRANKLIN        |
| Strrng1:     | 12W   | Strtwn1:    | 7S                   |
| Dblsec1:     | 24  |             |                      |
| Dblutmy:     | 4194445   |             |                      |
| Dblutmx:     | 436828  |             |                      |
| Intreserve:  | 0   | Strreserve: | Not Reported         |
| Strcounty:   | POSEY   | Strtopo:    | WEST FRANKLIN, IN-KY |
| Dblbailerd:  | 0   |             |                      |
| Dblbailerh:  | 0   |             |                      |
| Dblcasingd:  | 2   |             |                      |
| Dblcasingl:  | 0   |             |                      |
| Strcasingm:  | Not Reported  |             |                      |
| Dblgroutt:   | 0   |             |                      |
| Strgroutm:   | Not Reported  |             |                      |
| Dbllinerdi:  | 0   |             |                      |
| Dbllinerto:  | 0   |             |                      |
| Dblpumpset:  | 0   |             |                      |
| Dblpumpdw:   | 0   |             |                      |
| Dblpumphou:  | 0   |             |                      |
| Dblscreend:  | 0   |             |                      |
| Dtmcompdat:  | 02-JUL-56   |             |                      |
| Dblgrnde:    | 365   |             |                      |
| Strpumpstyp: | Not Reported  | Strownertx: | Not Reported         |
| Utmx nad83:  | 436827.875521   |             |                      |
| Utmy nad83:  | 4194655.13046   |             |                      |
| Loc type:    | Actual Location   |             |                      |
| Report:      | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233572&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233572&amp;_from=SUMMARY&amp;_action=Details</a> |             |                      |
| Site id:     | INDNR3000290743   |             |                      |

**27**  
**West**  
**1/2 - 1 Mile**  
**Lower**

**IN WELLS      INDNR3000291314**

|             |        |
|-------------|--------|
| Objectid:   | 291314 |
| Dblrefno:   | 233531 |
| Dblaquelv:  | 337    |
| Dblbailerr: | 0      |
| Dblbedrock: | 0      |
| Dblpumprat: | 7      |
| Dblbedro 1: | 0      |
| Dblscreenl: | 8      |
| Dblstatic:  | 28     |
| Dbldepth:   | 40     |



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

|              |   |             |                      |
|--------------|---|-------------|----------------------|
| Strowner:    | BOB BOERNER   | Strownerad: | DARNELL SCHOOL RD.   |
| Strrng1:     | 12W   | Strtrwn1:   | 7S                   |
| Dblsec1:     | 14  |             |                      |
| Dblutmy:     | 4195380   |             |                      |
| Dblutmx:     | 436202  |             |                      |
| Intreserve:  | 0   | Strreserve: | Not Reported         |
| Strcounty:   | POSEY   | Strtopo:    | WEST FRANKLIN, IN-KY |
| Dblbailerd:  | 0   |             |                      |
| Dblbailerh:  | 0   |             |                      |
| Dblcasingd:  | 6.63  |             |                      |
| Dblcasingl:  | 36  |             |                      |
| Strcasingm:  | Not Reported  |             |                      |
| Dblgroutt:   | 0   |             |                      |
| Strgroutm:   | Not Reported  |             |                      |
| Dbllinerdi:  | 0   |             |                      |
| Dbllinerto:  | 0   |             |                      |
| Dblpumpset:  | 0   |             |                      |
| Dblpumpdw:   | 5   |             |                      |
| Dblpumphou:  | 1   |             |                      |
| Dblscreend:  | 4   |             |                      |
| Dtmcompdat:  | 15-MAR-79   |             |                      |
| Dblgrndelet: | 377   |             |                      |
| Strpumptyp:  | Not Reported  | Strownertx: | Not Reported         |
| Utmx nad83:  | 436201.855911   |             |                      |
| Utmx nad83:  | 4195590.1502  |             |                      |
| Loc type:    | Actual Location   |             |                      |
| Report:      | <a href="https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233531&amp;_from=SUMMARY&amp;_action=Details">https://secure.in.gov/apps/dnr/water/dnr_waterwell?refNo=233531&amp;_from=SUMMARY&amp;_action=Details</a> |             |                      |
| Site id:     | INDNR3000291314   |             |                      |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

## RADON

### AREA RADON INFORMATION

State Database: IN Radon

#### Radon Test Results

| Zipcode | Year | Test Type       | Location  | Result |
|---------|------|-----------------|-----------|--------|
| 47712   | 1994 | Post-Mitigation | Other     | 3.4    |
| 47712   | 0    | Unknown         | Other     | 2.8    |
| 47712   | 0    | Unknown         | Other     | 2.8    |
| 47712   | 1999 | Long Term       | 1st Floor | 4.0    |
| 47712   | 1996 | Short Term      | Other     | 5.1    |
| 47712   | 1996 | Short Term      | Other     | 12.8   |
| 47712   | 1994 | Short Term      | Other     | 1.4    |
| 47712   | 2000 | Short Term      | Other     | 2.2    |
| 47712   | 2000 | Short Term      | Other     | 1.6    |
| 47712   | 2000 | Short Term      | Other     | 2.2    |
| 47712   | 2000 | Short Term      | Other     | 0.9    |
| 47712   | 2000 | Short Term      | Other     | 0.9    |
| 47712   | 2000 | Short Term      | Other     | 0.6    |
| 47712   | 2000 | Short Term      | Other     | 3.7    |
| 47712   | 1995 | Short Term      | Other     | 3.5    |
| 47712   | 1995 | Short Term      | Other     | 1.1    |
| 47712   | 1995 | Short Term      | Other     | 1.1    |
| 47712   | 1995 | Short Term      | Other     | 1.9    |
| 47712   | 1995 | Short Term      | Other     | 2.0    |
| 47712   | 1997 | Short Term      | 1st Floor | 0.4    |
| 47712   | 2000 | Short Term      | Basement  | 0.5    |
| 47712   | 1997 | Short Term      | Other     | 9.1    |
| 47712   | 2004 | Short Term      | Basement  | 5.3    |
| 47712   | 2004 | Post-Mitigation | Basement  | 3.6    |
| 47712   | 2004 | Short Term      | Basement  | 4.3    |
| 47712   | 2004 | Short Term      | Basement  | 2.2    |
| 47712   | 2004 | Short Term      | Other     | 3.4    |
| 47712   | 2004 | Short Term      | Basement  | 4.5    |
| 47712   | 2004 | Short Term      | Basement  | 1.6    |
| 47712   | 2004 | Short Term      | Basement  | 6.4    |
| 47712   | 2004 | Short Term      | Basement  | 3.8    |
| 47712   | 2004 | Short Term      | Other     | 1.5    |
| 47712   | 2004 | Short Term      | Basement  | 3.9    |
| 47712   | 2004 | Short Term      | Other     | 0.7    |
| 47712   | 2004 | Short Term      | Other     | 0.7    |
| 47712   | 2001 | Short Term      | Basement  | 6.5    |
| 47712   | 2001 | Short Term      | Basement  | 4.8    |
| 47712   | 2001 | Short Term      | 1st Floor | 2.9    |
| 47712   | 2001 | Short Term      | 1st Floor | 9.2    |
| 47712   | 2001 | Short Term      | Basement  | 4.6    |
| 47712   | 2001 | Short Term      | 1st Floor | 6.6    |
| 47712   | 2000 | Short Term      | 0         | 0.5    |
| 47712   | 2001 | Long Term       | 1st Floor | 1.7    |
| 47712   | 2002 | Short Term      | 1st Floor | 0.8    |
| 47712   | 2002 | Short Term      | 1st Floor | 1.2    |
| 47712   | 2002 | Short Term      | 1st Floor | 3.0    |
| 47712   |      |                 |           |        |

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

### AREA RADON INFORMATION

|       |      |            |           |     |
|-------|------|------------|-----------|-----|
|       | 2002 | Short Term | 1st Floor | 2.4 |
| 47712 | 2002 | Short Term | 1st Floor | 2.9 |
| 47712 | 2002 | Short Term | 1st Floor | 2.9 |
| 47712 | 2002 | Short Term | 1st Floor | 0.9 |
| 47712 | 2002 | Short Term | 1st Floor | 7.3 |
| 47712 | 1996 | Short Term | Other     | 5.2 |
| 47712 | 2000 | Short Term | Other     | 2.8 |
| 47712 | 2000 | Short Term | Other     | 3.7 |
| 47712 | 1999 | Short Term | Other     | 3.9 |
| 47712 | 2004 | Short Term | Basement  | 0.9 |
| 47712 | 2004 | Short Term | Basement  | 4.8 |
| 47712 | 2004 | Short Term | Other     | 1.5 |
| 47712 | 2000 | Short Term | Basement  | 0.5 |
| 47712 | 2002 | Short Term | 1st Floor | 1.0 |

Federal EPA Radon Zone for POSEY County: 2

- Note: Zone 1 indoor average level > 4 pCi/L.  
 : Zone 2 indoor average level  $\geq$  2 pCi/L and  $\leq$  4 pCi/L.  
 : Zone 3 indoor average level < 2 pCi/L.

---

Federal Area Radon Information for Zip Code: 47712

Number of sites tested: 5

| Area                    | Average Activity | % <4 pCi/L   | % 4-20 pCi/L | % >20 pCi/L  |
|-------------------------|------------------|--------------|--------------|--------------|
| Living Area - 1st Floor | 3.375 pCi/L      | 75%          | 25%          | 0%           |
| Living Area - 2nd Floor | Not Reported     | Not Reported | Not Reported | Not Reported |
| Basement                | 3.320 pCi/L      | 80%          | 20%          | 0%           |

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

### USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

### Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

## HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

### State Wetlands Data: Wetland Inventory

Source: US Fish & Wildlife Service

Telephone: 703-358-2171

## HYDROGEOLOGIC INFORMATION

### AQUIFLOW<sup>R</sup> Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

### Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

### SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

### FEDERAL WATER WELLS

#### PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

#### PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

#### USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

### STATE RECORDS

#### Public Water Supply Wells

Source: Department of Environmental Management

Telephone: 317-308-3323

Community and non-community drinking water wells.

#### Water Wells Database

Source: Indiana Geological Survey

Telephone: 812-855-7636

Shows data points that represent water wells contained in the Lithologic database, which is derived from the water well database of the Indiana Department of Natural Resources

## OTHER STATE DATABASE INFORMATION

### RADON

#### State Database: IN Radon

Source: Department of Health

Telephone: 317-233-7148

Radon Test Results

#### Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

#### EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

### OTHER

#### Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

#### Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## STREET AND ADDRESS INFORMATION

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A.B.Brown Generating Station

8511 Welborn Rd

Evansville, IN 47712

Inquiry Number: 5203791.3

February 28, 2018

## Certified Sanborn® Map Report



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# Certified Sanborn® Map Report

02/28/18

**Site Name:**

A.B.Brown Generating Station  
8511 Welborn Rd  
Evansville, IN 47712  
EDR Inquiry # 5203791.3

**Client Name:**

Haley & Aldrich, Inc.  
465 Medford Street  
Boston, MA 02129  
Contact: Julia Scott



The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Haley & Aldrich, Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting [www.edrnet.com/sanborn](http://www.edrnet.com/sanborn).

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

### Certified Sanborn Results:

**Certification #** D212-494E-A6CC  
**PO #** 129420  
**Project** A.B.Brown



Sanborn® Library search results

Certification #: D212-494E-A6CC

### UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- Library of Congress
- University Publications of America
- EDR Private Collection

*The Sanborn Library LLC Since 1866™*

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A.B.Brown Generating Station

8511 Welborn Rd

Evansville, IN 47712

Inquiry Number: 5203791.4

February 28, 2018

## EDR Historical Topo Map Report

with QuadMatch™



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# EDR Historical Topo Map Report

02/28/18

**Site Name:**

A.B.Brown Generating Station  
8511 Welborn Rd  
Evansville, IN 47712  
EDR Inquiry # 5203791.4

**Client Name:**

Haley & Aldrich, Inc.  
465 Medford Street  
Boston, MA 02129  
Contact: Julia Scott



EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Haley & Aldrich, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDR's Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

**Search Results:****Coordinates:**

|                 |           |                      |                              |
|-----------------|-----------|----------------------|------------------------------|
| <b>P.O.#</b>    | 129420    | <b>Latitude:</b>     | 37.907776 37° 54' 28" North  |
| <b>Project:</b> | A.B.Brown | <b>Longitude:</b>    | -87.707951 -87° 42' 29" West |
|                 |           | <b>UTM Zone:</b>     | Zone 16 North                |
|                 |           | <b>UTM X Meters:</b> | 437765.64                    |
|                 |           | <b>UTM Y Meters:</b> | 4195818.89                   |
|                 |           | <b>Elevation:</b>    | 453.00' above sea level      |

**Maps Provided:**

2013  
1981  
1957  
1916  
1914

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## **Topo Sheet Key**

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### **2013 Source Sheets**



West Franklin  
2013  
7.5-minute, 24000

### **1981 Source Sheets**



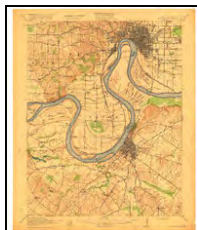
West Franklin  
1981  
7.5-minute, 24000  
Aerial Photo Revised 1974

### **1957 Source Sheets**



West Franklin  
1957  
7.5-minute, 24000  
Aerial Photo Revised 1956

### **1916 Source Sheets**



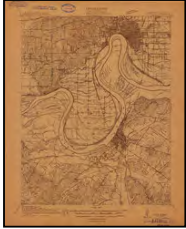
Henderson  
1916  
15-minute, 62500

## ***Topo Sheet Key***

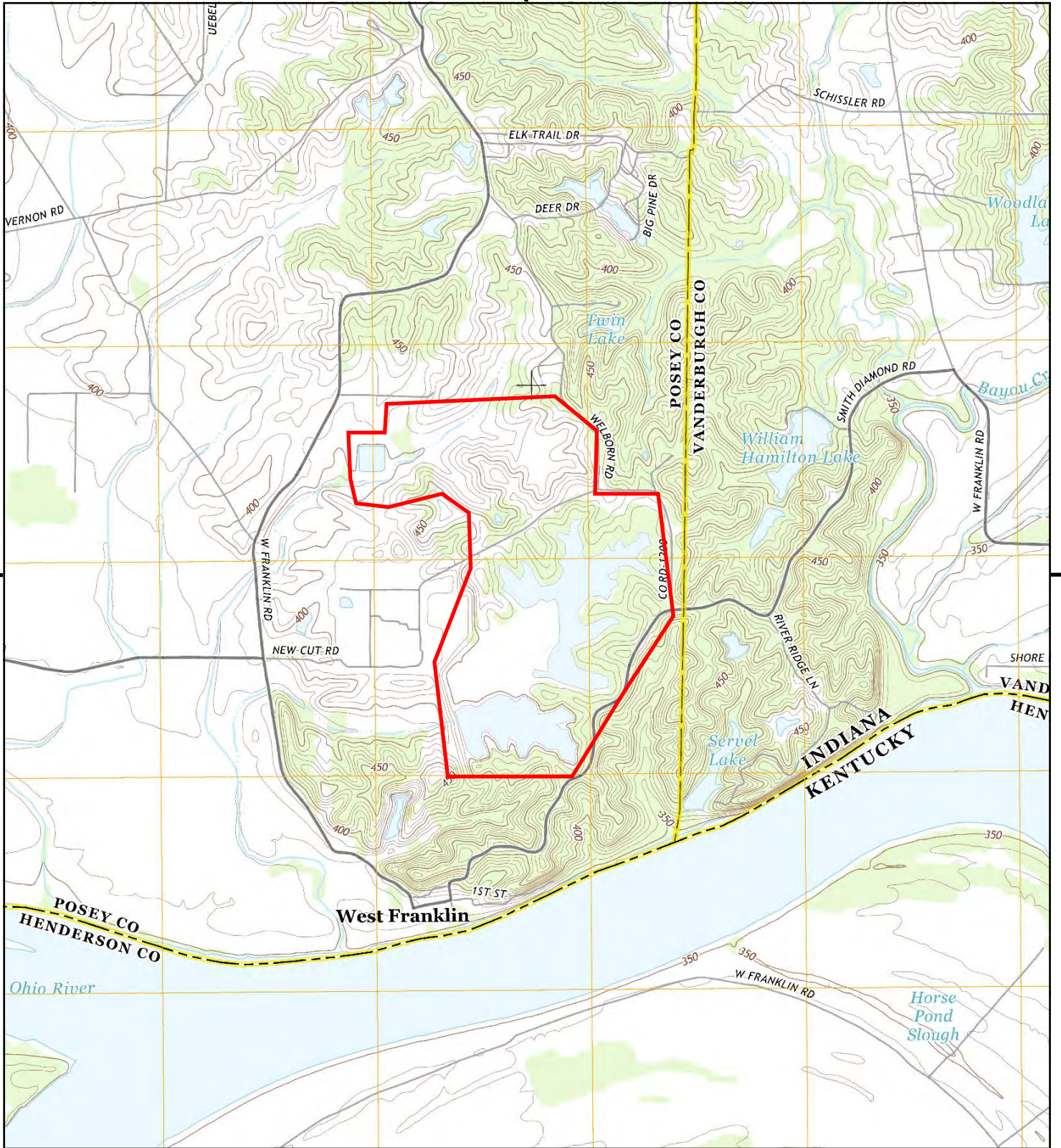
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This EDR Topo Map Report is based upon the following USGS topographic map sheets.

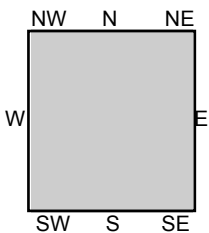
### **1914 Source Sheets**



Henderson  
1914  
15-minute, 48000



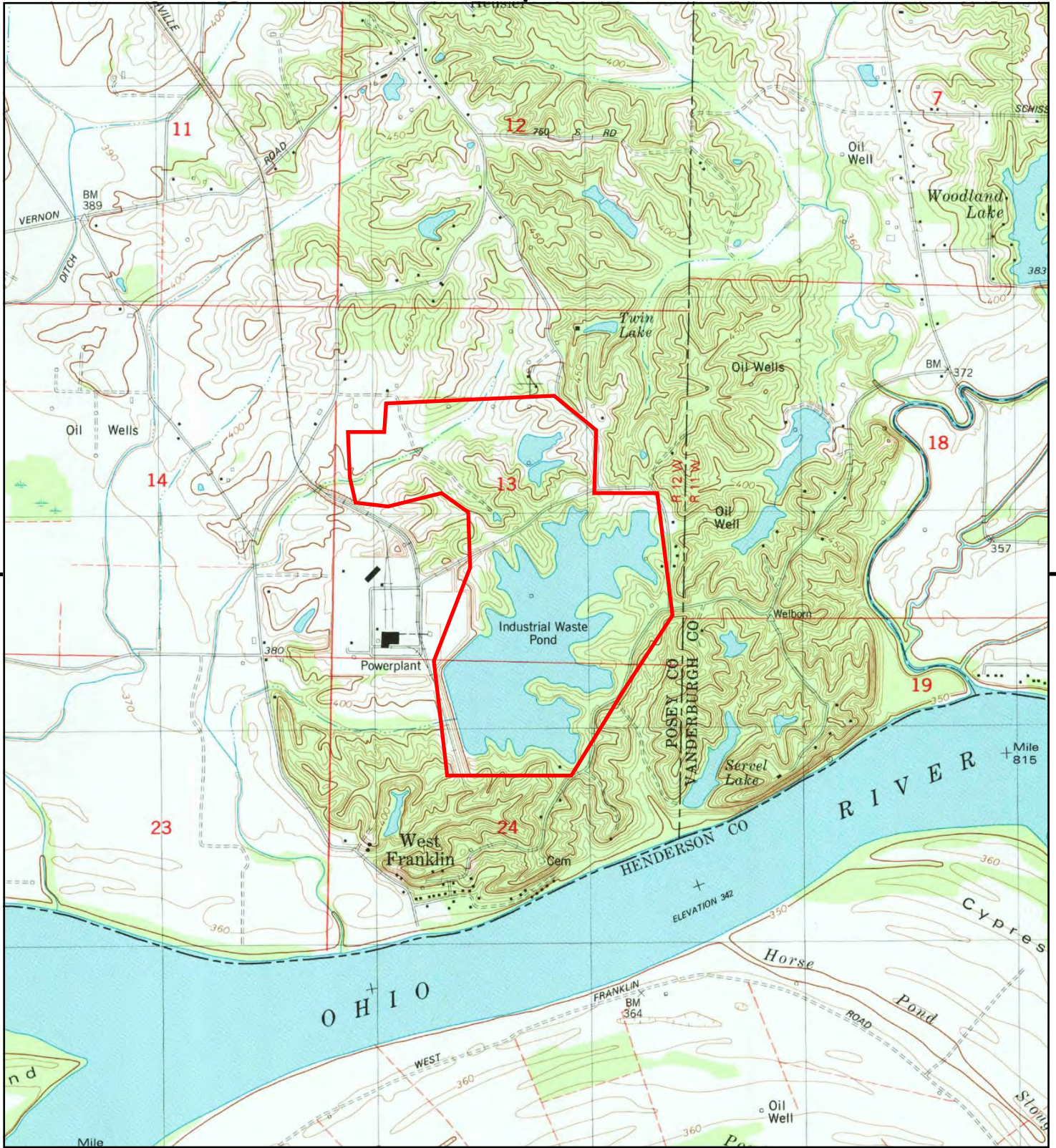
This report includes information from the following map sheet(s).



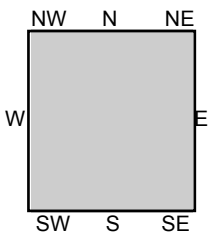
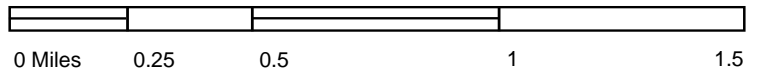
TP, West Franklin, 2013, 7.5-minute

**SITE NAME:** A.B.Brown Generating Station  
**ADDRESS:** 8511 Welborn Rd  
 Evansville, IN 47712  
**CLIENT:** Haley & Aldrich, Inc.





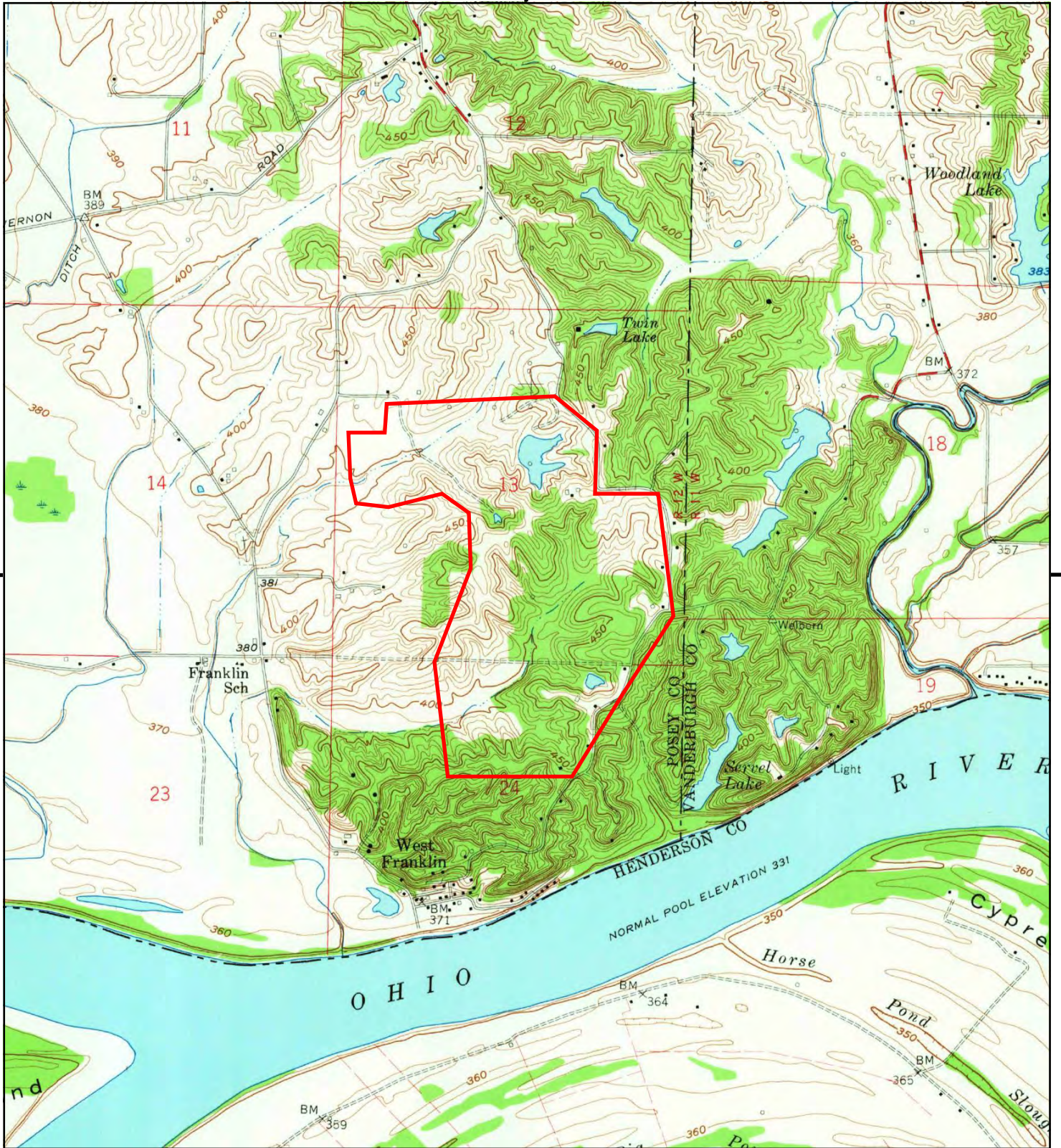
This report includes information from the following map sheet(s).



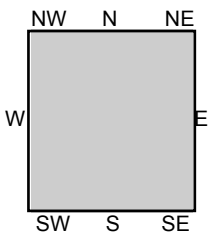
TP, West Franklin, 1981, 7.5-minute

**SITE NAME:** A.B. Brown Generating Station  
**ADDRESS:** 8511 Welborn Rd  
 Evansville, IN 47712  
**CLIENT:** Haley & Aldrich, Inc.





This report includes information from the following map sheet(s).



TP, West Franklin, 1957, 7.5-minute

**SITE NAME:** A.B.Brown Generating Station  
**ADDRESS:** 8511 Welborn Rd  
 Evansville, IN 47712  
**CLIENT:** Haley & Aldrich, Inc.





This report includes information from the following map sheet(s).

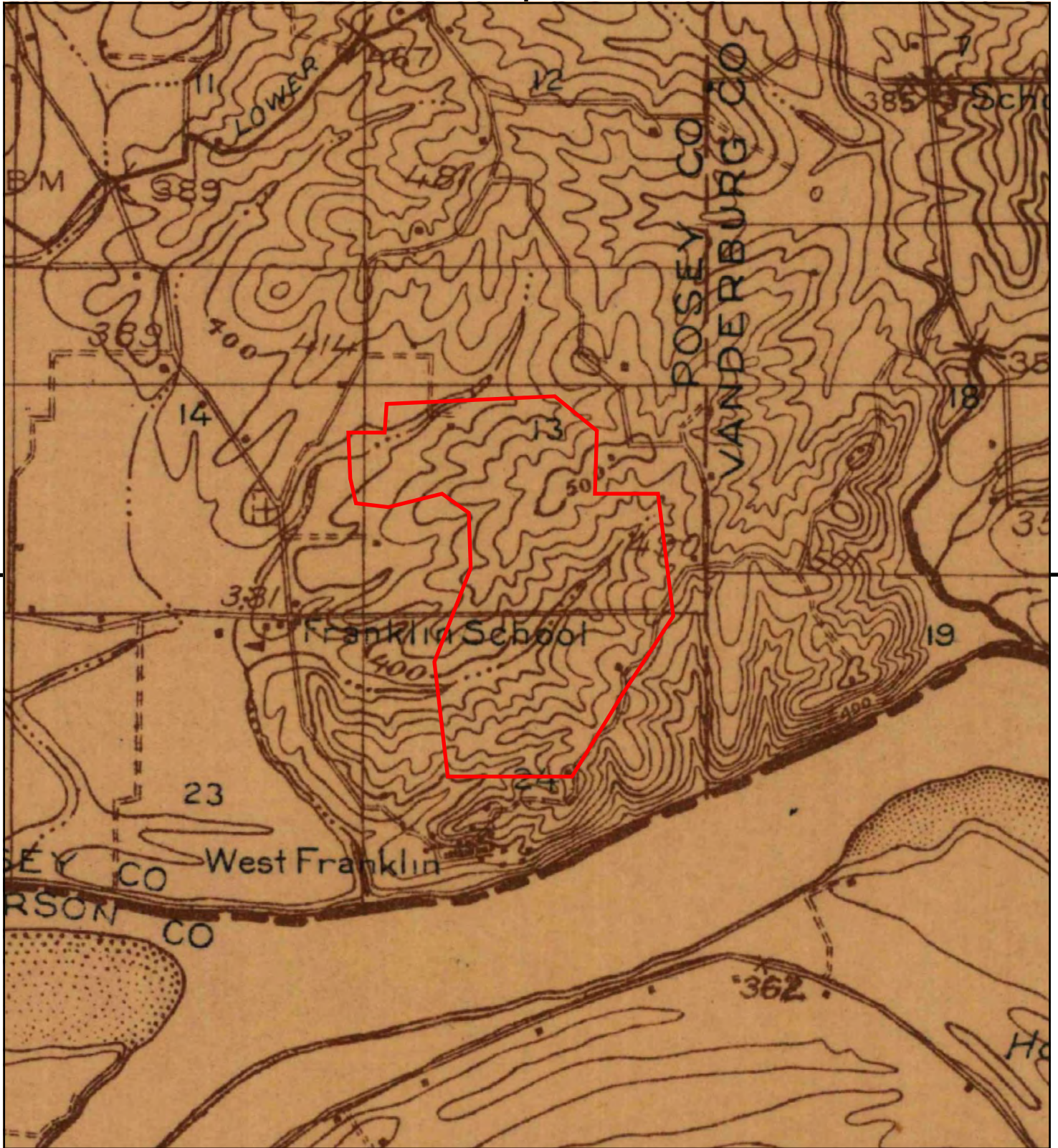


TP, Henderson, 1916, 15-minute

SITE NAME: A.B.Brown Generating Station  
 ADDRESS: 8511 Welborn Rd  
 Evansville, IN 47712  
 CLIENT: Haley & Aldrich, Inc.







This report includes information from the following map sheet(s).



TP, Henderson, 1914, 15-minute

SITE NAME: A.B.Brown Generating Station  
 ADDRESS: 8511 Welborn Rd  
 Evansville, IN 47712  
 CLIENT: Haley & Aldrich, Inc.





**A.B.Brown Generating Station**

8511 Welborn Rd

Evansville, IN 47712

Inquiry Number: 5203791.9

March 01, 2018

## The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

**Site Name:**

A.B.Brown Generating Station  
 8511 Welborn Rd  
 Evansville, IN 47712  
 EDR Inquiry # 5203791.9

**Client Name:**

Haley & Aldrich, Inc.  
 465 Medford Street  
 Boston, MA 02129  
 Contact: Julia Scott



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**Search Results:**

| <u>Year</u> | <u>Scale</u> | <u>Details</u>                   | <u>Source</u> |
|-------------|--------------|----------------------------------|---------------|
| 2014        | 1"=875'      | Flight Year: 2014                | USDA/NAIP     |
| 2010        | 1"=875'      | Flight Year: 2010                | USDA/NAIP     |
| 2007        | 1"=875'      | Flight Year: 2007                | USDA/NAIP     |
| 1998        | 1"=875'      | Acquisition Date: April 06, 1998 | USGS/DOQQ     |
| 1993        | 1"=875'      | Flight Date: April 17, 1993      | USGS          |
| 1983        | 1"=875'      | Flight Date: March 14, 1983      | USGS          |
| 1973        | 1"=875'      | Flight Date: March 01, 1973      | USGS          |
| 1956        | 1"=875'      | Flight Date: April 05, 1956      | USGS          |
| 1950        | 1"=875'      | Flight Date: April 16, 1950      | USGS          |

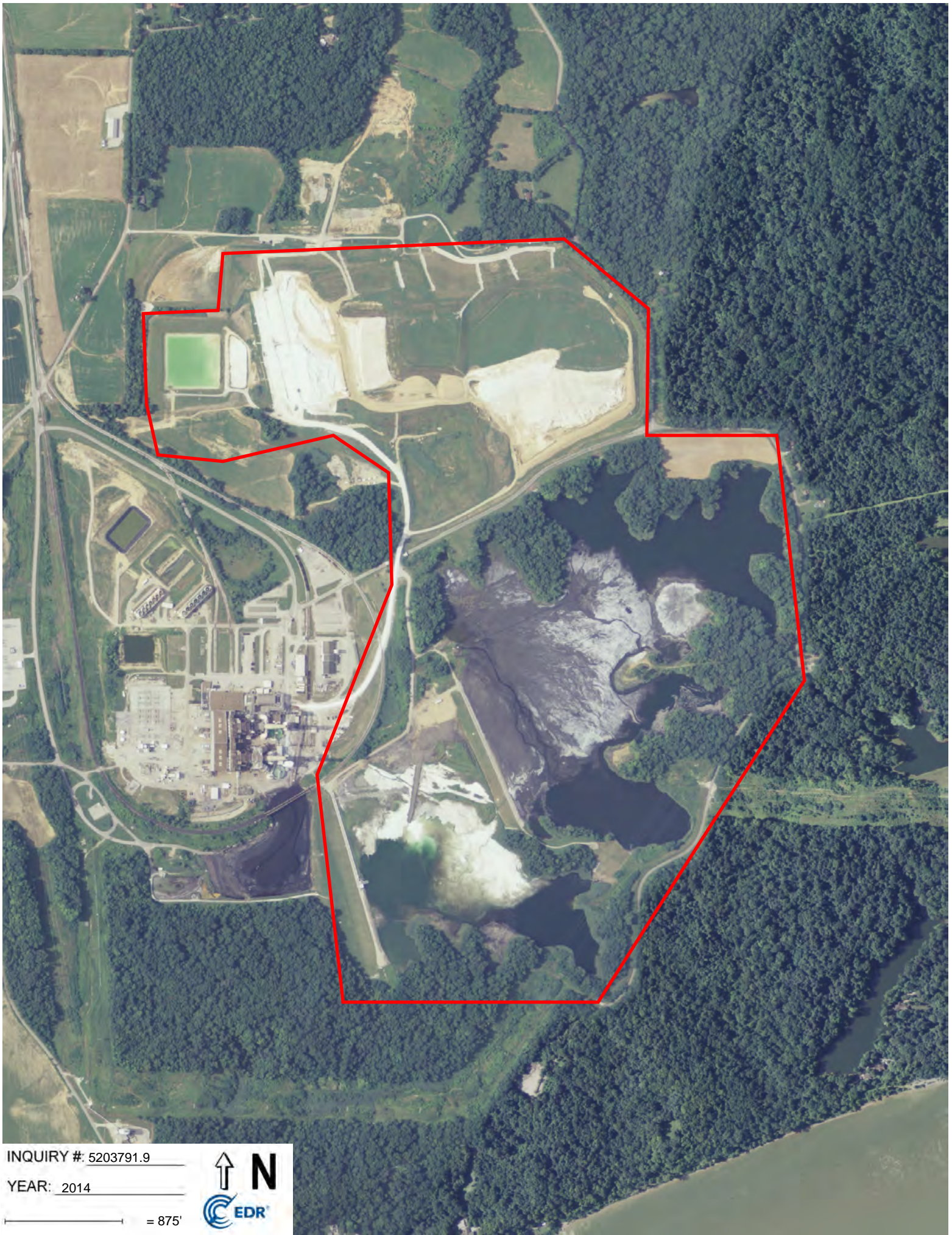
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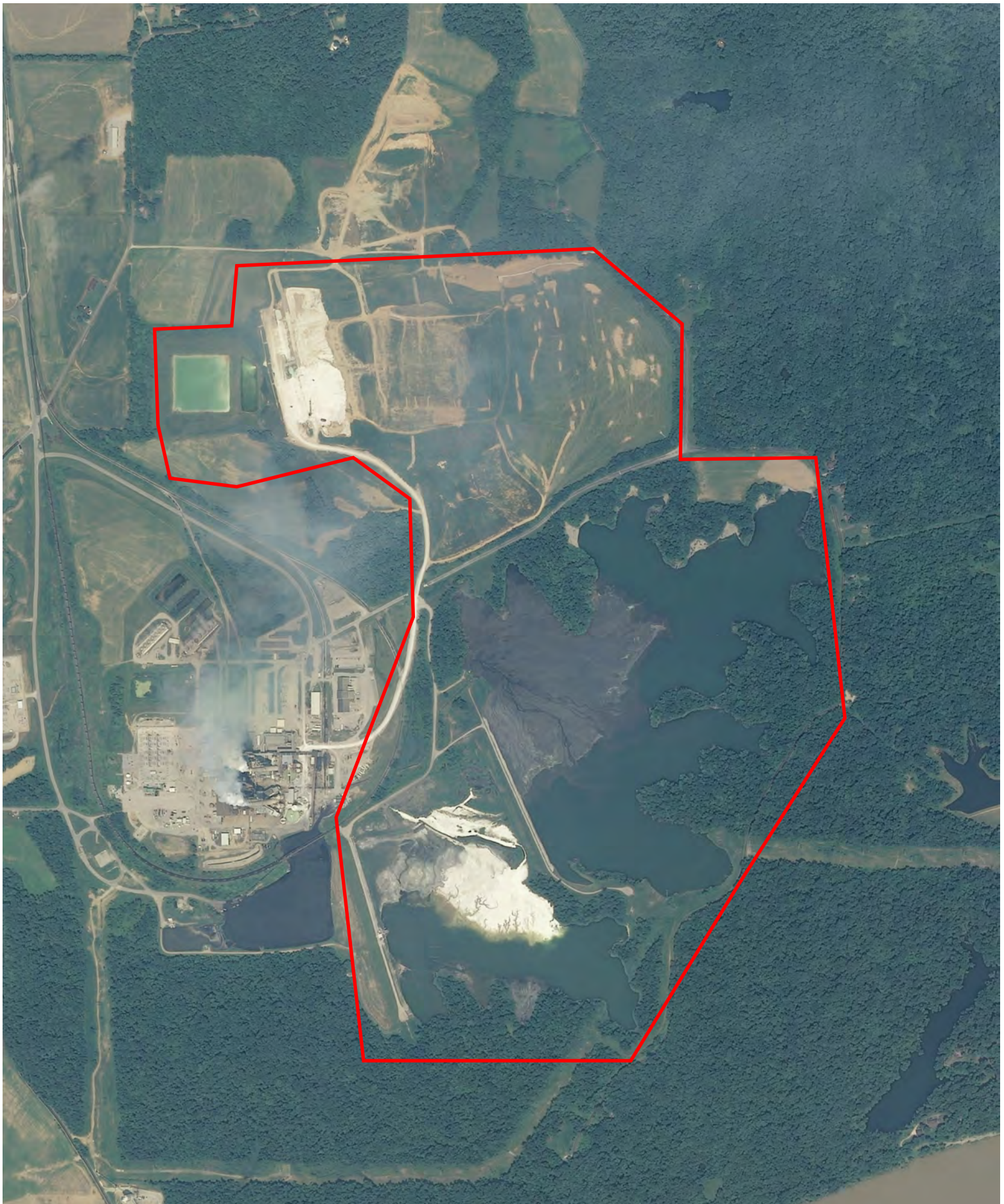


INQUIRY #: 5203791.9

YEAR: 2014

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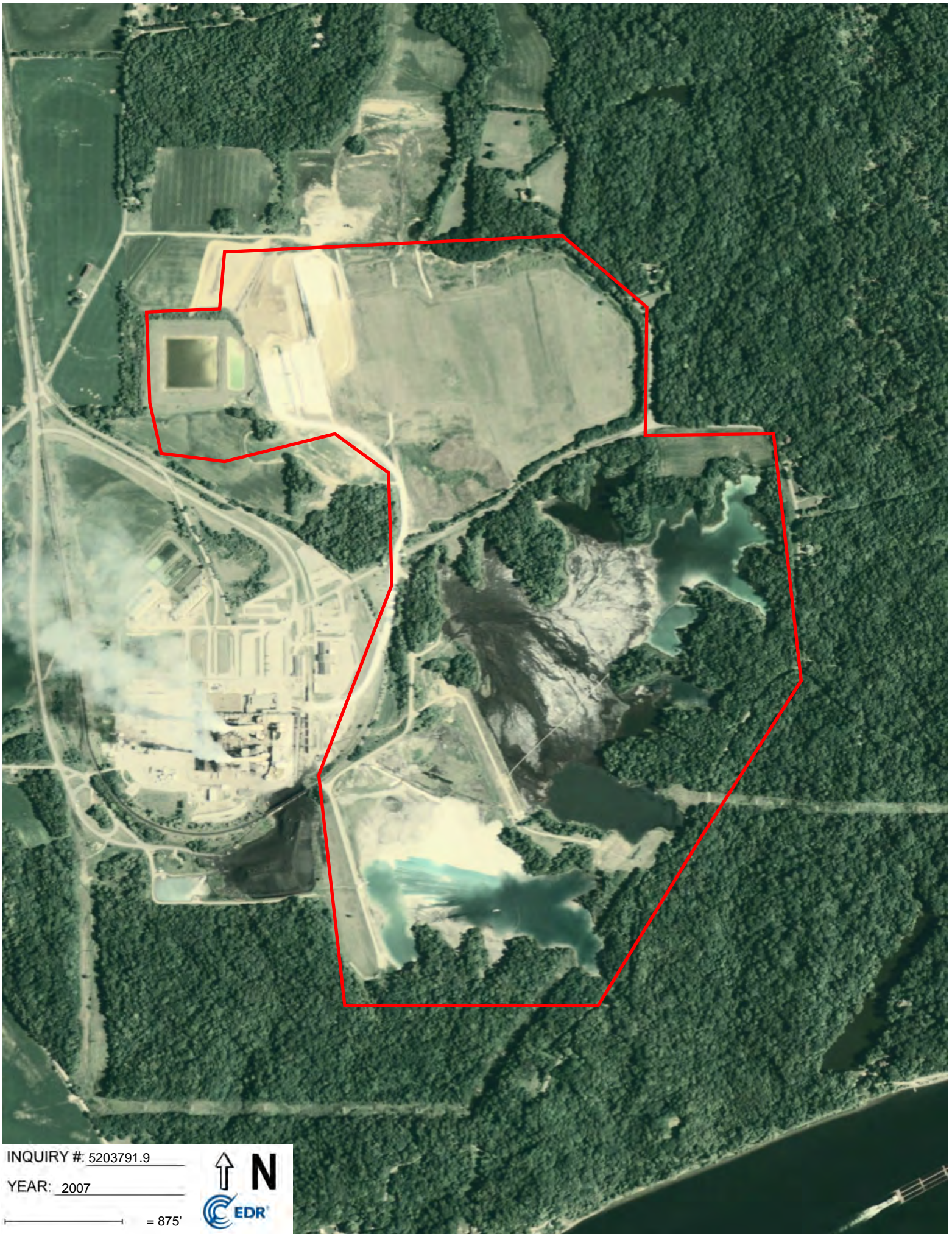


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YEAR: 2010

— = 875'





INQUIRY #: 5203791.9

YEAR: 2007

— = 875'





INQUIRY #: 5203791.9

YEAR: 1998

— = 875'





INQUIRY #: 5203791.9

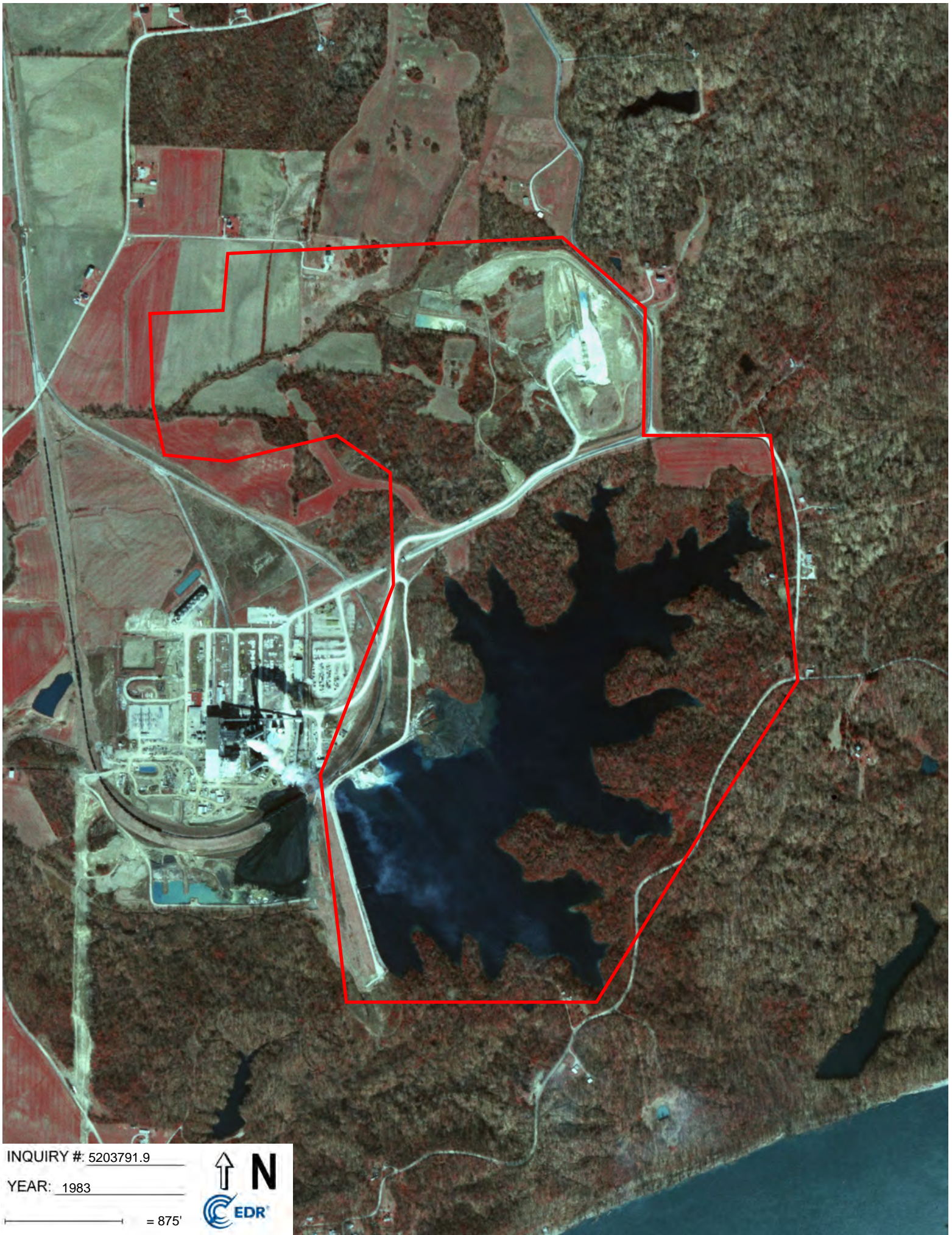
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— = 875'



Subject boundary not shown because it exceeds image extent or image is not georeferenced.



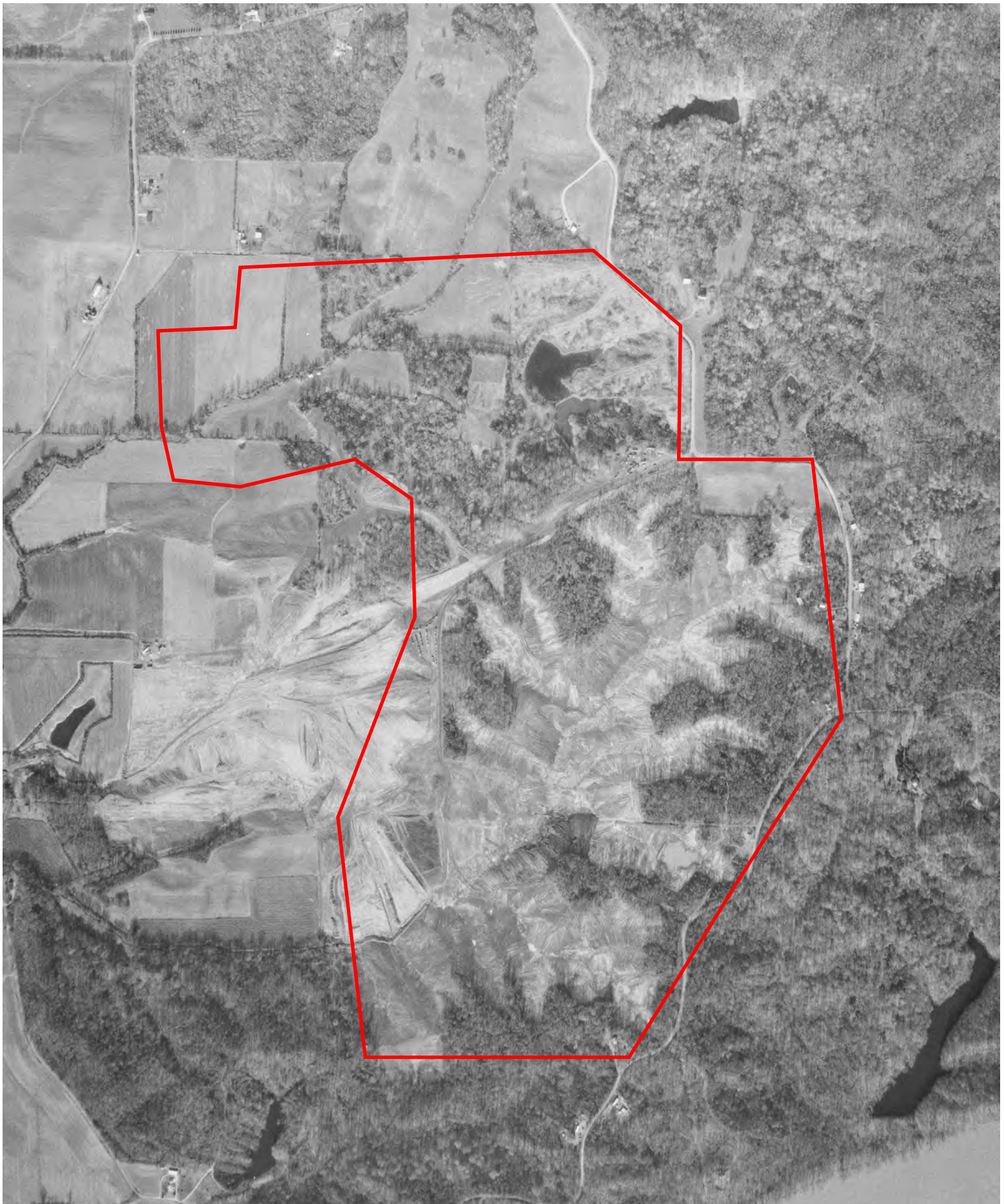


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— = 875'



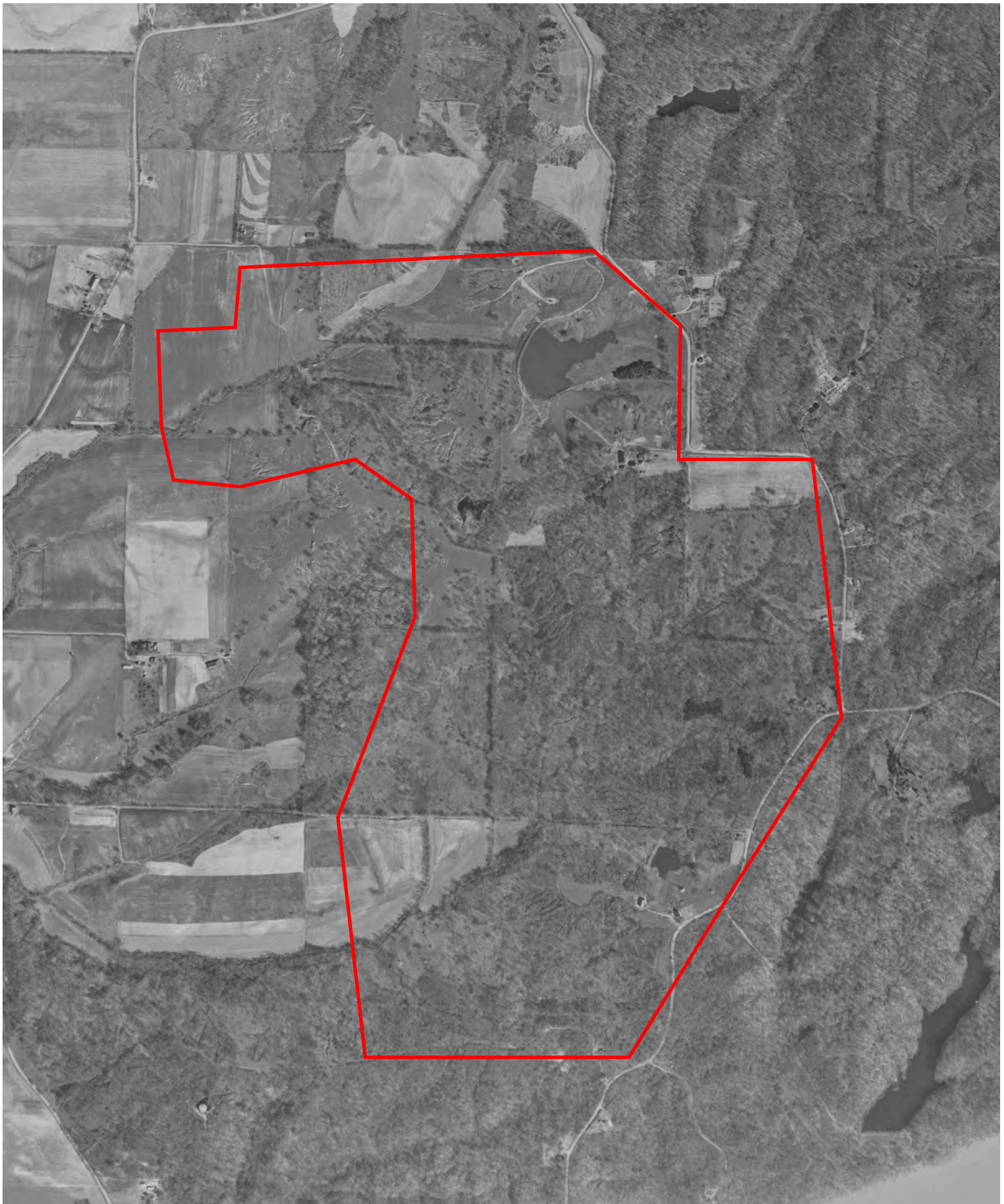


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YEAR: 1973

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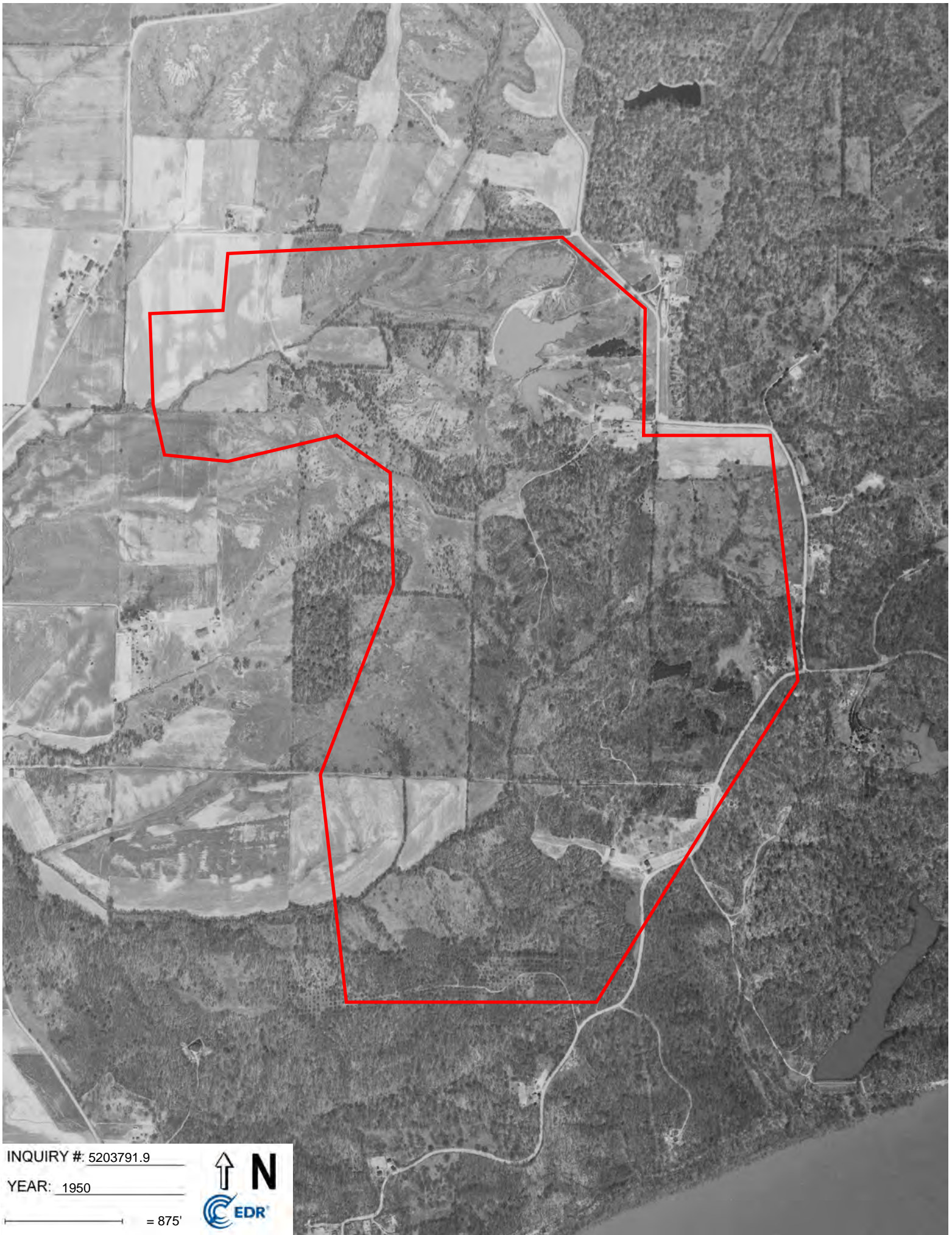


INQUIRY #: 5203791.9

YEAR: 1956

— = 875'





INQUIRY #: 5203791.9

YEAR: 1950

— = 875'



**A.B.Brown Generating Station**

8511 Welborn Rd  
Evansville, IN 47712

Inquiry Number: 5203791.5  
March 05, 2018

# The EDR-City Directory Image Report

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*Thank you for your business.*  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## EXECUTIVE SUMMARY

### DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

### RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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### RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

| <u>Year</u> | <u>Target Street</u>                | <u>Cross Street</u>      | <u>Source</u>            |
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| 2014        | <input checked="" type="checkbox"/> | <input type="checkbox"/> | EDR Digital Archive      |
| 2010        | <input checked="" type="checkbox"/> | <input type="checkbox"/> | EDR Digital Archive      |
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| 2000        | <input checked="" type="checkbox"/> | <input type="checkbox"/> | EDR Digital Archive      |
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| 1992        | <input type="checkbox"/>            | <input type="checkbox"/> | EDR Digital Archive      |
| 1989        | <input type="checkbox"/>            | <input type="checkbox"/> | Polk's City Directory    |
| 1984        | <input type="checkbox"/>            | <input type="checkbox"/> | Polk's City Directory    |
| 1979        | <input type="checkbox"/>            | <input type="checkbox"/> | Polk's City Directory    |
| 1974        | <input type="checkbox"/>            | <input type="checkbox"/> | Polk's City Directory    |
| 1969        | <input type="checkbox"/>            | <input type="checkbox"/> | Polk's City Directory    |
| 1964        | <input type="checkbox"/>            | <input type="checkbox"/> | Polk's City Directory    |
| 1961        | <input type="checkbox"/>            | <input type="checkbox"/> | Polk's City Directory    |
| 1941        | <input type="checkbox"/>            | <input type="checkbox"/> | Bennett's City Directory |
| 1924        | <input type="checkbox"/>            | <input type="checkbox"/> | Bennett's City Directory |

## EXECUTIVE SUMMARY

Year      Target Street      Cross Street      Source



## FINDINGS

### TARGET PROPERTY STREET

8511 Welborn Rd  
Evansville, IN 47712

Year            CD Image            Source

### S WELBORN RD

|      |       |                          |                             |
|------|-------|--------------------------|-----------------------------|
| 1995 | pg A5 | EDR Digital Archive      |                             |
| 1992 | -     | EDR Digital Archive      | Street not listed in Source |
| 1989 | -     | Polk's City Directory    | Street not listed in Source |
| 1984 | -     | Polk's City Directory    | Street not listed in Source |
| 1979 | -     | Polk's City Directory    | Street not listed in Source |
| 1974 | -     | Polk's City Directory    | Street not listed in Source |
| 1969 | -     | Polk's City Directory    | Street not listed in Source |
| 1964 | -     | Polk's City Directory    | Street not listed in Source |
| 1961 | -     | Polk's City Directory    | Street not listed in Source |
| 1941 | -     | Bennett's City Directory | Street not listed in Source |
| 1924 | -     | Bennett's City Directory | Street not listed in Source |

### WELBORN RD

|      |       |                          |                             |
|------|-------|--------------------------|-----------------------------|
| 2014 | pg A1 | EDR Digital Archive      |                             |
| 2010 | pg A2 | EDR Digital Archive      |                             |
| 2005 | pg A3 | EDR Digital Archive      |                             |
| 2000 | pg A4 | EDR Digital Archive      |                             |
| 1995 | -     | EDR Digital Archive      | Street not listed in Source |
| 1992 | -     | EDR Digital Archive      | Street not listed in Source |
| 1989 | -     | Polk's City Directory    | Street not listed in Source |
| 1984 | -     | Polk's City Directory    | Street not listed in Source |
| 1979 | -     | Polk's City Directory    | Street not listed in Source |
| 1974 | -     | Polk's City Directory    | Street not listed in Source |
| 1969 | -     | Polk's City Directory    | Street not listed in Source |
| 1964 | -     | Polk's City Directory    | Street not listed in Source |
| 1961 | -     | Polk's City Directory    | Street not listed in Source |
| 1941 | -     | Bennett's City Directory | Street not listed in Source |
| 1924 | -     | Bennett's City Directory | Street not listed in Source |

## FINDINGS

### CROSS STREETS

No Cross Streets Identified

## **City Directory Images**

**WELBORN RD 2014**

|      |                              |
|------|------------------------------|
| 7940 | OCCUPANT UNKNOWN,            |
| 8500 | BURGDORF, PAULINE L          |
| 8520 | THOMAS, RANDALL B            |
| 8590 | JOSEY WILDER ENTERPRISES INC |
|      | JOSEY, MICHAEL W             |
|      | STUCCO HOUSE                 |
| 8600 | BIRDWELL, WILLIAM B          |
| 8622 | OCCUPANT UNKNOWN,            |

**WELBORN RD 2010**

|      |                   |
|------|-------------------|
| 7940 | JORDAN, KAREN M   |
| 8520 | THOMAS, RANDALL B |
| 8590 | JOSEY MICHAEL     |
|      | JOSEY, MICHAEL W  |
|      | STUCCO HOUSE      |
| 8600 | WILDER, DONNA E   |
| 8622 | HINES, MARCIA L   |



-

**WELBORN RD 2005**

7700 WIRTHWEIN, ERIC  
7940 WILLIAMS, RICK A  
8300 WEBB, M  
8500 JOURDAN, TIM W  
8590 JOSEY, MICHAEL W  
8622 HINES, MARCIA L



-

**WELBORN RD 2000**

|      |                           |
|------|---------------------------|
| 7700 | GIES, ANDREW              |
| 8300 | MCCORMICK, JOHN           |
| 8311 | SOUTHERN INDIANA MINERALS |
| 8590 | JOSEY, MICHAEL W          |
| 8600 | DERRINGTON, ROB           |



-

**S WELBORN RD 1995**

7701 SOUTHWIND OSTRICH RANCH INC

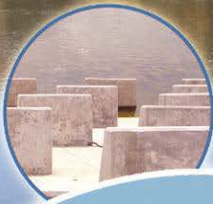


**APPENDIX B**

**IDEM 2016 Integrated Water Monitoring and Assessment Report**



Indiana Department of  
Environmental Management



Indiana Integrated Water  
Monitoring and Assessment Report  
to the U.S. EPA

# 2016



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## EXECUTIVE SUMMARY

Section 305(b) of the federal Clean Water Act (CWA) requires states to prepare and submit a water quality assessment report of state water resources to the U.S. Environmental Protection Agency (U.S. EPA) every two years. States are also required to develop and submit a list of impaired waters to U.S. EPA for approval under CWA Section 303(d).

IDEM used agency-collected data and other data collected by other organizations to develop this report. IDEM's solicitation, review and use of external data are described in detail in the section of this report entitled, Assessment Methodology and Summary Data. IDEM data used to develop this report were collected in accordance with IDEM's 2010 water quality monitoring strategy (WQMS), which describes a nine-year basin rotation approach to monitoring for CWA purposes. Using this strategy, one basin (approximately 10% of the state) is monitored each year, which provides a comprehensive statewide data set for assessments every nine years. The most current and readily existing available data were reviewed for the purposes of making 305(b) assessment and 303(d) listing decisions using IDEM's consolidated assessment and listing methodology (CALM).

A summary of IDEM's methods for determining support of beneficial uses is provided in the Assessment Methodology and Summary Data Section. IDEM's CALM is provided in its entirety in Appendix N. Indiana's water quality standards provide the basis for IDEM's CWA Section 305(b) water quality assessments, designating the beneficial uses that Indiana waters must support. Of the beneficial uses designated in the state's water quality standards, IDEM assesses aquatic life use support, recreational use support and drinking water for surface waters that serve as a public water supply. IDEM also assesses waterbodies for fish consumption. Although there are additional uses designated in Indiana's water quality standards, IDEM limits its assessments

to these four uses because the criteria in place to protect them are more stringent than those necessary to protect other uses. Thus, by protecting these four uses, other uses such as agricultural and industrial uses are also protected.

IDEM conducts water quality assessments using both statistical and empirical methods. Using data from its Probabilistic Monitoring Program, IDEM determines statistically for each of Indiana's nine major basins the percentage of river and stream miles that are meeting recreational and aquatic life uses and the percentage likely to be impaired. While the results from IDEM's comprehensive assessments cannot be applied to specific waterbodies, they provide important information regarding the overall water quality condition of waters in each basin. IDEM also uses the data it collects through its Probabilistic Monitoring Program and other available data to make reach-specific assessments of rivers and streams for recreational and aquatic life uses. Other empirical assessments include waterbody-specific assessments for fish consumption and public water supply.

IDEM completed its first comprehensive aquatic life use support assessments for the entire state in 2002 and reported similar information for recreational uses for the first time in 2012. IDEM published its first Integrated Report (IR) in 2002, which has been revised biennially since then. The 2016 IR provides the most recent comprehensive report on Indiana water quality to date.

Results from IDEM's comprehensive recreational and aquatic life use support assessments are provided in this report (Appendix E). Cumulative results for IDEM's stream-specific assessments are summarized in Table 1 (Appendix A). Approximately 68 percent of the 37,693 stream miles assessed for aquatic life use were found to be fully supporting. Approximately 26 percent of the 31,683 stream miles assessed support full body contact recreational use. Almost all of Indiana's 59 miles of Lake Michigan shoreline outside the Indiana Harbor fully supports aquatic life use, while only 7% of the shoreline waters support full body contact recreational use.

Causes of nonsupport (impairment) are included in this report for each waterbody type including flowing waters (rivers and streams) and non-flowing waters (lakes and reservoirs). Lake Michigan and its shoreline in Indiana are also discussed in this report. Pathogens are the top cause of stream impairments, impacting more than 23,000 miles of streams. Polychlorinated biphenyl (PCB) in fish tissue impacts more than 4,900 miles of streams while mercury in fish tissue impacts nearly 760 miles. Nearly 8,300 stream miles also have biological communities with measurable adverse response to pollutants.

Potential sources impacting Indiana waters include nonpoint sources that impact 16,040 miles of streams, while unknown sources impact almost 10,000 miles of streams. IDEM has several programs in place to address nonpoint source pollution. The Nonpoint Source Program and the Total Maximum Daily Load Program work together to facilitate restoration of impaired waters by locally-led groups committed to improving Indiana's water resources. IDEM's Watershed Specialists promote the holistic watershed approach by working closely with these groups to ensure they have the resources and information they need to succeed in their restoration efforts.



## INTRODUCTION

States are required by the Clean Water Act (CWA) to prepare a water quality assessment report of state water resources and a list of impaired waters to submit to the U.S. Environmental Protection Agency (EPA) every two years. In 2002, the U.S. EPA encouraged states to combine the information that was previously submitted as two separate reports – the 305(b) water quality monitoring and assessment report and the 303(d) list of impaired waters – into one integrated report following the two-year schedule mandated in CWA Section 305(b).

The Indiana Department of Environmental Management (IDEM), Office of Water Quality (OWQ) publishes the Indiana Integrated Water Quality Monitoring and Assessment Report (IR) every two years. Using U.S. EPA's integrated format, Indiana's IR contains two lists – the Consolidated List and the 303(d) List of Impaired Waters. While they differ in purpose and scope, together they provide a comprehensive assessment of surface water quality conditions throughout the state of Indiana. The Consolidated List contains comprehensive statistical assessments for all major basins in the state, which is developed to fulfill CWA Section 305(b) requirements. The 303(d) List of Impaired Waters is a subset of the Consolidated List and identifies only those waters that are impaired and for which total maximum daily loads (TMDLs) are required per CWA Section 303(d). In accordance with U.S. EPA guidance, the IR also contains information on trends and trophic state of Indiana's lakes pursuant to CWA Section 314 as well as information pertaining to Indiana's ground water and wetland resources.

IDEM's OWQ prepared the 2016 IR following the guidelines provided by U.S. EPA (1997a, 1997b, 2005, 2006a, 2009a, 2011, 2013 & 2015). This report for 2016 meets the reporting requirements articulated in Sections 305(b), 303(d) and 314 of the CWA.

Most of the data used in this report come from IDEM's Probabilistic Monitoring Program, which employs a stratified random sampling (probabilistic) design to generate a representative set of sampling locations for each basin. IDEM uses probabilistic results to make comprehensive use support assessments, which are statistically valid statements about the overall water quality within a given watershed. The same data used to make comprehensive statistical assessments for a given basin are also applied to the specific stream or stream reach from which they were collected in order to make site-specific assessments.

In addition to data from the Probabilistic Monitoring Program, results from IDEM's targeted monitoring programs were used to make empirical, waterbody-specific assessments included in this report, including the Fixed Station Monitoring Program, the Watershed Characterization (formerly Baseline) Monitoring Program, the Fish Tissue Contaminant Program, and the Special Studies Program. Results from monitoring conducted by Indiana-University's Indiana Clean Lakes Program, which operates under a contractual agreement with funding from IDEM, were also used.

IDEM stores assessment information – decisions about water quality based on the data collected – in the Assessment Database. The Assessment Database is continually updated with new assessment information in order to facilitate the transmittal to U.S. EPA of the most up-to-date and accurate information concerning Indiana waters.

## BACKGROUND

Indiana is located on the eastern edge of the North American great interior plains. The North - South continental divide traverses through northern Indiana, draining watersheds into the Great Lakes basin and the Mississippi River and Ohio River systems. Surface water in the northern one-quarter of the state flows north into the Great Lakes and then through the St. Lawrence River to the Atlantic Ocean. The southern three-quarters of the state drains into the Ohio River or Illinois River, flows into the Mississippi River and then south to the Gulf of Mexico. Indiana has approximately 63,130 miles of rivers, streams, ditches and drainage ways based on the Indiana Reach Index, which is keyed to the U.S. Geological Survey's high resolution (1:24,000 scale) National Hydrography Dataset (UGSG, 2014). State water types are described in Table 2 (Appendix A). Metadata and definitions for this report are located in Appendix C.

### **WATER POLLUTION CONTROL IN INDIANA**

Water pollution control authority is shared by several agencies in Indiana. IDEM holds authority to carry out several Clean Water Act (CWA) programs, including Sections 305(b), 303(d), 314, and others. The Indiana State Department of Health (ISDH) has regulatory authority for septic systems, and the Office of the Indiana State Chemist (OISC) regulates pesticides and nutrients.

The State Soil Conservation Board (SSCB), Indiana State Department of Agriculture (ISDA), and the Indiana Department of Natural Resources (IDNR) – including its Lake and River Enhancement (LARE) Program and its Lake Michigan Coastal Program (LMCP) – administer voluntary and grant programs to help abate various types of nonpoint source pollution. Indiana also partners with many federal agencies and nonprofit organizations in order to accomplish its work, including assistance from the United States Geological Survey (USGS), the United States Environmental Protection Agency (USEPA), the United States Department of Agriculture (USDA), the United States Fish and Wildlife Service (USFWS), the United States Forest Service (USFS), and the National Park Service. Additional research, technical and funding assistance is provided by Purdue University and its Extension Service, Indiana University, The Nature Conservancy, the Indiana Water Monitoring Council, county soil and water conservation districts, and local non-profit and ad-hoc watershed groups.

### **IDEM'S WATERSHED APPROACH**

IDEM employs a watershed approach in its Clean Water Act (CWA) programs. This approach is hydrologically well defined and geographically focused, providing an effective framework to address water quality issues by taking into account land, air and water stressors. Key benefits of the watershed approach are that it integrates multiple programs through coordination of public, private, and not-for-profit stakeholders and leverages limited resources to address priority concerns.

The foundation of IDEM's watershed approach is internal and external collaboration across program areas through timely and effective communication and adaptive management. IDEM's work with other state and federal agencies and other external organizations is described in more detail in later sections of this report.

Internally, IDEM's senior staff, including the commissioner, meets weekly to discuss progress on priorities as well as emerging concerns and then relays this information to IDEM's Office of Water Quality (OWQ) managers at their weekly meeting. Cross-program teams continually work to develop strategies and work plans that ensure internal resources are focused on addressing the most significant environmental issues affecting water quality.

IDEM's water quality monitoring also employs a watershed approach. IDEM adopted a statewide rotating basin approach to watershed monitoring in 1996 in order to regularly update the water quality information for the entire state. From 1996-2010, IDEM monitored watersheds throughout the state on a five-year rotation, which provided a complete update once every five years.

In 2010, IDEM revised its water monitoring strategy and began using a nine-year rotating basin approach in 2011, which will result in a comprehensive and updated data set for the entire state in 2019. The water quality assessments included in this report are cumulative and include all waterbodies that have been assessed to date in all basins of the state. Figure 1 (Appendix B) shows the monitoring locations for all of IDEM's surface water sampling programs and illustrates the sampling density achieved through IDEM's water quality monitoring strategy over

the past five years (2011-2015).

## **IDEM'S OFFICE OF WATER QUALITY PROGRAMS**

IDEM's Clean Water Act (CWA) programs work together to protect and improve the quality of Indiana's surface waters. Indiana's water quality standards, which are developed by the Office of Water Quality (OWQ) Water Quality Standards (WQS) program, provide the foundation for implementation of many of IDEM's CWA programs. IDEM's water monitoring programs provide much of the data necessary to conduct CWA Section 305(b) water quality assessments and to support the development of Indiana's 303(d) List of Impaired Waters and total maximum daily loads (TMDLs) required under Section 303(d) of the CWA.

Nonpoint source (NPS) pollution is addressed primarily through non-regulatory watershed management planning and implementation projects funded through IDEM's NPS Program and through the development of TMDLs for impaired waters. The agency's National Pollution Discharge Elimination System (NPDES) provides a robust regulatory program to control point sources of pollution to Indiana surface waters.

IDEM also works with the Indiana Finance Authority (IFA) to issue low cost loans to communities for infrastructure improvements to their wastewater and drinking water facilities. Many of these loans go to municipalities in watersheds where water quality impairments have been identified and for which total maximum daily loads (TMDLs) have been approved by the U.S. Environmental Protection Agency (EPA). It is anticipated that in time these projects will result in measureable improvements in water quality.

### *Water Quality Standards Program*

Indiana's WQS can be found in 327 IAC Article 2. They were first adopted into the Indiana Administrative Code (IAC) in 1986 and underwent significant revisions in 1990. At that time, Indiana adopted numeric criteria into its WQS for all pollutants for which U.S. EPA had developed ambient water quality criteria for the protection of either human health or aquatic life. Procedures for developing additional criteria were also included in these rules.

Beneficial uses, which are the uses that the waterbody should support, were also established at that time. With a few exceptions, all waters in Indiana were designated for warm water aquatic life use, full body contact recreational use, public water supply<sup>1</sup> (where there are drinking water

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<sup>1</sup>There are 34 streams or stream reaches designated for limited use in 327 IAC 2-1-11(a) and 327 IAC 2-1-1.5-19(a). These waters so designated after use attainability analyses confirmed their inability to fully support aquatic life use due to natural low flow conditions throughout much of the year. In 2007, another limited use designation was added to Indiana's WQS in 327 IAC 2-1-3.1, which is applicable only to waters receiving wet weather discharges from combined sewer overflows (CSOs). Currently, no waters are so designated because to date, no communities with CSOs have completed the steps required to receive this designation. Indiana's WQS also include waters that are designated as outstanding state resources in 327 IAC 2-1.5-19(b), 327 IAC 2-1.3-3(d) and 327 IAC 2-1-11(b). Thus, all waters in the state are currently designated for uses consistent with the requirements of the CWA or U.S. EPA's implementing regulations and have criteria appropriate to determine support of these uses.

intakes from surface waters), industrial uses and agricultural uses. In addition, certain waters, where natural temperature conditions will support cold water fisheries, were designated for put-and-take (stocked) trout fishing. For those waters where multiple uses exist, the criteria that support the most stringent uses must be met. The most stringent criteria in Indiana's WQS are those established to protect aquatic life use, recreational uses for all Indiana waters and where applicable, public water supply. IDEM's water quality assessments focus primarily on these uses and are based on the narrative and numeric criteria in the WQS established to protect them.

NPDES permits are also based on Indiana's WQS. In 1993, the rules and regulations that guide the implementation of Indiana's WQS through NPDES permits were extensively revised. Although this revision resulted in significant changes to these rules, only minor changes were made to Indiana's WQS.

With the issuance of the final Great Lakes Water Quality Guidance in 1995, IDEM began the process of revising the WQS and implementation regulations for those waters in Indiana's Great Lakes system. These revisions incorporated the various criteria and procedures identified in the guidance into Indiana's WQS. As a part of this rulemaking, IDEM also developed procedures to implement the antidegradation policy for all substances discharged to waters in the Great Lakes system. These revisions adopted by the Indiana Water Pollution Control Board became effective in February, 1997 and were subsequently submitted to the U.S. Environmental Protection Agency (EPA) for approval.

Ground water quality standards became effective in March 2002. Drinking water from public water supplies is regulated through the Safe Drinking Water Act (SDWA). IDEM defines public water supplies in accordance with the SDWA and has established minimum requirements regarding the information included in consumer confidence reports, which public water suppliers must deliver to their customers annually.

WQS development is an ongoing process. For example, 2008, in order to begin using fish tissue data to make its fish consumption assessments, IDEM had to first derive a numeric criterion for polychlorinated biphenyls (PCBs) in fish tissue. IDEM used U.S. EPA guidance for calculating screening values for target analytes, which provides the basis for developing water quality criteria for the protection of human health.

In 2012, Indiana formally adopted antidegradation standards and implementation procedures applicable to all waters of the state. These rules supersede previous antidegradation rules established in 1997, which applied only to the Great Lakes Basin. And in 2013, Indiana adopted revised chloride criteria developed by the WQS Program based on hardness and sulfate concentrations.

U.S. EPA has required all states to develop numeric water quality criteria for nutrients to support CWA Assessments and permit development. The agency has also issued guidance that appears to give states flexibility in the development of nutrient criteria if the state and U.S. EPA have agreed on a plan to accomplish this goal. Indiana is actively participating in this effort and has submitted a nutrient criteria development plan to U.S. EPA that includes a schedule for the development of nutrient criteria. This plan has been approved by U.S. EPA and is kept updated.

In accordance with the approved plan, IDEM is working with U.S. EPA Region 5 and the United States Geological Survey (USGS) to develop nutrient criteria for different water body types throughout the state. IDEM has worked collaboratively with the USGS in Indianapolis over the last 14 years to collect and analyze relevant stream data from waters throughout the state. Recent analyses of these data indicate that another study is warranted, this time collecting diurnal dissolved oxygen in addition to nutrient parameters for flowing streams. For lakes and reservoirs, data analysis was completed in 2008 by LimnoTech, Inc. IDEM then performed additional analyses on the data set to refine the nutrient benchmarks developed by LimnoTech. On June 30, 2010, IDEM issued a first notice in the Indiana Register announcing a rulemaking to formally incorporate numeric nutrient water quality criteria for lakes and reservoirs into Indiana's water quality standards. IDEM also developed a non-rule policy that went into effect on 12/12/2014 to limit total phosphorus discharge to 1 mg/L for wastewater treatment plants discharging  $\geq 1$  million gallons per day.

Currently, IDEM is planning revisions to the metals criteria in the WQS for the protection of aquatic life and human health. On March 5, 2014, IDEM issued a first notice in the Indiana Register announcing a rulemaking to formally incorporate revised water quality criteria for dissolved metals into Indiana's water quality standards. More information about this rulemaking can be found on IDEM's WQS website at: <http://in.gov/idem/cleanwater/2329.htm>.

IDEM has also collected considerable data on the macroinvertebrate and fish communities for many Indiana waters. A 2014 evaluation of IDEM's biological monitoring program revealed a need to select reference sites that are based on quantitative descriptions of non-biological characteristics (primarily land use and landscape condition); to refine macroinvertebrate assessment techniques; to update biological indices; and to establish a biological condition gradient to characterize the state of aquatic communities in Indiana waters at a finer resolution. IDEM has begun this work through a Section 106 Monitoring Initiative grant from the U.S. EPA.

#### *National Pollutant Discharge Elimination System Permit Program*

Point source pollution in Indiana is controlled primarily through permits issued by IDEM for discharges to surface water under the National Pollutant Discharge Elimination System (NPDES) Permit Program in IDEM's Permits Branch. Regulated facilities which discharge to waters of the state must apply for and receive a NPDES permit. Limitations in each permit are determined based on water quality criteria developed to protect all designated and existing uses of the receiving water body.



The Permits Branch issues individual (municipal, semi-public and industrial) NPDES permits. The program also issues industrial wastewater pretreatment permits to industries that discharge to municipal wastewater treatment plants. In addition, the Permits Branch issues general permits for:

- Hydrostatic testing
- Non-contact cooling
- Sand and gravel operations
- Petroleum product terminals
- Groundwater petroleum remediation systems
- Coal mines

There are currently 1194 active individual NPDES permits, 180 pretreatment permits, and 300 facilities covered by general permits.

The Permits Branch is also responsible for the review and approval of long term control plans (LTCPs) submitted by communities to reduce discharges from combined sewers. All of the combined sewer overflow communities for which IDEM is the lead regulating agency are currently under one of three enforceable mechanisms (permit, agreed order or state judicial agreement). These mechanisms are in place to help implement the approved LTCP and/or to develop and implement an approvable LTCP. There are two remaining communities for which U.S. EPA is the lead regulating agency that have not yet entered into an enforceable mechanism for development and implementation of an approved LTCP. These communities are still in negotiations with U.S. EPA.

#### *Compliance and Technical Assistance Program*

The Compliance Branch in the Office of Water Quality is responsible for the following:

- Conducting routine inspections of wastewater treatment plants to evaluate operation and maintenance, as well as complaint investigations.
- Providing operator assistance and training.
- Administration of the wastewater operator continuing education and certification program.
- Entering a wide range of NPDES compliance data into the Federal ICIS data system.
- Tracking reported bypass and overflow events.
- Administration of the sewer ban and early warning program.
- Review of compliance data, including data quality assurance.
- Conducting informal enforcement actions through the issuance of violation letters, and assisting in the enforcement process.
- Oversight and auditing of municipal pretreatment programs in the 47 municipalities with U.S. EPA delegated pretreatment programs.
- Administering the laboratory proficiency program.

The Compliance Branch works closely with the Permits Branch and staff from the OWQ's Enforcement section to ensure that permit limits are adequate for protection of designated uses and dischargers remain in compliance with their permit requirements. For example, when unpermitted dischargers are identified, or when NPDES permit holders are found to be in violation of permit limitations or conditions, they may be referred to OWQ's Enforcement section for appropriate action.

### *Storm Water Program*

Storm water run-off from urban, industrial, and rural areas contributes to water pollution in Indiana. IDEM's Stormwater Programs process permit applications and issue permits, conducts compliance inspections, and conducts audits for three program areas that together, help to mitigate the impacts of storm water to Indiana waters. These program areas target storm water discharges from construction site run-off, industrial storm water run-off, and municipal separate storm sewer systems.

Most of the activities that discharge storm water are regulated through general permits. General permits are issued through rulemaking and as such, become part of Indiana's Administrative Code. Unlike individual permits, which IDEM issues to individual permittees when needed, general permits apply universally to all entities required to operate in accordance with the rule.

#### Construction Site Run-off

Any activity that results in the disturbance of one acre or more of land requires a permit in accordance with 327 IAC 15-5 (commonly known as "Rule 5"). Rule 5 is intended to reduce pollutants, principally sediment, which is a result of soil erosion. Rule 5 also covers other activities associated with construction projects including, concrete washout; fueling, etc. Most construction projects in Indiana are regulated through the general Rule 5 permit. However, in cases where an adverse environmental impact from a project site is evident or if IDEM determines that the discharge will significantly lower water quality, an individual permit may be required.

#### Industrial Storm Water

Industrial storm water is managed through a general permit developed in accordance with 327 IAC 15-6 (commonly known as "Rule 6"). Rule 6 permits are required for certain categories of industrial activities that are exposed to storm water and where the run-off is discharged through a point source to one or more Indiana waters. There are at least 32 categories of industrial activities regulated under Rule 6. Most industrial activities in Indiana are covered by the Rule 6 general permit. However, under certain circumstances, an industrial facility may require an individual storm water permit. Individual permits are typically required only if a regulated industrial activity category has established effluent limitations under IDEM's NPDES Program or if IDEM determines the storm water discharge will significantly lower water quality.

## Municipal Separate Storm Sewer Systems

Municipal separate storm sewer systems (MS4s) are entities that are required by IDEM under 327 IAC 15-13, or “Rule 13” to develop and implement a local storm water management program.

The first MS4s were designated in 1990 and included cities (and certain counties) with a population of 100,000 or more. In Indiana, the City of Indianapolis is the only designated Phase I MS4. The city has an individual storm water permit that was specifically written to address storm water quality and management.

Federal Phase II MS4 rules were complete in 1999 and designated small urbanized areas such as cities, towns, universities, colleges, correctional facilities, hospitals, conservancy districts, homeowner's associations and military bases located within urbanized areas, as delineated by the U.S. Census Bureau. Most of these MS4s are covered under a general permit and are required to develop a storm water quality management plan that must address six minimum control measures (public education, public involvement, illicit discharged detection and elimination, construction site run-off, post-construction run-off, and good housekeeping for MS4 owned and operated facilities). Indiana currently has 186 MS4 permittees implementing Storm Water Quality Management Plans under a general permit.

### *Wetlands Program*

IDEM administers the federal Clean Water Act (CWA) Section 401 Water Quality Certification (WQC) Program and also administers Indiana’s State Isolated Wetlands Law (IC 13-18-22) for those wetlands that are not under federal jurisdiction.

IDEM regulates the placement of fill materials, excavation (in certain cases) and mechanical clearing of wetlands and other waterbodies. IDEM draws its authority from the federal CWA, state law and rules for state-regulated wetlands, and from Indiana’s water quality standards. IDEM regulates some activities in waterbodies in conjunction with the U.S. Army Corps of Engineers (ACOE).

Anyone who wants to place fill materials, use heavy equipment to excavate, dredge, or mechanically clear areas within a jurisdictional wetland, lake, river or stream must first apply to the ACOE for a CWA Section 404 permit. If the ACOE decides a permit is needed, then the person must also obtain a CWA Section 401 WQC from IDEM. Placement of fill into non-jurisdictional wetlands is also regulated by Indiana law (IC 13-18-22 and 327 IAC 17).

Under CWA Section 401, IDEM reviews the proposed activity to determine if it will comply with Indiana’s water quality standards. The applicant may be required to avoid impacts, minimize impacts or mitigate for impacts to wetlands and other waters. IDEM will deny water quality certification if the activity will cause adverse impacts to water quality, the application is deficient, the wetland activities are not necessary, or compensatory mitigation does not offset impacts. A regulated project is not allowed to proceed until it has received a certification from

IDEM. A key goal of the program is to ensure that all activities regulated by IDEM meet the national no-net-loss of wetlands policy.

#### Development of Wetlands Program Plan

In March 2015, the Indiana Department of Environmental Management (IDEM), Office of Water Quality completed work on a long-term Wetlands Program Plan (WPP) for Indiana. A WPP is a voluntary plan that describes the goals a state or tribe wants to achieve related to its wetland resources over time. The WPP is not a rule-making or regulatory document, nor is it a strict commitment by the state to achieve all aspects of the plan. Rather, it serves to inform future prioritization and action. The planning effort was funded through a U.S. Environmental Protection Agency (EPA) Wetland Program Development grant and is intended to guide IDEM's wetland program activities through 2022. The WPP is available online at [http://www.in.gov/idem/wetlands/files/program\\_plan.pdf](http://www.in.gov/idem/wetlands/files/program_plan.pdf).

#### In-lieu Fee Program

The Indiana Department of Natural Resources (IDNR) is developing, and seeking approval to sponsor (referred to as the "in-lieu fee program"), the Indiana Stream and Wetland Mitigation Program. The program requires the approval of the U.S. Army Corps of Engineers (USACE) and the Interagency Review Team and must meet the requirements laid out in the federal mitigation rule (33 CFR §332.8). The in-lieu program, once fully developed, will provide an additional option for permittees to meet mitigation requirements associated with a Section 404 permit from the USACE, a 401 Water Quality Certification and/or an Isolated Wetland Permit from IDEM. The IDNR hopes to have the program approved by the USACE before the end of 2016.

#### Integrity and Extent of Wetland Resources

Wetlands occur in and provide benefits to every county in Indiana. The lack of quantitative information on some aspects of Indiana's wetland resources is a major obstacle to improving wetland conservation efforts. The most extensive database of wetland resources in Indiana is the National Wetlands Inventory (NWI) developed by the U.S. Fish and Wildlife Service (USFWS). The original NWI maps were produced primarily from interpretation of high-altitude color infrared aerial photographs taken of Indiana during spring and fall 1980-87. These maps were updated at a much higher resolution during 2008-2009 through a grant to Ducks Unlimited. The updated maps indicate wetlands extent and type, using the Cowardin, *et al.* classification scheme (Cowardin 1979). A 2009 analysis of the state's wetlands compared with 1986 conditions indicates that:

- Indiana has experienced a net loss in the number of emergent, forested, shore, and scrub-shrub wetlands.
- Indiana has experienced a net loss in the extent (acres) of forested, scrub-shrub, and shore wetland sub-types.

The results of this study are available at <http://www.fws.gov/wetlands/Data/SupMapInf/R03Y11P02.pdf>.

IDEM uses the updated, higher resolution NWI inventory primarily in its Wetlands Program as a screening tool when evaluating applications for impacts to wetlands and streams and also to help identify wetland compensatory mitigation or restoration sites. It has also helped IDEM wetland staff to set priorities for complaint investigations.

### Wetland Protection Activities

In addition to the review of applications for Section 401 WQC and state regulated wetland permits, IDEM's Wetlands Program works on additional projects devoted to wetland assessment and wetland protection:

- IDEM staff work closely with the ACOE, U.S. FWS, and IDNR to evaluate proposed projects to coordinate requirements for various state and federal permits related to wetlands.
- IDEM maintains a web page devoted to wetlands and water quality issues: <http://www.in.gov/idem/wetlands/index.htm>. This page includes information on the status of Indiana's wetlands, current laws and rules, conservation programs and links to other regulatory and non-regulatory wetland programs.
- IDEM maintains a web-based mapping tool for potential wetland restoration sites, including opportunities for compensatory mitigation and non-regulatory purposes: <http://idemmaps.idem.in.gov/MitigationVolunteer/>.
- Section 401 WQC Program staff conduct outreach events at various locations to promote the importance of wetlands and to educate the public on regulations protecting wetlands.
- IDEM continues to work closely with all partners in the Indiana wetland conservation plan.

### *Total Maximum Daily Load Program*

#### Status of Total Maximum Daily Load Development

As of March 1, 2016, the Total maximum Daily Load (TMDL) program has developed 1224 TMDLs (individually counting each waterbody impairment that was evaluated), all of which have been approved by U.S. EPA. Appendix D provides an accounting of all TMDLs approved to date. Appendix E provides IDEM's short term TMDL schedule – those either planned or currently being developed for the 2018 cycle.

Two watersheds – the Upper Mississinewa and the South Fork Blue River – are in progress for the 2016 cycle. Previous TMDLs have focused on *E. coli* impairments. More recently, however, the TMDL program has worked to develop TMDLs to address other issues related to NPS pollution such as impaired biotic communities and nutrient impairments.

### Long Term Total Maximum Daily Load Development Schedule

U.S. EPA announced its long term vision in 2013 to improve implementation of the CWA 303(d) Program through a new framework for managing program responsibilities. In order to achieve the goals of its vision, U.S. EPA required states to develop a new framework for prioritizing impaired waters for TMDL development.

IDEM developed its TMDL Program Priority Framework in 2015, which describes IDEM's methods for prioritizing waters for TMDL planning and watershed restoration and includes the agency's long term TMDL development schedule. This long term schedule identifies the watersheds in which TMDLs will be developed through the 2022 cycle (Appendix F). IDEM submitted the framework and its long term schedule to U.S. EPA on July 8, 2015. U.S. EPA has since reviewed IDEM's Priority Framework and in a letter to IDEM dated September 16, 2015, agreed that it meets the goals of its new long term vision. . IDEM's long term schedule for TMDL development can be found in Appendix F, while more detailed information on IDEM's 303(d) TMDL Program Priority Framework is provided in Appendix H, Attachment 3). The specific waterbodies identified on IDEM's long term schedule, like those identified in IDEM's short term schedule, may change based on unanticipated circumstances. Although the specific waterbodies may change, IDEM will follow the methods described in its Program Priority Framework when prioritizing impaired waters for TMDL development to help ensure ongoing consistency with U.S. EPA's long term vision.

### *Nonpoint Source Pollution Program*

Nonpoint source (NPS) pollution in Indiana is addressed in many ways through a number of agencies and organizations in the state. IDEM's Watershed Planning and Restoration Section leads the agency's efforts to reduce nonpoint source pollution in Indiana waters in partnership with other agencies and organizations including the Natural Resources Conservation Service (NRCS), Indiana Association of Soil and Water Conservation Districts (IASWCD), Indiana State Department of Agriculture (ISDA), the Indiana Department of Natural Resources (IDNR) and the Indiana Finance Authority (IFA) State Revolving Fund (SRF) Loan Program. The Watershed Planning and Restoration Section also leads efforts to restore waters of the state that are identified on the 303(d) List of Impaired Waters. In addition to working with other state and federal agencies, IDEM employs four watershed specialists who work with local watershed groups to promote the watershed approach and assist them in their watershed planning and restoration activities.

### Nonpoint Source Program Grants

The Watershed Planning and Restoration Section manages two federal pass-through grant programs aimed at improving water quality in the state – Section 205(j) and Section 319(h) – each named after the authorizing section of the CWA.

The Section 205(j) Grant Program is dedicated to water quality management planning. Funds are used to determine the nature, extent, and causes of point and nonpoint source pollution

problems and to develop plans to solve these problems. In federal fiscal year (FFY) 2014-15, U.S. EPA allocated to Indiana \$681,000 in 205(j) funds. These funds were used to support five projects: three watershed management plan development projects (on the Browns-Wonder Sugar Creek, South Fork Blue River, and Upper Middle Eel River), one sampling project on the Kankakee River, and one database enhancement project.

The Section 319(h) Program is one of the primary resources for reducing NPS pollution in Indiana and receives a significantly larger allocation than that under CWA Section 205(j) (Table 3, Appendix A). In FFYs 2014 and 2015, U.S. EPA allocated \$7,023,714 in Section 319(h) funds to Indiana, which funded a total of 18 projects. An additional \$131,600 planning project was funded in FFY 2015 using remaining funds from FFY 2013. Several grant proposals are submitted to the program each year by eligible organizations. Proposals are reviewed internally by a committee comprised of OWQ staff and selected for funding based on the NPS Program's priorities and the quality of the proposal. Much of this funding goes to groups working to develop and/or implement a comprehensive watershed management plan which will lead to implementation of on-the-ground best management practices (BMPs) in critical areas of their watersheds.

Additional information about IDEM's 205(j) and 319(h) grant programs and their different requirements is available online at: <http://www.in.gov/idem/nps/>.

#### Nonpoint Source Program Focus

IDEM's NPS Program is built on the foundation of the Indiana State Nonpoint Source (NPS) Management Plan. The NPS management plan, required by Section 319(b) of the CWA, is a strategic document developed by state program staff and approved by U.S. EPA that identifies strategic priorities, goals, and milestones to more effectively address NPS problems in Indiana. The plan, which is updated every five years, provides the basis for funding decisions and programmatic direction for the state program and its partners. The current plan was last revised in FFY 2013 and approved by U.S. EPA on March 14, 2014.

The majority of Indiana's Section 319(h) grant funds provide for the development and implementation of watershed management plans (WMPs). Developing and implementing a comprehensive watershed management plan is an effective way to focus efforts and resources on a watershed and its particular problems and to implement solutions to those problems. In the planning process the watershed group identifies the problems, causes, sources, and critical or target areas in the watershed, then sets goals and chooses measures or best management practices (BMPs) to be implemented to achieve those goals. WMPs now under development must meet the required elements of IDEM's 2009 Watershed Management Plan Checklist before they can be implemented with CWA Section 319(h) funds. The checklist incorporates EPA's nine required components of a watershed-based plan and also provides comprehensive guidance on IDEM's Nonpoint Source Program expectations, as well as examples and direction on how to meet those expectations.

Many of the projects funded with NPS Program grants include the collection of water quality data for watershed planning and other purposes. In accordance with their grant agreements, these projects must develop a quality assurance project plan (QAPP) to ensure the data they collect will be reliable for their project needs. Once the QAPP is approved by the NPS Program, they may begin sampling and submitting their data – also a requirement for funding – to the NPS Program. These data are then entered into IDEM’s Assessment Information Management System (AIMS) database. The AIMS database is continually maintained and was recently upgraded to make NPS Program data more readily available for internal and external use. In addition, the NPS Program also funded a recent project to update IDEM’s Hoosier Riverwatch database in order to improve its ability to manage and display volunteer data and accept data submitted through Indiana’s External Data Framework.

### Nonpoint Source Program Priorities

Each year, IDEM identifies priority projects for Section 319(h) funds in order to more efficiently meet NPS Program goals, coordinate with TMDL Program efforts to identify and reduce NPS pollution, and focus more funding on impaired waters.

For FFYs 2014 and 2015, the NPS Program has focused funding on the following priorities:

- In order to continue to make measurable improvements in water quality in Indiana, and to prioritize watersheds for actions focused on reducing nutrient loading to the Gulf of Mexico in coordination with the Indiana Conservation Partnership, IDEM’s Nonpoint Source Program has focused funding watershed management plan implementation projects addressing nutrients in the following watersheds:
  - White River, East Fork Basin
  - Upper Wabash River Basin
  - Lower Wabash River Basin
- In 2014 the NPS program prioritized funding to support the conditionally approved Lake Michigan Coastal Plan. Until this plan is finalized and meets the requirements of the Coastal Zone Act Reauthorization Amendments (CZARA), IDEM’s NPS Program will continue to provide technical and financial assistance for watershed planning and/or implementation in the Coastal Zone Program area.
- The program has continued to prioritize funding for:
  - Watershed planning and/or implementation efforts in watersheds with one or more impaired waterbodies that have an approved TMDL.
  - Watershed planning and/or implementation in watersheds that include waterbodies in categories 5A or 4A of Indiana’s Draft 2012 Integrated Report.
  - Implementation of watershed management plans that have met, or will soon meet, IDEM’s Watershed Management Plan 2003 or 2009 Checklists.



In FFY 2016, the CWA Section 319(h) program tied its funding to the TMDL vision. IDEM continued in FFY 2016 to prioritize funding for implementation of watershed management plans that meet IDEM's 2009 watershed management plan checklist and in addition, targeted specific watersheds for the following three priorities in its solicitation:

- Develop a WMP or implement an IDEM approved WMP that contains a 10-digit HUC watershed with a public lake (a lake with public access) identified as having a high blue-green algae count when monitored by IDEM and/or the lake is influenced by waterbodies listed in category 5A of the then-draft 2014 303(d) List of Impaired Waters.
- Develop a WMP or implement an IDEM approved WMP in a watershed that includes waterbodies listed on the then-draft 2014 303(d) List of Impaired Waters for Impaired Biotic Communities (IBC).
- Develop a WMP or implement an IDEM approved WMP that includes a 10-digit HUC watershed with a surface water intake for public water supply and waters identified in category 5A of the then-draft 2014 303(d) List of Impaired Waters.

One important indicator of program and project success is the quantity of pollutants, such as sediment, phosphorus, nitrogen, and *E. coli*, prevented from entering waterbodies as a result of BMPs implemented. Most NPS Program projects in Indiana use the U.S. EPA Region 5 Load Estimation Model to estimate the pollutant load reductions for each BMP they implement and submit their data to IDEM. The total reported estimated pollutant load reductions in Indiana for FFY 2014 and 2015 combined are represented in Table 4 (Appendix A). Another program measure (commonly referred to as "WQ-10" or "success stories") tracks the number of waterbodies identified by states as being primarily NPS-impaired that have been partially or fully restored as a result of restoration efforts (5, Appendix A). More detail on Indiana's FFY 2014 and 2015 success stories can be found in the cost/Benefit Section of the report.

#### IDEM's Watershed Specialists

The NPS Program employs four watershed specialists who provide an important link between watershed groups and other interested stakeholders and OWQ programs. In 2014 and 2015, the watershed specialists assisted nearly 90 watershed groups on many levels including: meeting facilitation, reviewing draft and final watershed management plans, reviewing grant proposals, providing water quality data and watershed maps, connecting them with other local organizations and agencies to complement planning efforts, and assisting watershed coordinators with the overall watershed planning and implementation processes. The watershed specialists also work with the TMDL Program by attending TMDL public meetings to provide information on watershed planning and to build local partnerships to address water quality.

## *Volunteer Monitoring Programs*

### Hoosier Riverwatch

From 1999-2002, IDEM and IDNR worked cooperatively to develop and implement the Hoosier Riverwatch Program (HRW), a statewide volunteer stream water quality monitoring program. The mission of Hoosier Riverwatch is to involve the citizens of Indiana in becoming active stewards of Indiana's water resources through watershed education, water monitoring, and clean-up activities. The program accomplishes the first two parts of this goal by educating citizen volunteers in a variety of watershed and pollution issues, and providing them with training and equipment to conduct water quality monitoring. The HRW Program also maintains an online database which allows volunteers to enter their own data and view data collected by other volunteers. Volunteers are encouraged to enter their results into the database to make them available to other interested parties such as watershed groups, schools and IDEM technical staff for potential use in various OWQ programs. In addition to basic search functions, the visualization tools of the database also allow volunteers to view their data and that collected by others in comparison with state and watershed averages through simple graphics.

HRW resided at IDNR until late 2012, when the program moved to IDEM's OWQ to better integrate volunteer water monitoring with OWQ's watershed monitoring and planning activities. Over the past three years, HRW has become more fully integrated into the Watershed Assessment and Planning Branch within OWQ, allowing better coordination with NPS Program whose grantees commonly use HRW methods to meet the monitoring and outreach components of their funded projects and encouraging greater data sharing through OWQ's EDF. The HRW Program has also initiated planning discussions to determine how volunteer monitoring can become more fully involved in watershed planning and restoration efforts as a whole.

The move to IDEM also provides volunteer monitors more opportunities to interact with their professional counterparts. Since 2012, HRW program staff have worked with OWQ biologists and others to offer training to the program's corps of trained volunteer instructors in topics such as basic fish and advanced macroinvertebrate identification, introductions to IDEM's mobile *E. coli* van, the collection and analysis of fish tissue for consumption advisories, the use of various electrofishing gear, and the process of estimating pollutant loads using flow and concentration data.

### Indiana Clean Lakes Program

The Indiana University School of Public and Environmental Affairs (IU-SPEA) has been working with IDEM's NPS Program since 1989 to administer the Indiana Clean Lakes Program (CLP). The Indiana CLP is funded through CWA Section 319(h) and provides a comprehensive, statewide public lake management program that includes public information and education, technical assistance, volunteer lake monitoring, and lake water quality assessment.

Indiana has more than 1,400 lakes, reservoirs, and ponds, many of which are under pressure from human activities such as poorly managed agriculture, suburbanization of lakeshores, boating

impacts, and septic system discharges. These activities can result in excessive nutrient concentrations reaching lakes which can lead to accelerated eutrophication and related undesirable effects including nuisance algae, excessive plant growth, murky water, odor, and fish kills.

Indiana's CLP, which is coordinated by IU-SPEA staff and students, includes the following components:

- Annual professional sampling of lakes and reservoirs.
- Training and support of a corps of volunteer lake monitors.
- Education and outreach through a quarterly newsletter
- Development of other educational materials such as brochures and fact sheets.
- Maintenance of the Indiana Clean Lakes Program website.
- Technical assistance and expertise on lake-related issues.

The Indiana CLP also participates in the annual Indiana Lake Management Conference as part of its education and outreach activities.

In 2012, IU-SPEA expanded its volunteer monitoring program to include aquatic invasive species monitoring with the goal of helping to detect the presence of invasive species early and to prevent their spread. In 2014, Zebra mussels were added to the program.

The program also holds workshops each year to help increase public understanding of the important zones of a lake that provide essential habitat and ecosystem services. Volunteers that participate in the workshops often expand their monitoring efforts becoming even better lake stewards. This program has been very well received and continues to improve with each workshop.

Volunteers enter their data on the Indiana CLP [website](#). Volunteer data reports are available on the website for the years 1999-2011. Information regarding IDEM's use of the data collected by IU-SPEA staff and students for CWA Section 305(b) and Section 314 assessments can be found in a later section of this report.

## **COORDINATION WITH OTHER AGENCIES**

Nonpoint source (NPS) pollution ranges from urban sources to construction and agricultural runoff which makes cooperation essential across political boundaries and disciplines. Many local, regional, state, and federal agencies play an essential part in addressing NPS pollution, especially at the watershed level. Various agencies in Indiana provide data, technical resources and grants to local watershed groups to assist with planning, infrastructure design review and implementation of best management practices (BMPs) to reduce and prevent NPS pollution. Through coordination and collaboration, IDEM and the other agencies can more effectively focus water quality protection efforts.

IDEM works closely with other state and federal agencies engaged in improving water quality. For example, IDEM serves as a member of the Indiana Conservation Partnership (ICP) – a partnership comprised of eight state and federal agencies and other organizations committed to the goal of promoting conservation.

IDEM also has four watershed specialists that act as liaisons for local, state and federal entities to integrate watershed planning into local level planning efforts. These specialists serve as Section 319(h) project managers and assist in a technical, managerial and financial advisory role for local watershed groups.

IDEM staff in the Wetlands and Storm Water Programs work cooperatively with the U.S. Army Corps of Engineers, IDNR, the U.S. Fish and Wildlife Service (USFWS), local soil and water conservation districts (SWCDs) and other agencies to provide technical assistance and to issue Clean Water Act (CWA) Section 401 water quality certifications, state permits for isolated wetlands, and construction /land disturbance permits to protect water quality.

#### *Indiana Department of Natural Resources*

##### Division of Reclamation, Abandoned Mine Lands Program

IDEM's total Maximum Daily Load (TMDL) and Nonpoint source (NPS) Programs work with IDNR's Abandoned Mine Lands (AML) Program on any TMDL development and potential water quality improvements in watersheds where abandoned coal mines exist. The AML Program contributes to these efforts by sharing water quality data and information regarding the costs and techniques involved in their reclamation projects. The AML Program has also helped educate IDEM's Office of Water Quality (OWQ) staff about areas impacted by acid mine drainage by touring reclamation projects with them at different points in the reclamation process.

##### Division of Fish and Wildlife, Lake and River Enhancement Program

The goal of the Lake and River Enhancement (LARE) Program in the IDNR Division of Fish and Wildlife is to reduce the amount of sediment and nutrients entering Indiana's lakes and rivers. Coincidental to this goal is an ongoing effort to utilize LARE-funded projects to protect and enhance aquatic habitat for fish and wildlife to ensure the continued viability of Indiana's publicly accessible lakes and streams for multiple uses, including recreational opportunities.

These goals are accomplished through the granting of funds to appropriate sponsoring entities to provide for technical and financial assistance to qualifying projects. These projects range from diagnostic studies of targeted sub-watersheds to determine the design and construction feasibility of measures to reduce erosion and sedimentation in lakes and streams. Indiana law dedicates a portion of LARE funding to the removal of sediment, logjams and other obstructions, and control of invasive aquatic species. And, the program also provides funding to county SWCDs to assist individual landowners in the use of BMPs in targeted watersheds.

In 2015, LARE grants totaled more than two million dollars to projects in numerous counties across the state. Funding for the program comes from a lake and river enhancement fee paid by boat owners annually to the Bureau of Motor Vehicles. LARE projects leverage these funds to benefit not only boaters but everyone who uses Indiana's publicly accessible lakes and streams. LARE-funded projects also help to improve aquatic habitat and reduce the amount of nutrients entering both the Great Lakes and the Mississippi River System.

### Indiana Lake Michigan Coastal Program

The purpose of IDNR's Lake Michigan Coastal Program (LMCP) is to enhance the state's role in planning for and managing natural and cultural resources in the coastal region and to support partnerships between federal, state and local agencies, and other organizations.

The LMCP annually awards a variety of grants through its Coastal Grants Program to coastal municipalities, counties, nonprofit groups, and universities for projects that protect and restore natural, cultural and historic resources in Indiana's Lake Michigan coastal region. Examples of how these funds might be used include:

- Protection and restoration of significant natural and cultural resources.
- Programs to prevent the loss of life and property in coastal hazard areas.
- Improved public access for recreational purposes.
- Revitalized urban waterfronts and ports.
- Improved coordination among government agencies when making policy decisions.
- Pollution prevention initiatives, including NPS pollution into coastal water.

The Coastal Nonpoint Pollution Control Program, established in 1990 by [Section 6217](#) of the Coastal Zone Act Reauthorization Amendments, is jointly administered by National Oceanic and Atmospheric Administration (NOAA) and the U.S. Environmental Protection Agency (EPA). The program establishes a set of management measures for states to use in controlling runoff from six main sources: agriculture, forestry, urban areas, marinas, hydromodification (shoreline and stream channel modification), wetlands, and riparian and vegetated treatment systems. The goal is to reduce polluted runoff to coastal waters. All coastal and Great Lakes states and territories that participate in the National Coastal Zone Management Program are required to develop coastal nonpoint pollution control programs. State authorities ensure implementation.

Indiana's Coastal Nonpoint Pollution Control Program received conditional U.S. EPA/NOAA approval in 2008. The LMCP is working closely with IDEM's NPS Program and other NPS program partners to implement management measures specified by U.S. EPA to prevent and mitigate NPS pollution in Lake Michigan coastal watersheds. Documentation indicating how Indiana meets all remaining Coastal NPS Pollution Control Program conditions must be submitted to U.S. EPA/NOAA by September 30, 2019.

The Septic System Coordination Work Group established and facilitated by the LMCP is an example of how coastal partners collaborate to address the management measure for inspection of potentially failing septic systems. The Indiana State Department of Health (ISDH), county

health departments, IDEM, the Northwest Indiana Federal Urban Waters Partnership, local municipal separate storm sewer systems (MS4s), watershed groups, and regional environmental agencies and organizations meet on a regular basis to share information on local conditions and ordinance development, address failing systems, and identify innovative funding mechanisms. In 2014 and 2015 the work group spearheaded adoption and promotion of U.S. EPA's SepticSmart Week by ISDH, IDEM, IDNR, and more than 40 coastal towns, agencies, and organizations.

### *Indiana Conservation Partnership*

IDEM is one of eight agencies and organizations that comprise the Indiana Conservation Partnership (ICP). The ICP works to provide technical, financial, and educational assistance needed to implement conservation practices that are environmentally and economically compatible and that promote good stewardship of Indiana's soil and water resources. IDEM serves on the ICP with the following agencies and organizations:

- Natural Resources Conservation Service (NRCS)
- Farm Service Agency (FSA)
- State Soil Conservation Board
- Indiana State Department of Agriculture (ISDA)
- Indiana Department of Natural Resources (IDNR)
- Indiana Association of Soil and Water Conservation Districts (IASWCD)
- Purdue University Cooperative Extension Service

The ICP meets bimonthly for partner updates, to coordinate and collaborate where possible to optimize their resources – particularly their various cost-share and grant programs – and the technical training they can provide for achieving water quality objectives. The ICP also prepares an annual work plan that defines objectives for up to four conservation focus areas and includes the actions, responsible entities and deadlines for achieving them.

The ICP sponsors a number of initiatives that have the potential to improve water quality in Indiana. One example is the Conservation Cropping Systems Initiative, which provides education on the use of a system of practices that promote soil health. These include cover crops, nutrient and pest management, continuous no-till/strip-till, and precision farming, all of which can provide water quality benefits. Many of the agencies participating in the ICP also provide funding on a continuing or limited basis to address nonpoint source (NPS) pollution such as NRCS's Regional Conservation Partnership Program and ISDA's Clean Water Indiana (CWI) program.

Indiana's State Nutrient Reduction Strategy – a collaborative effort between ISDA and IDEM with contributions from other ICP partners – was developed in 2015 to provide a framework for reducing nutrients entering Indiana waters. As part of this strategy, the ICP has committed to report load reductions of sediment, nitrogen, and phosphorus achieved by the practices installed under various funding authorities of its participating agencies. ISDA technicians were trained by

IDEM NPS staff to use the U.S. EPA Region 5 model to calculate load reductions. For calendar years 2013 and 2014, the ICP has reported the following load reductions for the Indiana:

- Sediment – 2,658,398 tons/year
- Nitrogen – 4,901,344 pounds/year
- Phosphorus – 2,607,847 pounds/year

Indiana’s State Nutrient Reduction Strategy along with maps showing the locations at which these reductions were achieved are available at: <http://www.in.gov/isda/2991.htm>. More detail information about the ICP and its activities can be found at: <http://icp.iaswcd.org/>.

### *National Water Quality Initiative*

The U.S. Department of Agriculture (USDA) annually targets Farm Bill dollars to the NRCS National Water Quality Initiative (NWQI) Monitoring Project watersheds to promote the implementation of conservation practices. IDEM worked closely with NRCS to prioritize watersheds for the NWQI using the decision criteria of watersheds with impaired waters, high risk natural resource areas, active local watershed groups or conservation interests, and baseline water quality data. As a partner on the NWQI, the U.S. EPA requires IDEM, as the state agency in Indiana charged with implementing the CWA, to contribute monitoring resources to at least one NWQI watershed.

The watershed selected for NWQI monitoring is the School Branch watershed, a small (8.4 square miles) watershed located in northeastern Hendricks County, Indiana. School Branch is nested in the Eagle Creek watershed, which is located in the larger Upper White River Watershed. Land use in the watershed is predominately agricultural with interspersed residential areas. Soil classes in the School Branch watershed are predominantly poorly drained and the watershed is extensively tile drained. School Branch eventually drains into Eagle Creek Reservoir, a primary drinking water source for Indianapolis.

School Branch, Eagle Creek, and the Upper White River watersheds are on Indiana’s 303d List of Impaired Waters due to high levels of nutrients. The size of the Eagle Creek and Upper White River watersheds (163 and 2,718 square miles, respectively) and the variety in land uses at these scales has made it difficult to evaluate the effects of conservation and land management strategies. Therefore, focusing on the much smaller School Branch watershed, in which 80% of the land use is agricultural, will allow researchers to adequately isolate water quality impacts from agriculture versus other sources.

Previous attempts to document water quality improvements from agricultural conservation practices at the watershed scale have proven particularly difficult due to the number of issues that can hinder the ability to attribute improvements to specific practices. These issues include:

- Insufficient baseline data
- Incomplete separation of agricultural influences from non-agricultural sources
- Inadequate sampling duration and intensity to account for “lag time”, seasonal influences, and storm events
- Insufficient adoption of complete conservation systems within watersheds

A collaboration of federal, state, local, and academic entities along with dedicated conservation-minded farmers in the School Branch watershed has provided a unique monitoring opportunity to assess the chemical, physical, and biological impacts of conservation practices at the watershed, sub-watershed, and edge-of-field scales. The project is currently measuring water quality associated with conservation cropping systems that improve soil health in predominantly corn and soybean row crop agriculture.

The data collected in this watershed will allow evaluation of how production agriculture can complement sustainable water resources. In addition, because the School Branch watershed is nested within two successively larger watersheds of similar land use and hydrology, the project is monitoring and can model impacts of conservation at multiple scales. Historical data is also available to enhance the assessment of improvements over time.

Monitoring and evaluation efforts are being conducted at different scales by IDEM, the U.S. Geological Survey (USGS), the Indiana Geological Survey (IGS), the Marion County Health Department (MCHD), USDA-NRCS, and the Center for Earth and Environmental Services (CEES) at Indiana University - Purdue University, Indianapolis.

Through this monitoring – a collaborative effort without precedent in Indiana – these agencies and organizations are measuring streamflow and groundwater levels, collecting water samples from the stream and edge-of-field surface runoff, and monitoring sub-surface flows for nitrogen, phosphorus, and suspended sediment. Groundwater is also being monitored for nitrogen and phosphorus. Soils are being monitored as well, to determine moisture levels, water-holding capacity, and nutrient content. Supplementary biological indicators will be used to evaluate factors affecting water quality and nutrient source tracking from field, in-stream bed and bank, and residential sources and sediment characteristics analyses will be conducted.

Thanks to conservation-minded farmers participating in this study, the research partners collaborating on this project will be better able to distinguish between the water quality effects associated with complete conservation cropping systems from other agricultural and non-agricultural sources of sediment and nutrients.



### *Indiana Water Monitoring Council*

The Indiana Water Monitoring Council (InWMC), is a broad-based, state-wide organization whose primary mission is to enhance the communication, collaboration and coordination of professionals, organizations, and individuals involved in water monitoring within Indiana. As a charter member, IDEM has remained actively involved with the InWMC since its formation in 2008. IDEM staff serve on the board and on a number of InWMC committees to assist with activities to:

- Provide a forum for communication among groups involved in monitoring Indiana waters.
- Promote the sharing of monitoring data and information on effective procedures and protocols for sample collection.
- Facilitate the development of collaborative monitoring strategies.

The Ag Water Monitoring Forum is one example of the type of activities IDEM supports through its work on the InWMC. On August 28, 2015, the InWMC partnered with Indiana Farm Bureau, Purdue University's Agricultural Research Department, and the NRCS to convene a meeting of several leading researchers in the state who are focusing on the effects of conservation practices on water quality.

The meeting focused on the Indiana Nutrient Management and Soil Health Strategy, a 10-year plan developed through a collaborative effort of Indiana agricultural producers to help protect Indiana's soil and water resources through the optimization of nutrient management and implementation of practices to reduce nutrient loss from fields. Researchers and producers shared updates on the strategy and gathered input on recommended protocols and study designs for its continued implementation. The meeting agenda and presentations are available at the InWMC website: <http://www.inwmc.org/event-1986971>. The Indiana Nutrient Management and Soil Health Strategy, which is an addendum to the Indiana's State Nutrient Reduction Strategy, is also available online at: <https://inagnutrients-public.sharepoint.com/>.

Multiple state, federal, and local agencies and organizations are monitoring water quality within Indiana, each with its own mandate or reason for monitoring. Although each agency and organization is collecting potentially valuable data on Indiana's water resources, the lack of coordination can lead to duplication of efforts and important information that may be overlooked from the resulting lack of data sharing.

Members of the InWMC have overwhelmingly cited the need for a shared understanding among the water resources community of existing active monitoring networks within Indiana as critical to more effective management of water resources throughout the state. Shortly after its formation, the InWMC's Coordination and Collaboration Committee responded to this need by convening the Integrated Water Monitoring Network Optimization Taskforce to begin working toward a better understanding of the monitoring efforts going on throughout the state.

Soon, the InWMC will release the first product of the taskforce – a study of ongoing monitoring networks throughout Indiana to help environmental managers, researchers, and interested citizens find data from sampling sites with long periods of record. The study will highlight the existing river and stream water quality networks that can provide data and identify new sites that may be needed to augment existing networks and/or eliminate sites that are currently being monitored by more than one group. The paper is currently in draft and is expected to be published later in 2016. In the meantime, those wanting to learn more about the InWMC can find more information about its activities as well as a number of resources online at: [www.InWMC.org](http://www.InWMC.org).

### Indiana State Revolving Fund Loan Program

The Indiana State Revolving Fund (SRF) Loan Program administers two different loan programs that provide low-interest loans to Indiana communities, one for projects that improve drinking water and the other for wastewater infrastructure projects. The Indiana Finance Authority administers these programs to protect public health and the environment. Cities, towns, counties, regional sewer/water districts, and conservancy districts are eligible for the programs. Private and not-for-profit public water systems and water authorities are also eligible for drinking water SRF loans.

Eligible projects include those that abate water pollution problems, provide greater protection for public health or ensure compliance with either the CWA or the Safe Water Drinking Act. Wastewater projects may include wastewater treatment plant construction or improvements, sewer line extensions to existing unsewered areas, decentralized treatment systems, combined sewer overflow elimination and infiltration/inflow corrections. Drinking water projects may include treatment plant construction and improvements, water storage facilities, water distribution systems and water supply. The program provides additional financial incentives to projects to include green technology, a Brownfields Program<sup>2</sup> project or a sustainable infrastructure component.

Both SRF Loan Programs offer a 20-year, fixed rate loan term. Interest rates on loans through the SRF Programs use a base interest rate, which is reset on the first business day of each January, April, July, and October. The base rate is calculated by using 90 percent of the average 20-year AAA-rated, general obligation bond Municipal Market Data composite index for the most recent calendar month. The base rate is then discounted further based upon a community's median household income from 2010 census data and projected user rates. As an incentive to communities to address nonpoint source water pollution, for projects with a NPS component or green/sustainable infrastructure components, the interest rate on their loans may be reduced by up to 0.5 percent. The program has established a floor of two percent as the lowest possible interest rate, including any reductions.

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<sup>2</sup>The Indiana Brownfields Program works in partnership with the U.S. Environmental Protection Agency and other Indiana agencies to assist communities with redevelopment of "brownfield" properties where making productive use redevelopment is complicated due to actual or potential environmental contamination.

The SRF Loan Programs coordinate with state and federal programs, including IDEM's OWQ, to identify ways it might provide assistance to Indiana communities that will ultimately help to achieve common goals. For example, the Clean Water SRF ranking and scoring gives additional points for projects that remove a pollutant source from an impaired stream. This way of scoring increases the likelihood that projects with a water quality benefit will rank high on the SRF project priority list. The funds loaned for these removal projects can be documented as a match, when applicable, for projects submitting grant proposals to the NPS Program. Projects eligible for match must provide water quality benefits to their respective communities and may include, but are not limited to, one or more of the following:

- Wetland restoration/protection
- Erosion control measures
- Groundwater remediation
- Repair or replacement of failing septic systems or connection to sewer
- Storm water BMPs
- Source water and wellhead protection
- Conservation easements
- Agricultural and waste management BMPs

The SRF Loan Programs also serve on the Indiana Rural Wastewater Task Force's Environmental Infrastructure Working Group, which allows the SRF Program the opportunity to provide input and offer financing options to communities for their drinking water and/or wastewater infrastructure needs. The SRF Loan Programs work with communities addressing combined sewer overflows, enforcement issues or those with or nearing a sewer ban.

Over the State Fiscal Years (SFYs) 2014 and 2015, one project with a NPS component saved an additional \$3,314,189 over the 20-year term of their loans. While these savings are realized over the longer term, these projects are typically completed within two years and the water quality benefits are achieved much sooner than 20 years.

#### Annex 4 of the Great Lakes Water Quality Agreement

The 2012 amendments to the Great Lakes Water Quality Agreement (GLWQA) included Annex 4 on nutrients. The Annex 4 binational subcommittee was established in 2013 to coordinate binational actions to manage phosphorus loadings and concentrations in the Great Lakes. Indiana has been an active member of this subcommittee since its inception. The GLWQA Lake Ecosystem Objectives include the following:

- Minimize the extent of hypoxic zones in the Great Lakes due to excessive phosphorous loading with emphasis on Lake Erie.
- Maintain levels of algal biomass below nuisance level conditions.
- Maintain algal species consistent with healthy aquatic ecosystems in nearshore waters.

- Maintain cyanobacteria biomass at levels that do not produce concentrations of toxins that pose a threat to human or ecosystem health.
- Maintain an oligotrophic state, relative algal biomass, and algal species consistent with healthy aquatic ecosystems in the open waters of Lakes Superior, Michigan, Huron and Ontario.
- Maintain mesotrophic conditions in the open waters of the western and central basins of Lake Erie, and oligotrophic conditions in the eastern basin of Lake Erie.

Commitments under the Nutrients Annex include the following:

- By February 2016, establish binational phosphorous objectives, loading targets and allocations for the nearshore and offshore waters to achieve the ecosystem objectives for each lake, starting with Lake Erie.
- Assess and where necessary, develop/implement regulatory and non-regulatory programs/measures to reduce phosphorous loadings from agricultural, rural non-farm, urban and industrial point and nonpoint sources.
- By 2018, develop a binational phosphorous reduction strategy and domestic action plans designed to meet nearshore and open water phosphorous objectives and loading targets for Lake Erie.

On February 22, 2016, the United States and Canada adopted new phosphorous reduction targets for Lake Erie, which are noted in Table 6 (Appendix A). Indiana's Domestic Action Plan (DAP) will be led by IDEM and developed by a steering committee comprised of representatives from different stakeholder sectors. The DAP will follow an outline that includes purpose, background, goals, objectives, tactics, and measuring and reporting progress.

Indiana's portion of the Western Lake Erie Basin is comprised of the St. Joseph, Maumee, Auglaize, and St. Marys watersheds. The St. Joseph River and the St. Marys River enter Indiana from Ohio and, at their confluence, form the Maumee River. The Maumee flows eastward into Ohio and into Lake Erie. The 40 percent reduction in spring-time total phosphorus and soluble reactive phosphorus noted in Table 6 for the Maumee River translates to a flow-weighted mean concentration of 0.23 milligrams per liter total phosphorus and 0.05 milligrams per liter soluble reactive phosphorus. Progress toward these target values will be measured on the Maumee River as close to the Indiana-Ohio border as feasible. A draft of the DAP will be available by December 31, 2016.

## **COST/BENEFIT ASSESSMENT**

Water is a vital component of the economic health of Indiana, which is diverse in its agriculture, industry, population, and environmental resources. Finding the right balance between these often competing needs promises the benefits associated with a robust economy, high quality of life, and healthy ecosystems. However, the finances available to restore, enhance, and protect our water resources is limited in comparison to the work needed to ensure that balance. The following is a discussion of some of the revenue sources available to state, regional, and local

entities to achieve the objectives of the Clean Water Act (CWA) as well as case studies that illustrate improvements in water quality and their resulting benefits.

#### *Funding Water Quality Improvements through Better Infrastructure*

Since 1992, the State Revolving Fund (SRF) Programs have provided more than \$3.7 billion dollars for more than 679 wastewater (Figure 2, Appendix B) and drinking water (Figure 3, Appendix B) infrastructure improvement projects. SRF Program assistance to communities is expected to result in water quality benefits for many Indiana rivers and streams.

In state fiscal years (SFYs) 2014 and 2015, the Wastewater SRF Program closed 34 loans totaling almost \$300 million. This provided an estimated savings (compared to open market interest rates) of more than \$64.5 million. In SFYs 2014 and 2015, the Drinking Water SRF Program closed on 22 loans for totaling almost \$40 million with savings to Indiana communities estimated at more than \$19 million (Table 7, Appendix A).

#### *Successes in Water Quality Improvement through Strategic Measures*

IDEM has reported improvements in water quality in almost 220 miles of streams in 12 different watersheds since 2007 to the U.S. Environmental Protection Agency (U.S. EPA) to meet measures outlined in U.S. EPA's strategic plan (Table 5). Measure SP-12 (commonly called "Measure W") is used by U.S. EPA to track improvements in water quality conditions in impaired watersheds resulting from watershed planning and restoration activities. For the purposes of meeting this measure, improvements may be demonstrated by the removal of at least 40 percent of the impairments or impaired miles/acres in the watershed from the state's 303(d) List of Impaired Waters or by valid scientific information that indicates significant watershed-wide improvement in one or more water quality parameters associated with impairments listed on Indiana's 2002 303(d) list. WQ-10 is a performance measure that requires states to develop Nonpoint Source (NPS) Program "Success Stories" and submit them to U.S. EPA for the purposes of tracking how NPS restoration efforts are improving water quality. To meet this measure, IDEM must identify nonpoint source-impaired waters that have been improved as a result of watershed restoration efforts funded in whole or in part by IDEM's NPS Program.

In 2014 and 2015, IDEM reported water quality improvements in the Emma Creek and Indian Creek watersheds, respectively. Two additional stories will be reported in 2016. These successes and others can be found on U.S. EPA's Nonpoint Source Success Stories [website](#).

#### Reducing Livestock-Induced Pollution in Emma Creek

Emma Creek is a 38.2-mile tributary to the Little Elkhart River, which flows through southeastern Lagrange County in northeastern Indiana. IDEM monitored a small, 2.3-mile tributary to Emma Creek in 2000, collecting fish community and habitat data along with water chemistry samples. Analysis of fish community data showed an Index of Biotic Integrity score of 14, well below the score necessary to be considered supportive of the biological integrity. In addition, habitat and chemistry data collected by IDEM in 2000 revealed that siltation, excess

nutrients and low dissolved oxygen (particularly during the summer months) contributed to impaired biotic communities in the stream. IDEM's analyses of water samples also showed an ammonia level much higher than the state's water quality criterion for the protection of aquatic life. These results prompted IDEM to add the stream to the 303(d) list in 2002 for impaired biotic communities (IBC) and ammonia. Suspected pollutant sources included barnyard runoff, failing septic systems, and livestock access to the stream.

The Lagrange County Soil and Water Conservation District (SWCD) developed a watershed management plan (WMP) for the Little Elkhart River in 2007 using water quality data collected from June 2005 through December 2006 to guide the efforts. As part of the WMP implementation, the SWCD conducted a paired watershed study on the upper and lower Emma Creek subwatersheds from 2009 to 2011 (Figure 4, Appendix B). In the paired study, the lower watershed was used as the control watershed while project partners implemented best management practices (BMPs) in the upper watershed – the treatment watershed.

Between 2009 and 2010, landowners installed numerous BMPs in the Little Elkhart River watershed including the upper Emma Creek treatment watershed. As a result, water quality in the Emma Creek Tributary is improving. Data collected along the impaired segment (Figure 4) show that pollutant levels decreased in 2009–2010 as compared to 2007–2008 (Table 8, Appendix A).

Key to this restoration effort was the participation of members of the Amish community, which comprises about 75 percent of the agrarian population of the Emma Creek watershed. Participation in cost-share programs by this community has been traditionally low. Outreach and education proved to be a successful strategy in convincing the community to change their management practices to protect water quality, including installing some BMPs without financial assistance.

Data collected by the SWCD at the mouth of Emma Creek showed similar improvements in water quality, indicating that the benefits realized by the BMPs implemented in the upper watershed carry through the watershed and into the Little Elkhart River. Net load reductions in the Emma Creek watershed were 42 percent for *E. coli*, 20 percent for nitrates, 58 percent for total suspended solids, 63 percent for total phosphorus, and 89 percent for ammonia. With the exception of *E. coli*, all of these parameters are associated with watershed-based improvements eventually leading to healthier biological communities.

In 2011 IDEM returned to the Emma Creek tributary to monitor for improvements in the fish community. The IBI score indicated that no significant change in biological condition has yet occurred suggesting a time-lag between BMP implementation and the habitat recovery necessary to fully support a healthy fish community. Although the SWCD data appear to show that ammonia levels are meeting water quality standards, the stream cannot be removed from the 303(d) list for ammonia until data meeting IDEM's data quality requirements for CWA Section 305(b) assessments are available. The impaired segment must remain listed as impaired for both IBC and ammonia.

These water quality improvements are the result of collaboration between the Lagrange County SWCD, IDEM, Indiana Department of Natural Resources, the Great Lakes Commission and the Natural Resources Conservation Service (NRCS). The Lagrange County SWCD sponsored the development of the WMP and coordinated the implementation of the paired watershed study with funding and assistance from IDEM. IDEM also provided more than 1.7 million in CWA Section 319(h) funding to implement BMPs. The Indiana Department of Natural Resources and Great Lakes Commission provided additional funding for watershed land treatment practices and implementation of the WMP, with contributions of \$75,000 and \$515,000, respectively. NRCS provided engineering design and support. And, landowners in the watershed paid \$30,000 out-of-pocket to install BMPs without the added incentive of cost-share funding.

#### Watershed Restoration Work Improved a Section of Indian Creek

The Devils Backbone section of Indian Creek is a 21-mile reach in Harrison County, Indiana, just upstream of Indian Creek's confluence with the Ohio River (Figure 5, Appendix B). Water quality data collected from this reach by IDEM in 2000 indicated that the geometric mean of the *E. coli* samples collected as well as the individual sample results exceeded the state's water quality criteria for recreational use. In addition, four out of the six dissolved oxygen results were below the levels set in the water quality standards for the protection of aquatic life use. Given these results, IDEM added the Devils Backbone section of Indian Creek to the 303(d) list in 2002 for and *E. coli* and low dissolved oxygen.

From 1996 to 2010, numerous state and federal partners and other organizations funded watershed planning and restoration efforts in the Indian Creek watershed. As a result, water quality conditions in the Devils Backbone reach have improved.

From 1996 to 2006 The Nature Conservancy (TNC) provided \$210,000 in funding for stream restoration and outreach projects in the Indian Creek watershed. Then in 2006, IDEM awarded the Harrison County Regional Sewer District a CWA Section 205(j) almost \$100 thousand in grant funds to develop a watershed management plan (WMP) for the Indian Creek watershed. The resulting WMP helped to inform the installation of numerous BMPs throughout the watershed, targeting areas where they might have the greatest impact.

Project partners in the Indian Creek watershed used \$687,567 in financial and technical assistance provided through the NRCS' Environmental Quality Incentives Program (EQIP) to implement numerous conservation practices between 2003 and 2010. Additional practices were also installed during this time with \$55,094 in Farm Service Agency (FSA) Conservation Reserve Program (CRP) funds. Harrison County also allocated \$950,000 between 2002 and 2010 toward agricultural BMPs in the county and used funding from the Clean Water Indiana state fund to install additional BMPs in the Indian Creek watershed.

In 2010, IDEM returned to monitor the Devils Backbone reach of Indian Creek and found that water quality has improved, with results meeting the state's water quality standards for *E. coli* and dissolved oxygen. Based on these results, Indiana removed the Devils Backbone section of Indian Creek from its 2014 CWA section 303(d) impaired waters list.

### *Grand Calumet River Indiana Harbor Ship Canal Area of Concern*

Prior to strict environmental regulations industries, factories, and municipal sanitary districts commonly discharged chemicals and contaminants directly into the Grand Calumet River in northwest Indiana. The accumulation of such pollution containing oils and greases in the river sediments caused drastic harm to the ecosystem. By the 1980s, new environmental regulations changed how municipalities and industries could operate, which reduced the amount of contaminants being discharged into the river. However, even with new operational standards the impacts of legacy contaminants – those discharge prior to the change in regulations – had already caused great harm to the river. The Grand Calumet River was highly impaired for human and wildlife use and as a result, was identified by the International Joint Commission as an Area of Concern (AOC). The Grand Calumet River Indiana Harbor Ship Canal AOC is one of 43 AOCs identified by the commission in its 1978 Great Lakes Water Quality Agreement (GLWQA). The GLWQA requires that each AOC have a Remedial Action Plan (RAP) developed for it to provide a blueprint for the remediation of 14 designated beneficial use impairments (BUIs) of the waterway.

1. Restrictions on fish and wildlife consumption
2. Tainting of fish and wildlife flavor
3. Degradation of fish and wildlife populations
4. Fish tumors or other deformities
5. Bird or animal deformities or reproduction problems
6. Degradation of benthos
7. Restriction on dredging activities
8. Eutrophication or undesirable algae
9. Restrictions on drinking water consumption, or taste and odor
10. Beach closings
11. Degradation of aesthetics
12. Added costs to agriculture and industry
13. Degradation of phytoplankton and zooplankton populations
14. Loss of fish and wildlife habitat

For Indiana this meant that IDEM would take the lead in developing the RAP with the aid of the Citizens Advisory for the Remediation of the Environment (CARE) Committee – a group of individuals selected by IDEM to provide input into the RAP planning process.

The RAP identifies key projects including sediment remediation for the entire river system as well as habitat restoration on over 900 acres. Through the assistance of the Great Lakes Legacy Act (GLLA) and the Great Lakes Restoration Initiative (GLRI) as well as funding from state and local sponsors, significant progress has been made toward the RAP restoration goals. In 2011 and 2012 respectively BUI #12 and BUI #9 were removed from the list of impairments for the Grand Calumet River Indiana Harbor Ship Canal AOC. Since the early 2000s more than 3.25 million cubic yards of contaminated sediments containing heavy metals, polycyclic aromatic hydrocarbons, and polychlorinated biphenyls have been removed. An additional 14,600 cubic



yards of sediment are expected to be removed by the end of 2016. Habitat restoration has also been a priority, with GLLA projects restoring 84 acres of wetland and riverine marshes including Roxana Marsh in East Chicago, Indiana and Seidner Dune and Swale in Hammond, Indiana. In addition, the GLRI has funded the restoration of more than 800 acres throughout the AOC including key dune and swale habitats such as Clark and Pine Nature Preserve, DuPont Natural Area and Gibson Woods Nature Preserve. GLRI-funded projects are expected to conclude in 2020.

Monitoring throughout the restoration process is essential to ensure work is on track to meet restoration goals. IDEM has implemented monitoring projects to assess fish and benthic communities, water chemistry and aesthetics and provides GLRI funds to universities and federal agencies to monitor algal and plankton populations in the river and conduct microbial source tracking at AOC beaches.

### **SPECIAL STATE CONCERNS AND RECOMMENDATIONS**

Reductions in federal and state resources for data collection and analysis coupled with increased federal directives and competing policy and program objectives continue to strain IDEM's ability to optimize its limited resources to monitor Indiana waters in order to support Office of Water Quality (OWQ) programs and emerging state priorities.

IDEM acknowledges that fiscal responsibility may necessitate reductions in funding and staffing levels. In light of these constraints, IDEM recommends the following actions:

- Increase states' flexibility to allocate the federal funding it receives to take advantage of and optimize other funding sources.
- Combine supplemental and base funding to states provided through Clean Water Act (CWA) Section 106 funds so that in lean times, maintaining current monitoring efforts may be considered by the U.S. Environmental Protection Agency (U.S. EPA) as a valid use of supplemental funds.
- Eliminate the use of states' 2002 303(d) lists as the baseline for showing CWA program successes – this is a false construct that fails to recognize that other more recently listed waters may be better candidates for restoration in the short term.
- Acknowledge the continuum of progress demonstrated by social indicators or other factors in addition to measurable water quality improvements.

### **SURFACE WATER MONITORING AND ASSESSMENT**

IDEM conducts most of its surface water monitoring through various programs in the Watershed Assessment and Planning Branch (WAPB). This section includes a discussion of IDEM's surface water monitoring strategy, a description of the assessment methodology for classifying all surface waters according to the degree to which they meet their designated uses, and the most current assessment results available. This section also provides a description of Indiana's Wetlands Program, an analysis of surface water quality trends, and information on public health issues.

## **SURFACE WATER MONITORING STRATEGY**

The United States Environmental Protection Agency (U.S. EPA) recommends that states develop a comprehensive monitoring program strategy for collecting the data and information needed to address its water quality management needs. IDEM developed its first IDEM's Water Quality Monitoring Strategy (WQMS) in 1995 (IDEM, 1995), which has undergone a number of revisions, most recently in 2011 (IDEM, 2010). Table 10 shows the Office of Water Quality's (OWQ's) primary water quality monitoring objectives identified in IDEM WQMS and the types of monitoring needed to meet them.

IDEM's WQMS uses a watershed approach to prioritize water quality management needs and the monitoring activities intended to meet them. Most of IDEM's surface water monitoring is conducted by the WAPB within IDEM's Office of Water Quality (OWQ). The WAPB includes several Clean Water Act (CWA) programs and conducts both targeted and probabilistic (randomized) monitoring to meet the following objectives:

- To fulfill requirements of the CWA Sections 305(b), 303(d) and 314 to assess all waters of the state to determine if they are meeting their designated uses and to identify those waters that are not.
- To support OWQ programs including WQ standards development, NPDES permitting, and compliance.
- To support public health advisories and address emerging water quality issues.
- To support watershed planning and restoration activities.
- To determine WQ trends and evaluate performance of programs.

For its Probabilistic Monitoring Program, IDEM has divided the state into nine major water management basins and employs a rotating basin strategy that targets a different basin each year (Figure 6, Appendix B). IDEM's 305(b) assessment and 303(d) listing processes also follow this rotating basin approach, which ensures that all basins in the state are assessed at least once every nine years.

Probabilistic monitoring is conducted within a given basin and the results are reviewed for quality assurance and quality control in year one. In year two, the quality-assured data are used to make water quality assessments for the basin. These assessments and any waterbody impairments identified through these assessments are reported in the next biennial integrated reporting cycle. Appendix G provides a detailed schedule of IDEM's 305(b) assessment and reporting, and 303(d) listing activities before and after the change made to the rotating basin approach.

IDEM's targeted monitoring programs select sites based on their specific program objectives. Therefore, data collected from these programs in a given year may come from anywhere in the state, which may or may not include the basin monitored by the Probabilistic Monitoring Program that year. These data are likewise quality assured and are assessed as they become available.

The following monitoring programs are employed to achieve the above objectives:

- Probabilistic monitoring in one basin/year on a nine-year rotating basin cycle.
- Fixed station monitoring at 163 sites across the state.
- Fish tissue and sediment contaminants' monitoring on a five-year rotating basin cycle.
- Targeted monitoring for TMDL reassessments and development, watershed baseline planning, and performance measures.
- Cyanobacteria monitoring of 10-12 lakes.
- Special studies such as that conducted to support hydrographically controlled release facilities.

Lakes monitoring is conducted by the Indiana Clean Lakes Program (CLP) under contract for IDEM and is discussed in later sections of this report.

#### *Probabilistic Monitoring Program*

IDEM's Probabilistic Monitoring Program samples at least 38 randomly selected sites in a given basin and is the primary source of data used in IDEM's CWA assessments. This program, which focuses specifically on rivers and streams, is designed to characterize the overall water quality in each major river basin and to identify specific waterbodies within each basin that are not fully supporting their beneficial designated uses.

IDEM uses the data collected by the Probabilistic Monitoring Program to make water quality assessments of rivers and streams at two different spatial scales, reach-specific assessments and basin-wide assessments.

#### Reach-specific Use Support Assessments

IDEM uses the data collected by the Watershed Monitoring Program to make use support assessments of the stream or stream reach from which they were collected and any other reaches for which the results are representative. For these assessments, the water quality data are compared to applicable water quality criteria to determine whether or not the reach or reaches represented by the data are supporting one or more of their designated uses. Results from IDEM's reach-specific assessments are summarized in the "Rivers and Streams Water Quality Assessment" section of this report. In addition to data collected through the Watershed Monitoring program, IDEM also uses data collected by the agency's other water monitoring programs to make reach-specific assessments and may use data from external sources if they meet the necessary data quality requirements.

#### Comprehensive Use Support Assessments

Comprehensive assessments are statistical calculations that allow IDEM to predict with reasonable certainty the percentage of Indiana's rivers and streams within a given basin that are either impaired or supporting their designated uses. Comprehensive use support assessments are

based solely on the reach-specific assessment results from data collected by the Probabilistic Monitoring Program because, unlike data collected through other IDEM monitoring programs and most external organizations, these data are collected using a probability-based sampling design, which is necessary to make statistically valid calculations.

IDEM's comprehensive use support assessments and its reach-specific assessments of designated use support provide water quality information in two very different ways, and IDEM uses both types of assessments to meet different CWA requirements. The agency's comprehensive assessments, which rely on probabilistic data, provide statistically valid statements about the overall water quality throughout Indiana on a basin level, which allows IDEM to meet the CWA requirement to assess all the waters of the state. These results are stated as the percentage of the total stream miles in each basin meeting their designated uses and the percentage that are impaired. These percentages are statistically derived and cannot be applied to specific streams or stream reaches. Given this, they do not identify where specific impairments exist, which is required by Section 303(d) of the CWA. Information regarding the location of impairments is provided by IDEM's reach-specific results, which are based on data collected from a variety of sources including IDEM's Probabilistic Monitoring Program.

This report provides comprehensive assessments for watersheds in all of Indiana's major basins (Appendix H) in addition to summaries of results from IDEM reach-specific assessments (Appendix I). This report also includes the 2016 draft 303(d) List of Impaired Waters (N), which identifies waters that are impaired for one or more designated uses.

This report builds on the water quality assessment results reported in the 2014 Integrated Report and includes revised assessments for the Patoka River monitored in 2012 and the East Fork White River monitored in 2013. This report also contains assessment information based on total maximum daily loads developed in other basins throughout Indiana.

#### **DATA QUALITY ASSURANCE AND QUALITY CONTROL**

To ensure the quality of the data used in IDEM's Clean Water Act Section 305(b) assessments, all surface water monitoring is conducted in accordance with IDEM's quality assurance project plan (QAPP) for its surface water monitoring programs. This QAPP is part of IDEM's overall quality management plan approved by the U.S. Environmental Protection Agency (EPA). IDEM's surface water monitoring QAPP was most recently revised in October 2004 and complies with the 2002 U.S. EPA guidance (U.S. EPA, 2002).

The QAPP outlines specific data quality objectives and serves as a tool for planning for the collection of environmental data to support IDEM Office of Water Quality needs. Additionally, the QAPP describes a well-defined data quality assessment process for reviewing analytical data and categorizing analytical results in one of four levels of data quality. These data quality levels are used to determine the usability of the data for water quality assessments and other decisions.

## DATA MANAGEMENT

### *Management of Water Quality Monitoring Data*

IDEM's Watershed Assessment and Planning Branch (WAPB) in the Office of Water Quality (OWQ) maintains its surface water quality data in the Assessment Information Management System (AIMS) database. The AIMS houses several types of data including surface water chemistry data, fish and macroinvertebrate community data, assessments of habitat quality, results from algal monitoring, and fish tissue and sediment contaminant data.

Water chemistry and fish community results from water quality monitoring programs which were collected prior to 2014 have been uploaded into the new U.S. Environmental Protection Agency (EPA) EnviroFacts Data Warehouse through the Water Quality Exchange (WQX). IDEM is continuing modifications to the AIMS database that will improve quality control and usability of results uploaded through the WQX.

Recent modifications to the AIMS database now allow for more efficient datasheet upload and retrieval with additional search functions for faster query building through a user-friendly interface for staff members. AIMS also now allows for storage of additional water quality data from nonpoint source (NPS) projects (including estimated load reductions) and third-party datasets for potential use in assessing waters for the integrated report. IDEM is now receiving data from NPS projects for import into the AIMS database. IDEM is working to develop and implement standard operating procedures for receiving, assessing, and importing water quality data from third-party sources to make them more readily available for potential use in IDEM's water quality assessments.

The load reduction estimates provided by the NPS project sponsors, which are housed in AIMS and reported to U.S. EPA through its Grants Reporting and Tracking System are included in this report (Table 4). The load reductions are estimated using models and are used to assist in the evaluation of water quality sampling data collected by the project sponsors and IDEM WAPB staff.

### *Management of Water Quality Assessment Information*

IDEM's WAPB maintains IDEM's assessment database (ADB). The assessment database houses the CWA Section 305(b) assessment decisions that have been made on the basis of the results stored in the AIMS database.

In the ADB, water quality assessment information is associated with a specific waterbody assessment unit (AU), which is assigned a unique assessment unit identifier (AUID). The geographical extent and location of each AU within a given watershed based on its 12- or 14-digit hydrologic unit code (HUC)<sup>3</sup> is defined for mapping purposes through a process called

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<sup>3</sup> Hydrologic unit codes (HUCs) are a numbering system used to identify watersheds at various scales. The length of the code corresponds to the relative size of the watershed with 12- or 14-digit HUCs assigned to smaller watersheds that lie within larger watersheds, which are identified by 8- or 10-digit HUCs.

reach indexing. Reach indexing uses tools that work within geographical information systems (GIS) software to associate one or more reaches of a given waterbody to a single AU and to “key” these AUs to the National Hydrography Dataset (NHD)<sup>4</sup>. This “key” is called the Reach Index. By associating the information in the ADB to its geographic location, the Reach Index allows IDEM to display assessment information on a map through the use of GIS software.

Indiana lakes and reservoirs, including Lake Michigan, are each treated as a single AU and assigned an AUID based on the 12- or 14-digit watershed in which they are located. Sizes are reported in acres.

Indiana’s Lake Michigan shoreline is divided into five separate AUs with AUIDs based on the 8-digit HUC in which each shoreline reach is located. The shoreline is measured and reported in miles.

All flowing waters are measured and reported in miles. The Ohio River is divided into 69 AUs ranging in size between 2-14 miles and with AUIDs that are likewise associated with the 8-digit HUCs in which they are located. Other Indiana rivers and streams in the Reach Index may be divided or combined into one or more AUs, each of which is assigned an AUID based on the 12-digit HUC in which it is located. The length of a stream AU can vary, and a single AU may or may not represent the entire stream to which it is associated. For example, large rivers are commonly broken into smaller, separate AUs while smaller streams may be grouped together into a single, “catchment” AU based on hydrology and other factors that can affect water quality. More detailed information on how IDEM determines the size extent of a given AU is provided in its Consolidated Assessment and Listing Methodology (Appendix N).

IDEM’s biennial Integrated Report (IR) to U.S. EPA includes the ADB. U.S. EPA extracts the data contained in the ADB for incorporation into its Assessment, TMDL Tracking and Implementation System (ATTAINS). ATTAINS is a national database U.S. EPA uses to evaluate assessment data submitted by states and to make those data available to the public online.

In 2014, U.S. EPA convened four workgroups to redesign ATTAINS. These workgroups were comprised of headquarter and regional staff along with staff from several state agencies. IDEM participated in two of these workgroups to help:

- Define the data elements needed in the redesigned ATTAINS.
- Draft an extensible markup language schema for exchanging integrated reporting information between the states and U.S. EPA.
- Develop recommendations on data exchange approaches and system design.

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<sup>4</sup> The NHD is a database created by the U.S. EPA and the United States Geological Survey that provides a comprehensive coverage of hydrographic data for the United States. It uniquely identifies and interconnects the stream segments that comprise the nation’s surface water drainage system and contains information for other common surface waterbodies such as lakes, reservoirs, estuaries, and coastlines.

The new ATTAINS became available for states to begin using in late 2015. In 2016, IDEM will begin migrating the assessment data presently housed in its ADB to the new ATTAINS online. Once this process is complete and the data verified, IDEM will begin entering its water quality assessments and other integrated reporting information directly into ATTAINS instead of sending its ADB to U.S. EPA for upload into the system.

## **WATER QUALITY ASSESSMENTS**

Indiana's water quality standards (WQS) provide the basis for IDEM's Clean Water Act (CWA) Section 305(b) water quality assessments and are intended to protect the beneficial uses for Indiana waters. IDEM's water quality assessments determine the degree to which Indiana's waterbodies are supporting aquatic life use, recreational uses, and fishable uses. IDEM also assesses drinking water use support on surface waters that serve as a public water supply. There are additional uses for Indiana waters described in the state's WQS. However, IDEM limits its assessments to these four because the criteria in place to protect them are more stringent than those necessary to protect other uses. Thus, by protecting these uses, other uses such as agricultural and industrial uses are also protected.

### *Water Quality Data Used to Make Designated Use Assessments*

IDEM uses all existing and readily available data to make its CWA Section 305(b) water quality assessments, including data collected by IDEM's water quality monitoring programs as well as external sources whenever possible. Internally, IDEM draws from the following Office of Water Quality (OWQ) monitoring programs:

- Probabilistic Monitoring Program
- Fixed Station Monitoring Program
- Contaminants Monitoring Program
- Performance Measure Monitoring Program
- Special Studies Program
- Watershed Characterization Program

In addition to the water quality data IDEM collects, the agency reviews data from other sources for potential use in its CWA assessments, including data collected through partnerships with other state and federal agencies and by nonpoint source grant projects, including the Indiana Clean Lakes Program (CLP).

IDEM is committed to making greater use of external data not only in its CWA Section 305(b) assessments but wherever possible in all OWQ programs. On September 23, 2015, IDEM launched its External Data Framework (EDF) to provide a systematic, transparent, and voluntary means for external organizations to share the water quality data they collect with IDEM for possible use in its CWA assessment and listing processes and other OWQ programs.

A number of organizations submitted their data sets in response to solicitations conducted by IDEM when the EDF was still under development. IDEM was able to complete its review of

these data and found that the external data sets shown in Table 11 (Appendix A) met the necessary data quality requirements for the 305(b) and 303(d) assessment and listing processes that were in place at the time they were submitted. However, with continued development of EDF, these requirements have since been revised.

In addition, the data sets in Table 11 were not standardized in any way in terms of their format or the data quality documentation provided. The time and staff resources required to review data sets from varied sources in various formats and with various levels of data quality documentation have long been significant barriers to the use of external data in the development of state 303(d) lists. The EDF will remove these barriers going forward.

For the 2016 cycle, IDEM focused its resources on completing development of the EDF rather than investing the significant time that would be required to re-evaluate data sets that may no longer be representative of current conditions. Now that the EDF is complete, IDEM will contact early EDF participants and work with them directly to submit any more current data they might have through one of the three data submittal processes built into the EDF. These processes are designed to facilitate broader solicitation and more efficient data quality review of external data going forward. In cases where the data set originally submitted *are the only data available for the waterbody in question, IDEM will evaluate the data set as time allows to determine if the results are reliable for assessment despite their age.*

External organizations can learn more about the EDF and how to participate on the agency's EDF website at <http://in.gov/idem/cleanwater/2485.htm>. Those interested in sharing their water quality data through the EDF and may begin submitting data sets to IDEM in one of three ways through the Secondary Data Portal at: <http://www.hoosieriverwatch.com/portal/>

### *Water Quality Assessment Methodology*

IDEM's CWA Section 305(b) water quality assessments are conducted in accordance with its Consolidated Assessment and Listing Methodology (CALM), which is provided in Appendix N.

Water quality assessments are made for each designated use and waterbody type by comparing the available with the applicable WQS following the methods articulated in the CALM and summarized in Table 12 (Appendix A). Assessment results are then entered into IDEM's Assessment Database, which IDEM uses to compile its Consolidated List and 303(d) List of Impaired Waters.

### Assessment Methods for Public Water Supply

IDEM's methods for determining support of the public water supply (previously referred to as the "Drinking Water Use") have changed very little since 2002 when IDEM published its first CALM. While these methods provide the ability to make assessments for a wide variety of potential drinking water contaminants, generally, there is very little data available for use in making such assessments. In addition, for lakes and reservoirs, IDEM's method for determining whether the source water is supporting the public water supply use relies solely on whether or



not a facility has applied for a permit to apply chemicals on the waterbody to control algae – an indirect measure of use support lacking the follow-through necessary to determine whether the chemicals were in fact applied.

Given these issues, IDEM convened an internal work group in 2015 to review the current methodology and explore ways to improve the assessment of the quality of surface waters designated as source waters for public water supplies. The result of this effort is a new set of methods for determining use support for waters that serve as a source of public water supply.

IDEM has published these methods in its notice of comment period for the draft 2016 303(d) list (Appendix L). IDEM hopes to implement these methods beginning with the 2018 integrated reporting cycle. However, further refinements may be needed based on the information received during the public comment period. In the meantime, although IDEM currently lacks the resources to support a new monitoring program dedicated to monitoring source waters for public water supplies, IDEM is continuing to explore strategies for increasing the amount of available data for source water assessments. IDEM believes that these methods, coupled with more readily available data for assessments, will result in greater protection of Indiana’s public water supplies going forward.

#### Assessment Methods for the Ohio River

For the Ohio River, IDEM collaborates with the Ohio River Sanitation Commission (ORSANCO) to conduct water quality assessments of the river reaches that border Indiana. ORSANCO is an interstate water pollution control agency for the Ohio River established through a compact agreement between member states and approved by Congress. Under the terms of the compact, member states cooperate in the control of water pollution in the Ohio River Basin.

ORSANCO collects most of the data used to make assessments and works with the compact states to determine the degree to which the Ohio River is meeting its designated uses. Based on the results of this collaborative assessment, ORSANCO produces a CWA Section 305(b) water quality assessment report for the Ohio River every two years. Member states then incorporate those results into their individual CWA 303(d) lists in accordance with their individual 303(d) listing methods. A more detailed discussion of the Ohio River assessments can be found in IDEM’s CALM (Appendix NAppendix N).

Although the assessment methodology for the Ohio River differs somewhat from the methods IDEM uses to assess other Indiana rivers and streams, the assessment results for all rivers and streams in Indiana, including the Ohio River are combined for the purposes of this report.

## REPORTING WATER QUALITY ASSESSMENT RESULTS

### *Indiana's Consolidated List*

For the purposes of CWA 305(b) reporting, IDEM employs a multi-category approach to develop the state's Consolidated List, which provides a full inventory of all Indiana waters IDEM tracks in its ADB and information regarding the degree to which they are supporting their designated uses.

With a multi-category approach, every waterbody in the ADB is placed into one of five categories (or subcategories where applicable) for each of the following designated uses: aquatic life use, recreational use, fish consumption<sup>5</sup>, and public water supply<sup>6</sup>.

For each use, a waterbody is assessed as fully supporting when it is found to be meeting the WQS applicable to the use. When a waterbody is not meeting one or more of the applicable standards, it is considered impaired, meaning it is not fully supporting the use. Figure 7 in Appendix B illustrates the decision-making process IDEM uses to determine the appropriate category for each use for which a waterbody is designated. A more detailed explanation of the five categories and their subcategories is provided in IDEM's CALM (Appendix N). The following provides a summary:

- Category 1 The available data and/or information indicate that all designated uses are supported and no use is threatened.
- Category 2 The available data/or information indicate the individual designated use is supported.
- Category 3 The available data and/or other information are insufficient data to determine if the individual designated use is supported.
- Category 4 The available data and/or information indicate that the individual designated use is impaired or threatened but a total maximum daily load (TMDL) is not required.
- Category 5 The available data and/or information indicate the individual designated use is impaired or threatened, and a TMDL is required.

Indiana's Consolidated List for 2016 is provided in Appendix I and includes the results of all assessments of Indiana waters to date.

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<sup>5</sup>Fish consumption is not a designated use in Indiana's WQS. IDEM assesses Indiana waters for fish consumption pursuant to current U.S. EPA policy and in keeping with CWA goals, which are reflected in Indiana's WQS (327 IAC 2-1-1.5 and 2-1.5-3).

<sup>6</sup>Applicable only to waters that serve as a routine or emergency source of water for a public water system.

### *Indiana's 303(d) List of Impaired Waters*

The 303(d) List of Impaired Waters is a subset of the Consolidated List and includes only Category 5 waters – those for which a TMDL is required. Unlike the Consolidated List, which is required under CWA Section 305(b), the CWA Section 303(d) List of Impaired Waters is subject to U.S. EPA approval.

On May 8, 2013, U.S. EPA partially approved Indiana's 2010 303(d) List of Impaired Waters. U.S. EPA's partial approval is based on concerns regarding IDEM's methods for evaluating metals data for the purposes of determining impairment. More detail about these concerns and IDEM's response to them can be found online at: <http://www.in.gov/idem/nps/3889.htm>.

The issues delaying full approval by U.S. EPA remain unresolved. In the meantime, IDEM has continued to conduct water quality assessments and remains committed to reporting the results of its assessments to the public.

To ensure that Indiana's 303(d) list contains the most up-to-date assessment information, each 303(d) list builds upon the list developed for the previous two-year reporting cycle. Therefore, to develop its 2012 303(d) List of Impaired Waters, IDEM used the approved portion of the 2010 303(d) list as a starting point. IDEM used the same approach to develop the 2014 303(d) list and now, the draft 2016 303(d) list, building each from the list submitted for the previous cycle.

The Notice of Public Comment Period, which includes the draft 2016 Section 303(d) Impaired Waters List (Category 5 of the Consolidated List) and the Consolidated Assessment and Listing Methodology used to develop it is included in Appendix L of this report. The draft 2016 303(d) list reflects the most current information IDEM has regarding the status of impairment of Indiana's surface waters.

### **CLEAN WATER ACT SECTION 305(B) ASSESSMENTS**

This report provides summary assessment results for designated use support for waters throughout Indiana based on waterbody type. Lakes and reservoirs are each assigned a single AUID with sizes reported in acres. Due to its large size and unique characteristics as compared to other freshwater lakes in Indiana, Lake Michigan and its shoreline are each discussed in separate sections of this report. Results for Lake Michigan reported in acres, and results for the shoreline are reported in miles. Assessment information for rivers and streams are likewise discussed in a separate section of this report with results given in miles.

Each section provides a table summarizing designated use support by individual use and total size in miles or acres. It should be noted that these values are not additive because a single waterbody is typically designated for at least three uses and sometimes four. Thus, adding the total values reported for each use would result in far more stream miles and lake acres than what actually exists in Indiana.

Summary results regarding the causes/stressors and sources of impairment are also provided for each water body type. As with the values in the summary tables for designated use support, the summary values in each table should not be added because doing so will artificially inflate the number of miles or acres actually impaired. A summary of the total number of impaired waters in Indiana waters to date is provided in Appendix O.

Causes of impairment identified in the summary tables are those pollutants or other stressors that contribute to the actual or threatened impairment of designated uses in a waterbody. In some cases, only the symptom(s) of impairment can be identified. For example, IDEM may have evidence that biotic communities in a waterbody are impaired but the data are insufficient to determine the actual pollutant or stressor causing the impairment. In these cases, the symptom – impaired biotic communities – are treated as the cause of impairment for the purposes of this report.

The sources shown in the summary tables are the activities that contribute the pollutant(s) or create other stressors that result in impairment of a designated use. For most assessments, the sources identified at the time of assessment for a given impairment are not precisely known, this is because IDEM's monitoring and assessment processes are designed to identify impairments, not specific sources.

Accurately attributing a given impairment to specific sources is difficult at best without more detailed and resource intensive sampling and analyses than and is in many cases impossible to do with a high degree of certainty. This kind of monitoring is typically conducted with watershed characterization monitoring during total maximum daily load (TMDL) development, which must identify the sources of impairment to a waterbody and develop recommended loadings to support its restoration.

The sources identified during the assessment process and summarized in the following sections represent those sources determined by IDEM staff to be the most likely sources given a variety of factors, including but not limited to:

- Land uses (as indicated by field observations and land use data from published sources such as the U.S. Geological Survey Gap Analysis Program, aerial photography, etc.).
- Field observations of potential sources such as illegal straight pipes, tillage to the stream's edge, livestock in the stream, etc.
- The presence of permitted facilities within close proximity of the impaired waterbody in cases where the impairment is something that could reasonably be expected to be associated with the discharge of those facilities.
- Naturally occurring conditions that could contribute to impairment.

IDEM believes that by using best professional judgment, scientists can distinguish the most likely sources of impairment in the watershed and provide a starting point for a TMDL, watershed planning or other activities aimed at restoring the waterbody.

### *Rivers and Streams Water Quality Assessment*

Rivers and streams are assessed for support of aquatic life use, recreational uses, and fish consumption. Where there is sufficient data, rivers and streams that serve as a source water for a public water supply are also assessed to determine the degree to which they support such use.

The number of stream miles in Indiana that have been assessed to date, and the number of miles fully supporting and impaired are shown for each individual use in Table 13 (Appendix A).

Table 14 (Appendix A) represents the total miles of streams affected by each cause/stressor in Indiana. These tables include identified causes of impairment and symptom of other unknown causes, including impaired biotic community status. For these impairments, the fish and/or benthic macroinvertebrate communities have been found to be impaired by substances or stressors not yet identified.

Table 15 (Appendix A) includes all the potential sources driving one or more of the impairments in Table 14, and the total stream miles impaired due to each. Potential sources include agricultural sources and sources resulting from urban activities and land development. Illicit connections identify “straight pipes” from buildings in unsewered areas that flow into state waters with no or insufficient treatment. Contaminated sediments are largely due to polychlorinated biphenyls (PCBs) that correlate with elevated PCB levels in fish tissue.

### *Great Lakes Shoreline Water Quality Assessment*

Indiana’s entire portion of the Lake Michigan shoreline was last assessed in 2001 and was found to be fully supporting of aquatic life use and fully supporting its use as a public water supply for the 33 miles so designated. All 59 miles of the shoreline in Indiana were assessed as impaired for recreational use and fish consumption.

The required total maximum daily loads for the shoreline’s recreational uses have been approved by U.S. EPA in 2004: <http://www.in.gov/idem/nps/2856.htm>. As a result, the *E. coli* impairments for which the shoreline has been assessed now appear in Category 4 of Indiana’s Consolidated List while the fish consumption impairments for PCBs and mercury in fish tissue remain in Category 5 (Indiana’s 303(d) list).

IDEM’s assessment results are summarized in Table 16 (Appendix A). The specific causes of impairment to Indiana’s Lake Michigan shoreline are reported in Table 17 (Appendix A), and the potential sources are summarized in Table 18 (Appendix A).

### *Lake Michigan Water Quality Assessment*

Because Lake Michigan is assessed as a single unit, any impairment identified in any part of the lake is applied to all 154,176 acres of Lake Michigan. Assessments made in the Indiana waters of Lake Michigan indicate impairment for mercury and PCBs in fish tissue. Tables 19-21 in Appendix A reflect the results of these assessments.

## *Lake Water Quality Assessment*

IDEM conducts two types of assessments on Indiana Lakes and Reservoirs. CWA Section 314 requires states to report on the trophic status and trends of all publicly owned lakes in Indiana, and CWA Section 305(b) requires states to report on the degree to which Indiana's lakes and reservoirs are supporting their designated uses. Both types of assessments and the methods with which they are conducted are described in IDEM's CALM (Appendix N).

IDEM evaluates lakes primarily for recreational uses and fish consumption for the purposes of CWA Section 305(b) assessments. While IDEM monitors several lakes and reservoirs for fish consumption, other types of monitoring for CWA Section 305(b) designated use support assessments of Indiana lakes is limited. As a result, IDEM's assessments have relied primarily on external data collected through the Indiana Clean Lakes Program for the purposes of CWA Section 314 assessments.

The monitoring conducted by the Indiana CLP provides results for all the parameters necessary to calculate an Indiana trophic state index (TSI) score, which allows IDEM to make both CWA Section 314 trophic state assessments and some CWA Section 305(b) assessments for recreational use. However, neither the individual parameter results nor the TSI scores are considered sufficient for determining the condition of biological communities for the purposes of Section 305(b) assessments for aquatic life use support.

Use support assessments of lakes and reservoirs for public water supply are also limited but for different reasons. Compared to other designated uses, which apply to all waters of the state, these assessments are made only to the relatively few lakes and reservoirs in Indiana that are used directly or indirectly as source water for public water supplies.

IDEM's assessment methods for CWA Section 305(b) assessments of lakes and reservoirs are described in more detail in its CALM (Appendix N, Attachment 1). Summary assessment results for the 2016 cycle are provided in Tables 22-24 (Appendix A).

### **CLEAN WATER ACT SECTION 314 ASSESSMENTS**

Section 314 of the federal Clean Water Act (CWA) requires states to report on the trophic status and trends of all publicly owned lakes in Indiana. To determine the trophic state for a given lake (the amount of biomass present at the time the measurement is taken), IDEM uses Carlson's Trophic State Index (TSI), which can be calculated for three variables, each of which can be used as independent indicators of the trophic state of the lake or reservoir in question. The three indicators used are Secchi depth (SD), total phosphorus (TP), and Chlorophyll-*a* (CHL). Although any of the three could be used to determine trophic state, IDEM uses the TSI for CHL to make its trophic state assessments because CHL concentrations provide a more direct measure of phytoplankton abundance than SD or TP. Lakes are classified based on their TSI (CHL) scores. Higher scores are an indicator of nutrient enrichment, which can come from both natural sources and sources related to human activities. Details on how the TSI (CHL) scores are calculated can be found in IDEM's CALM (Appendix N).

For the purposes of this report, Indiana lakes were placed into one of four classes based on their trophic state as measured by the Carlson TSI (CHL) score. These classes are shown in Table 25 (Appendix A). A summary of the trophic status information for lakes assessed to date is presented in Table 26 (Appendix A).

Lake trends based on changes in trophic status over time as indicated by TSI scores are summarized in Table 27 (Appendix A). Approximately 19 percent of the lakes assessed to date (20 percent of the acres assessed) show some water quality improvement as measured by a reduction in their trophic scores. Forty-one percent of the lakes assessed (23 percent of the acres assessed) appear to have relatively stable trophic conditions. Thirty-six percent of the lakes assessed to date (53% of the total acres assessed) show an increase in their trophic scores indicating that the trophic conditions are degrading.

The water quality trend is fluctuating for four percent of the lakes (four percent of the acres assessed). For these lakes, the lack of detectable trend may be due to abnormal seasonal effects or changing activities in the surrounding watershed. An unknown trend is used in this report in cases where the available data are insufficient to determine a trend.

Waterbody-specific results for trend and trophic status and trends for Indiana's lakes and reservoirs statewide are provided in Appendix J.

## **PUBLIC HEALTH/AQUATIC LIFE CONCERNS**

The release of toxic materials into the aquatic environment can produce harmful impacts:

- Contaminants present in acutely toxic amounts can directly kill fish or other aquatic organisms.
- Substances present in lesser, chronically toxic amounts can reduce densities and growth rates of aquatic organisms and/or become concentrated in their body tissues. These substances can be further passed to humans through consumption of the organism.
- Toxic materials in the water could potentially affect human health by contaminating public water supplies.

### *Fish Consumption*

In the last several years, advances in analytical capabilities and techniques and the generation of more frequent and higher quality toxicity information on chemicals have led to an increased concern about their presence in the aquatic environment and the associated effects on human health and other organisms. Because many pollutants are likely to be found in fish tissue and bottom sediments at levels higher than in the water column, much of the data on toxic substances used for fishable use assessments in this report were obtained through IDEM's Contaminants Monitoring Program.

While not all species of fish found in Indiana lakes and streams have been tested, carp are commonly found to be contaminated with both polychlorinated biphenyls (PCBs) and mercury at levels exceeding the state's benchmark criteria for these contaminants in fish tissue. Waterbodies in which exceedances are found are considered impaired for fish consumption and placed on Indiana's 303(d) List of Impaired Waters.

Fish consumption assessments are reported separately from aquatic life use in order to provide more information about each individual use. Concerns related to fish consumption should be evaluated independently by referring to the Indiana State Department of Health (ISDH) fish consumption advisories online at: <http://www.in.gov/isdh/23650.htm>. The 303(d) List of Impaired Waters is not designed to provide public health information whereas the fish consumption advisory is and as such is far more reliable for using in deciding how much fish might safely be consumed from a given waterbody.

### *Cyanobacteria and Algal Toxins*

Blue-green algae (cyanobacteria) continue to be a concern in Indiana lakes and reservoirs both with respect to recreational uses and public water supply for drinking water. Blue-green algae are common constituents of algal communities in lakes and many are known to produce potent toxins, which are now recognized as a potentially serious threat to human and animal health. Microcystin is the cyanotoxin most commonly monitored. In 2010, IDEM piloted a targeted monitoring effort to support the development of an interagency process for the development of public health advisories for blue green algae and algal toxins. Monitoring is conducted statewide at 14 swimming areas owned or managed by the Indiana Department of Natural Resources (IDNR) on a monthly basis from May through August. Sampling frequency is increased to biweekly for lakes where cyanobacteria densities are found to be greater than 100,000 cells per milliliter, as recommended by the World Health Organization.

The public is kept informed of the status of the sampled swimming areas by the [www.algae.IN.gov](http://www.algae.IN.gov) website and the IDNR site for the specific property. IDEM's website also incorporates public health information related to blue-green algae from the ISDH and the Board of Animal Health (BOAH) as well as other relevant information from government agencies and educational institutions. When the two-year grant period for the pilot project ended, IDEM incorporated a blue-green algae monitoring program as a part of its overall water monitoring strategy.

In 2010, IDEM also contracted with Indiana University's School of Public and Environmental Affairs (SPEA) to conduct a different, but related, pilot project to monitor Microcystin at all of the same lakes to be monitored for the Indiana Clean Lakes Program (CLP). Like the Microcystin monitoring conducted by IDEM, it is anticipated that the results from this monitoring will help IDEM to better understand the environmental variables associated with blue-green algal blooms and Microcystin production. However, results from the CLP Microcystin monitoring are not used to support the development of public health advisories because they are collected for a different purpose and use different methods than those used by IDEM to conduct its sampling.



IDEM does not use information collected through these monitoring programs to make 305(b) assessments because the environmental factors that influence the occurrence and production of algal toxins are still not well understood, and there are no federal drinking water standards for blue-green algae. However, algal toxins now appear on U.S. Environmental Protection Agency's (EPA's) federal drinking water contaminant candidate list (CCL 3), which is used to prioritize federal research and data collection efforts to help determine whether a specific contaminant needs to be regulated. Details regarding U.S. EPA's CCL are available online at: <http://water.epa.gov/scitech/drinkingwater/dws/ccl/ccl3.cfm#microbial>. It is anticipated that as more scientific information becomes available, including the development of a federal water quality criteria for algal toxins, it may be possible to develop water quality assessment methods that will allow IDEM to determine the impact that algal toxins may be having on designated uses of Indiana waters.

### *Fish Kills and Chemical or Other Spills*

A diverse and healthy fish community is considered an indication of good water quality. Serious public concern is often raised when dead and dying fish are noted in the aquatic environment because fish kills are sometimes evidence of a severe water quality problem. Fish kills also have the potential to impair the use of the waterbody in the short or long term. A fish kill can occur as a result of:

- An accidental or intentional spill of a toxic compound or oxygen depleting substance into the aquatic environment.
- A continuous industrial or municipal discharge due to a system upset which can result releases of atypical or unusually high concentrations of pollutants.
- Natural causes such as disease, extreme drought or depletion of dissolved oxygen from extreme weather conditions.

IDEM's Office of Land Quality tracks spills and fish kills that are reported to IDEM or discovered by agency staff. The total number of calls, spills, and kills recorded from 1998 to 2015 are listed in Table 28 (Appendix A).

## GROUND WATER ASSESSMENT

In order to be eligible for Clean Water Act (CWA) Section 106 grant funds, Indiana is required to have the means to monitor water quality and to annually update water quality data and include the results in their biennial Integrated Reports (IR) to U.S. Environmental Protection Agency (EPA). While the IR requirement pertains primarily to navigable waters, U.S. EPA guidance suggests that state updates should also include ground waters to the extent practicable. This section provides a summary of Indiana's ground water monitoring and protection programs, ground water/surface water interactions within Indiana, and ground water quality and ground water contamination sources.

## INTRODUCTION TO INDIANA GROUND WATER

Ground water is an important resource for Indiana citizens, agriculture and industry. The majority of Indiana's population relies on ground water for drinking water and other household uses. IDEM's 2014 Annual Compliance Report for Indiana public water supply (PWS) systems is online at: [http://in.gov/idem/cleanwater/files/dw\\_compliance\\_report\\_2014.pdf](http://in.gov/idem/cleanwater/files/dw_compliance_report_2014.pdf).

### *Major Sources of Ground Water Contamination*

The major contaminant sources impacting Indiana ground water are listed by general activity types in Table 29 (Appendix A). All sources listed are a potential threat to ground water. However, the degree to which the source is a threat to ground water depends on several factors with the most significant being hydrogeologic sensitivity. Other major risk factors include location of the contaminant source relative to drinking water sources, toxicity of the contaminant and the size of the population at risk. All risk factors listed in Table 29 were considered in the selection of the 10 priority contaminant sources, and those risk factors relevant to the highest priorities are identified. Classes of contaminants commonly associated with each high priority contaminant source are also given. Due to resource constraints, this information has not been significantly updated since the 2000 305(b) report. However, anecdotal evidence indicates the same major contaminant sources are impacting Indiana ground water now as they were at that time.

#### Fertilizers

Nitrate is a potential contaminant from commercial fertilizer and animal manure applications to farm land, and septic systems, all of which are considered high priority sources of potential contamination to Indiana ground water. Nitrate is a highly mobile and soluble contaminant and is most frequently detected in ground water contaminant in rural areas. However, determining the specific sources of nitrates detected in ground water can be difficult and costly.

When applied at the proper rate and time, commercial fertilizer poses little threat of contamination to ground water. Purdue University Cooperative Extension Service staff, Natural Resource Conservation Service staff, and private consultants assist crop producers in developing nutrient management plans that focus on meeting crop nutrient needs.

On July 28, 2010, the Indiana rule requiring certification for distributors and users of fertilizer materials (355 IAC 7-1-1) became effective and is administered through the Office of the Indiana State Chemist (OISC). The rule was supported by a variety of agricultural groups and other stakeholders who envisioned this as an opportunity for fertilizer material applicators and distributors to demonstrate their competency to handle and apply these materials safely and effectively. In addition, the rule provides a statewide standard for applicator certification and training.

For purposes of this rule, "fertilizer material" is defined to mean both commercial fertilizer and manure from a confined feeding operation (CFO). Any person hired to apply, handle, or

transport fertilizer material for the purposes of producing an agricultural crop must be certified and licensed by OISC. Alternatively, he or she must be trained and supervised by a certified applicator and be working for a licensed fertilizer business. Any person applying manure from a CFO (in excess of 10 cubic yards or 4,000 gallons per year) to his/her own property must be certified by OISC as a private fertilizer applicator. Any person, partnership, corporation, or business that only distributes but does not use fertilizer material must obtain a fertilizer distributor business license.

### Confined Feeding Operations

Livestock and poultry confined feeding operations exist throughout Indiana and are an integral component of Indiana's agricultural economy. The primary concerns associated with CFOs are the proper storage and land application of the large volumes of manure produced by these operations. The manure is applied to farmland to recycle the nutrients to fertilize crops. Manure contains ammonia-nitrogen which is converted to nitrate through biological processes in the soil. Consequently, the rate of manure application to farmland is a major concern when the application provides more nitrogen than a crop will use. Because excess nitrogen can move beyond the crop root zone and potentially into underlying aquifers, Indiana's current regulations for CFOs require the proper design and construction of manure storage structures and the application of manure to land in a manner that protects ground and surface water quality. Crop nutrients contained in manure are available at a slower rate than commercial fertilizer nutrients due to the rate of decomposition of the manure. Therefore, when applied at the proper agronomic rate, manure poses little threat of contamination to ground water.

### Septic Systems

Properly constructed and maintained septic systems provide satisfactory on-site treatment of domestic wastewater in rural and unsewered suburban areas of Indiana. However, improperly constructed or poorly maintained septic systems, as well as systems operating in areas of high seasonal water tables or other ground water sensitive areas, are also of concern as a source of nitrate contamination to ground water.

### Landfills and Underground Storage Tanks

Landfills and underground storage tanks are a high priority concern for ground water largely due to practices or activities that occurred prior to construction standards and legislation established for the protection of ground water. Landfills constructed after 1988 have been required to adhere to stringent construction standards. Since then, all underground storage tank registrations, upgrades, closure activities and site assessments have been closely reviewed by the IDEM's Underground Storage Tank (UST) Section.

IDEM ensures that all regulated UST system owners and operators properly registered, upgraded and/or closed existing UST systems in accordance with state requirements. Currently, IDEM inspects all USTs systems at least once every three years to ensure that systems are properly designed and operated for corrosion protection, spill and overflow protection, and leak detection in

order to prevent releases or ensure early detection of releases. UST systems that are no longer in use are inspected to ensure they are properly closed. In addition, IDEM ensures that all confirmed releases to the environment of petroleum and hazardous substances are cleaned up as necessary to protect human health, including those released into ground water.

### Underground Injection Wells

Class V underground injection wells are widespread throughout the state and occur in high concentration in several areas, including some areas where ground water is highly sensitive to contamination. Most Class V wells are shallow wells that are used by business and individuals to dispose of a wide variety of waste fluids into the ground. Under current regulation, Class V wells may be used to dispose of non-hazardous fluids only. However, this was not always the case.

Prior to 2000 when the U.S. Environmental Protection Agency (EPA) passed more intensive regulations and enforcement for Class V wells, they were sometimes used to dispose of potentially hazardous fluids. These older wells create the potential for groundwater contamination if the fluids they contain are hazardous and leach into or above aquifers supplying drinking water. These wells are regulated directly through the U.S. EPA Class V Underground Injection Control Program, which targets the wells that pose the greatest environmental risk.

### Industrial Activities

Several cases of ground water contamination due to industrial facilities or their ancillary operations have been documented in Indiana. Although many contamination events occurred prior to the development of regulations for the storage and handling of industrial materials, ground water contamination still occurs as a result of either accidents or intentional dumping of waste. In 1998, Indiana's Secondary Containment of Above-Ground Storage Tanks Containing Hazardous Materials Rule (327 IAC 2-10) was adopted. This rule requires that new facilities provide secondary containment for storage of 660 gallons or more of hazardous wastes if the facility is located outside an approved delineated wellhead protection area. However, if the facility is located within an approved delineated wellhead protection area, the tank requires secondary containment if 275 gallons or more of hazardous materials are stored there. The secondary containment rule, along with outreach and education programs, has helped to prevent further ground water contamination from the storage and handling of industrial materials. However, these activities continue to be a potential source of contamination to ground water in Indiana.

### Road Salts

The storage and extensive use of salt as a deicing agent during the winter months can also have an impact on ground water, and contamination from road salt has been documented in Indiana. Efforts are being made by the Indiana Department of Transportation (INDOT) to build salt storage facilities in areas where ground water is not sensitive to contamination and to upgrade existing facilities to protect ground water. Currently, all INDOT salt storage facilities are covered by domes or canopies, and several new facilities were built to contain all surface runoff

on-site to reduce ground water contamination. In addition, road salt use and application rates have been significantly reduced from past years through computerized weather forecasting and roadway temperature sensors.

### Spills

Ground water contamination as a result of spills can be avoided or minimized if spills are reported to IDEM, which helps to ensure that they are handled and cleaned up properly. Indiana has a law in place to ensure that spills with the potential to contaminate ground water are reported and managed in a way that minimizes their impact (327 IAC 2-6.1).

### *Ground Water Protection Programs*

Programs that conduct monitoring to evaluate and protect ground water resources in Indiana occur at all levels of government. At the state level, several ground water protection programs and activities have been implemented or are in the process of being implemented. Table 30 (Appendix A) lists key ground water protection programs and activities in Indiana, the developmental stage of the program or activity, and the agency or agencies responsible for the program's implementation and/or enforcement.

### Classification of Indiana's Ground Water Resources

Indiana's ground water quality standards became effective in March 2002. The language of the rule includes numeric standards that provides ground water protection for wells and allows for the classification of ground water. The rule states that all ground water of the state shall be classified as drinking water class ground water unless it is classified as limited class ground water or impaired drinking water class ground water. IDEM may classify ground water as limited when ground water is shown to have a yield of less than 200 gallons per day or a total dissolved solids concentration of more than 10,000 parts per million (ppm). Additionally, ground water that is in the crop root zone, in a coal mined area, or in an injection zone of a permitted Class I, II or III injection well or gas storage well may be considered limited. IDEM may classify ground water as impaired when specific conditions are also met. These conditions include, but are not limited to:

- The ground water is not in a state approved wellhead protection area established pursuant to 327 IAC 8-4.1.
- The ground water has one or more contaminant concentrations above the numeric criteria established in the rule.
- The commissioner has approved a ground water remediation, closure, cleanup or corrective action plan that describes the nature and extent of contaminants exceeding the criteria.

### Source Water Assessment Program

In 2000, U.S. EPA approved Indiana's Source Water Assessment Program developed by Indiana stakeholders. IDEM has prepared source water protection plans (SWAPs) for public water systems with the exception of community water systems that instead use ground water as their primary source of water. Those community ground water systems are required by the Indiana Wellhead Protection Rule (327 IAC 8.4.1) to prepare a wellhead protection plan for each well or well field that provides water to the public. Since 2000, source water areas for more than 3,600 public water systems have been delineated. IDEM has also inventoried the potential sources of contamination of these source water areas from regulated facilities and has assessed water system susceptibility to contamination. As of the end of 2008, IDEM distributed all SWAPs for Indiana's public water systems to their owners. As a result of this effort, IDEM's Source Water Assessment Program is completely implemented and satisfies the requirements of the Source Water Assessment Program as defined by IDEM and accepted by U.S. EPA Region 5.

### Wellhead Protection Program

The Indiana Wellhead Protection Rule (327 IAC 8-4.1) became effective in March 1997. IDEM's Wellhead Protection Program implements this rule to proactively protect public water supplies from contamination. The Wellhead Protection Rule outlines the minimum requirements community public water supplies must meet to comply with the Wellhead Protection Program. As of October 2009, 633 (close to 98 percent) of Indiana's community water systems using ground water as their source of drinking water have an approved wellhead protection plan. Having an approved Wellhead Protection Plan indicates that a community has met the requirements of the Indiana Wellhead Protection Rule and has developed strategies to adequately protect their community water supplies from becoming contaminated.

### Other Programs Working to Protect Indiana's Ground Water Resources

In addition to regulatory programs and other structured ground water protection activities listed in Table 30, there are several educational programs conducted in Indiana that place an emphasis on ground water protection. The Purdue University Extension Service's Safe Water for the Future Program serves as an umbrella program for several other programs that provide resources on drinking water protection for individuals and communities. The Farm\*A\*Syst and Home\*A\*Syst Programs are essentially wellhead protection programs for rural and domestic private wells. A series of publications and brochures on wellhead protection are also available to assist communities working on wellhead protection. "Watershed Connections" brings together local contacts to produce a community specific publication on water resources and their protection.

The Indiana Department of Natural Resources' Project WET (Water Education for Teachers) and Purdue University Extension Service's "Water Riches" Program are two general water education programs that provide information about ground water protection. The Purdue University Cooperative Extension Service's Water Quality Program has made more than 70 publications addressing specific topics for the general public available through its website.

### *Ground Water Monitoring for Public Water Supplies*

The Compliance Section of the Drinking Water Branch at IDEM receives ground water compliance monitoring results reported by public water systems for volatile organic compounds (VOCs), synthetic organic compounds (SOCs), inorganic compounds (IOCs), nitrates (NO<sub>3</sub>), and radionuclides.

Radionuclide monitoring consists of analysis for gross alpha particle activity. Public water supply systems collect samples from various points within their system including after the water is treated and before it enters the distribution system. Samples can be collected from a single well or blended from two or more wells.

Other parameters monitored by public water systems depend on the type of system. There are three types of public water systems: community, non-transient non-community, and transient non-community. Compliance monitoring results reported by public water systems are considered “treated water” and may not represent “source” or “raw water” results. Information reported to IDEM from public water systems may be viewed through the Safe Drinking Water Information System at: <https://myweb.in.gov/IDEM/DWW/> .

The three types of public water systems are defined below:

- A community system is defined as a system that serves water to the public and has at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. Examples of community water systems are municipal systems, mobile home parks, nursing homes and homeowners associations. Along with regular bacteria sampling, community systems are required to test for thirty regulated SOCs, 21 VOCs, 12 regulated IOCs, sodium, and radionuclides. Sampling for these parameters is required a minimum of once every three years depending on the levels of contaminants detected. As of this report, there are 788 community systems in Indiana.
- A non-transient non-community water system is defined as a public water system that is not a community water system and which regularly serves the same 25 or more persons at least six months per year. Examples of non-transient non-community water systems could include restaurants, factories, daycares and schools. Along with regular bacteria sampling, non-community non-transient systems are required to test for 30 regulated SOCs, 21 VOCs, 11 regulated IOCs (except sodium and fluoride), and radionuclides. Sampling for these parameters is required a minimum of once every three years depending on the levels of contaminants detected. As of this report, there are 582 non-transient non-community systems in Indiana.

- A transient non-community is defined as a non-community water system that does not serve at least the same 25 people for more than six months per year. Examples of transient non-community water systems include restaurants, rest stops and gas stations. Along with regular bacteria sampling, transient non-community systems are required to test for radionuclides. As of this report, there are 2677 transient non-community systems in Indiana.

#### *Statewide Ground Water Monitoring Network*

The Ground Water Section of the Drinking Water Branch manages a statewide ground water monitoring network (GWMN) consisting of private residential wells and non-community public water supplies (PWS), including schools, daycares, churches, and businesses. Sampling for the GWMN has been conducted annually since it was established. Seven complete rounds of sampling have been conducted to date. Although many of the sampling sites were revisited during multiple sampling rounds, the number of sites sampled each year varies based on site suitability, participant interest, availability of resources, and previous sampling results. Sites sampled for the sixth round of monitoring, which occurred between May 2013 and August 2016 are shown in Figure 15 (Appendix B).

The Indiana Geological Survey (IGS) has divided the state into hydrogeologic settings to “provide a conceptual model to help interpret the occurrence, movement, and sensitivity to contamination of ground water in relation to ... the surface and subsurface environment” (Fleming, 1995). The IGS has identified more than 240 individual hydrogeologic settings across the state based largely on glacial activity. IGS and IDEM scientists then grouped these hydrogeologic settings into 20 generalized settings that are common throughout Indiana.

IDEM determined based on the 20 generalized hydrogeologic settings that 398 samples are needed to accurately represent ambient ground water quality across the state for each sampling round in the GWMN. These sampling sites were proportionally distributed throughout the 20 lumped hydrogeologic settings using a weighting procedure (also known as stratified sampling) based on the percentage of located wells in that setting. The weighted number of samples in the generalized settings ranged from 1 to 154 samples. Appendix I provides the descriptions of the 20 generalized hydrogeologic settings monitored and summary results for each.



## Protocols and Methods

As part of its implementation of the GWMN, IDEM's Ground Water Section staff:

- Statistically analyzed previous study designs employed in earlier iterations of the GWMN.
- Randomly selected sampling sites in each general hydrogeologic setting.
- Collected ground water samples from drinking water wells for analysis at IDEM's contract laboratories.
- Reviewed analytical sampling results.
- Distributed sampling results to GWMN participants.
- Developed a program report.

IDEM's Ground Water Section collects most samples from April to August. Samples are generally collected from outdoor spigots that have not been treated or from source water sample taps in the case of public water supplies. Samples are analyzed for more than 200 parameters; including alkalinity, anions/cations, metals, nitrogen as nitrate-nitrite (N+N), synthetic organic compounds, volatile organic compounds and pesticide degradates.

## Summary of Results

Table 31 (Appendix A) shows summary statistics for the analytical parameters that were detected in the ground water samples collected during the most recent round of sampling (with the exception of disinfection byproducts and plasticizers, which are not included in this analysis). If a particular analyte was not detected, it was not included in the table. Applicable U.S. EPA Maximum Contaminant Levels (MCLs), Secondary Maximum Contaminant Levels (SMCLs), or Recommended Levels are provided where applicable.

For all samples collected in the most recent round, analytes that had the most occurrences above a MCL included arsenic and nitrogen as nitrate-nitrite (hereafter referred to as simply "nitrogen") Parameters for with there were occurrences above the SMCL or U.S. EPA Recommended Level included iron, sulfate, and strontium. Several VOCs were detected, including methyl tert-butyl ether, tetrachloroethylene, toluene, and atrazine. These VOCs occurred in one sample each, at concentrations that did not exceed or approach an MCL. Appendix K provides the descriptions of the 20 generalized hydrogeologic settings and ground water quality summary results for each.

In the most recent round of sampling, 139 samples (about 36 percent) contained detectable levels of nitrogen. Nine of those samples exceeded the MCL of 10 milligrams per liter, and the highest reported concentration was 22 milligrams per liter. The locations of the sites sampled for nitrogen are displayed with their corresponding hydrogeologic sensitivity developed by Fleming *et al* (Figure 16, Appendix B) and aquifer sensitivity developed by Letsinger (2015) (Figure 17, Appendix B). Fleming's hydrogeologic sensitivity map is qualitative based on typical characteristics for the individual hydrogeologic settings, while the Letsinger aquifer sensitivities were quantitatively calculated from factors including slope, sand thickness, surficial clay thickness, percentage clay in soil, land cover, and vegetation. In highly sensitive areas, ground

water can be rapidly recharged by surficial infiltration, allowing potential contaminants (including nitrates and pesticides) found at the ground surface or shallow subsurface to be transported into the aquifer. Summary statistics were calculated for the nitrogen data for Indiana's generalized hydrogeologic settings (Table 32, Appendix A).

Average nitrogen concentrations for each hydrogeologic setting were also calculated for different well type and depth, aquifer conditions and aquifer sensitivity (Table 33, Appendix A). Oxidizing aquifers had significantly greater nitrogen levels and higher average concentrations than reducing aquifers. Previous studies (Freeze & Cherry, 1979) have shown that the distribution and mobility of nitrogen within aquifers can be influenced by groundwater redox conditions.

Additionally, 12 of the 19 general hydrogeologic settings had their highest average nitrogen concentrations in wells less than 100 feet deep. The averages calculated for this study suggest that nitrogen concentrations tend to be higher in shallow, unconsolidated wells in highly-sensitive, oxidizing aquifers. Additional geochemical and statistical analyses are needed to evaluate the causal relationship between these parameters.

### Arsenic

Arsenic is a naturally occurring element found primarily in rocks, soil, water, and plants in many areas of the United States, including Indiana. Natural events, such as infiltration of water, dissolution of minerals from clay, and erosion of rocks, can release arsenic into water. Arsenic can also be released into the environment as a byproduct of industrial activities, such as wood preservation, mining, and smelting (IDEM, 2015).

In the most recent round of sampling, 147 samples (around 38%) contained detectable levels of arsenic. Forty-three of those samples (11%) contained arsenic concentrations above the MCL (10 micrograms per liter). The highest reported concentration was 68 micrograms per liter. Figure 18 (Appendix B) shows the location of the arsenic samples by hydrogeologic setting. Table 34 (Appendix A) shows summary statistics for arsenic samples by hydrogeologic setting, and Table 35 (Appendix A) provides an intra-setting comparison.

Reducing aquifers had significantly greater arsenic levels and higher averages concentrations than oxidizing aquifers. Geochemical modeling is needed to determine the species of arsenic found in Indiana ground water, and additional geochemical and statistical analyses are needed to evaluate the causal relationship between these parameters.

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APPENDIX A:  
INTEGRATED REPORT TABLES  
(REVISED)

Table 1: Summary of designated use support by waterbody type.

| Designated Beneficial Use                  | Total Size | Size Assessed | Size Fully Supporting | Size Not Supporting | Size Not Attainable |
|--|------------|---------------|-----------------------|---------------------|---------------------|
| <b>Rivers and Streams (Miles)</b>          |            |               |                       |                     |                     |
| Full Body Contact (Recreational Use)       | 63,130     | 31,683        | 8,122                 | 23,561              | 0                   |
| Human Health and Wildlife (Fishable Use)   | 63,130     | 8,873         | 3,418                 | 5,455               | 0                   |
| Public Water Supply <sup>1</sup>           | 354        | 25            | 0                     | 25                  | 0                   |
| Warm Water Aquatic Life (Aquatic Life Use) | 63,130     | 37,693        | 25,793                | 11,900              | 122                 |
| <b>Lake Michigan Shoreline (Miles)</b>     |            |               |                       |                     |                     |
| Full Body Contact (Recreational Use)       | 59         | 59            | 4                     | 55                  | 0                   |
| Human Health and Wildlife (Fishable Use)   | 59         | 59            | 0                     | 59                  | 0                   |
| Public Water Supply                        | 35         | 31            | 31                    | 0                   | 0                   |
| Warm Water Aquatic Life (Aquatic Life Use) | 59         | 59            | 59                    | 0                   | 0                   |
| <b>Lake Michigan (Acres)</b>               |            |               |                       |                     |                     |
| Human Health and Wildlife (Fishable Use)   | 154,176    | 154,176       | 0                     | 154,176             | 0                   |
| <b>Lakes and Reservoirs (Acres)</b>        |            |               |                       |                     |                     |
| Full Body Contact (Recreational Use)       | 127,607    | 37,047        | 29,035                | 8,012               | 0                   |
| Human Health and Wildlife (Fishable Use)   | 127,607    | 77,845        | 27,290                | 50,555              | 0                   |
| Public Water Supply                        | 29,541     | 16,615        | 230                   | 16,385              | 0                   |
| Warm Water Aquatic Life (Aquatic Life Use) | 127,607    | 10,379        | 3,754                 | 6,625               | 0                   |

Source: IDEM's assessment database

<sup>1</sup>While all waterbodies in Indiana are designated for aquatic life and recreational uses, not all are designated for public water supply. There are a total of 29,541 lake acres, 354 stream miles, and 35 miles along Lake Michigan's shoreline designated for public water supply in Indiana. The values for lake acres does not include the 154,176 acres of Lake Michigan.

Table 2: Atlas information.

| Description   | Value     | Units        |
|---|-----------|--------------|
| Indiana population <sup>1</sup>                                   | 6,483,802 | People       |
| Indiana surface area <sup>2</sup>                                 | 36,291    | Square Miles |
| Total miles of rivers and streams <sup>3</sup>                    | 63,130    | Miles        |
| Number of publicly-owned lakes, reservoirs and ponds <sup>4</sup> | 575+      | -            |
| Publicly-owned lakes, reservoirs, and ponds <sup>4</sup>          | 106,205   | Acres        |
| Great Lakes <sup>4</sup>  | 154,176   | Acres        |
| Great Lakes shoreline <sup>5</sup>                                | 59        | Miles        |
| Fresh water wetlands <sup>6</sup>                                 | 813,000   | Acres        |

<sup>1</sup>U.S. Census Bureau, 2010 census <sup>2</sup>State Information Center <sup>3</sup>2014 Reach Index <sup>4</sup>U.S. EPA (1993) <sup>5</sup>Indiana Reach Index <sup>6</sup>Rolley (1991)



Table 3: 205(j) and 319(h) Investments in SFY 2003-2013. Table does not include an additional \$434,328 from the American Recovery and Reinvestment Act of 2009, which was awarded through the SRF Program.

| 205(j) |                    |                | 319(h)  |                    |                |
|--------|--------------------|----------------|---------|--------------------|----------------|
| FFY    | Number of Projects | Amount Awarded | FFY     | Number of Projects | Amount Awarded |
| 2003   | 6                  | \$507,054      | 2003*   | 34                 | \$4,544,480    |
| 2004   | 6                  | \$497,220      | 2004**  | 27                 | \$4,159,332    |
| 2005   | 3                  | \$254,430      | 2005*** | 21                 | \$3,747,145    |
| 2006   | 2                  | \$251,310      | 2006    | 18                 | \$3,374,538    |
| 2007   | 2                  | \$148,915      | 2007    | 12                 | \$3,022,961    |
| 2008   | 0                  | 0              | 2008    | 8                  | \$2,967,181    |
| 2009   | 2                  | \$271,432      | 2009    | 9                  | \$2,759,609    |
| 2010   | 2                  | \$293,753      | 2010    | 11                 | \$3,653,209    |
| 2011   | 4                  | \$699,775      | 2011    | 8                  | \$2,457,215    |
| 2012   | 2                  | \$331,250      | 2012    | 8                  | \$2,221,471    |
| 2013   | 2                  | \$337,750      | 2013    | 7                  | \$2,276,973    |
| 2014   | 3                  | \$341,000      | 2014    | 9                  | \$2,628,234    |
| 2015   | 2                  | \$340,000      | 2015    | 9                  | \$2,317,768    |

\* includes 2 in-house projects totaling \$526,122

\*\* includes 2 in-house projects totaling \$248,792

\*\*\* includes 1 in-house project totaling \$155,686

Table 4: Reductions in sediment, phosphorus, and nitrogen reaching Indiana waters.

| FFY(s)    | Sediment Reduction (tons/year) | Phosphorus Reduction (lbs/year) | Nitrogen Reduction (lbs/year) |
|-----------|--------------------------------|---------------------------------|-------------------------------|
| 2000-2003 | 35,870                         | 42,662                          | 85,710                        |
| 2004      | 18,561                         | 21,993                          | 44,527                        |
| 2005      | 33,415                         | 39,347                          | 79,349                        |
| 2006      | 25,831                         | 40,538                          | 99,434                        |
| 2007      | 23,279                         | 126,529                         | 125,848                       |
| 2008      | 18,119                         | 25,400                          | 65,367                        |
| 2009      | 7,965                          | 15,479                          | 15,319                        |
| 2010      | 33,420                         | 31,374                          | 66,400                        |
| 2011      | 28,880                         | 33,434                          | 70,450                        |
| 2012      | 47,616                         | 94,980                          | 141,709                       |
| 2013      | 54,507                         | 92,360                          | 170,376                       |
| 2014      | 67,403                         | 168,542                         | 168,710                       |
| 2015      | 97,212                         | 132,737                         | 228,334                       |

Source: IDEM OWQ nonpoint source project tracking database

Table 5: Water quality improvements in Indiana watersheds reported to U.S. EPA for measures SP-12 and WQ-10.

| Stream Name               | Watershed Hydrologic Unit Code | Stream Miles Improved | Impairment Removed          | Year Removed from 303(d) List |
|---------------------------|--------------------------------|-----------------------|-----------------------------|-------------------------------|
| Pigeon                    | 05140202                       | 32                    | Chlordane                   | 2002                          |
| Lower Clifty Creek        | 051202060107                   | 8.12                  | E. coli                     | 2010                          |
| West Fork Big Walnut      | 051202030104                   | 34.64                 | E. coli                     | 2010                          |
| East Fork Big Walnut      | 051202030102                   | 15.76                 | E. coli                     | 2010                          |
| Bull Run                  | 071200011308                   | 25.09                 | Impaired biotic communities | 2012                          |
| Metcalf Ditch             | 041000030504                   | 14.33                 | Impaired biotic communities | 2012                          |
| North Prong Stotts Cr     | 051202011404                   | 1.25                  | Impaired biotic communities | 2012                          |
| South Prong Stotts Cr     | 051202011405                   | 13.23                 | Impaired biotic communities | 2012                          |
| Mill Creek                | 051201011404                   | 13.14                 | Impaired biotic communities | 2012                          |
| Jenkins Ditch             | 051201070308                   | 2.13                  | Impaired biotic communities | 2012                          |
| Emma Creek                | 040500011201                   | 38.2                  | Ammonia                     | 2014                          |
| Devils Backbone Indian Cr | 051401040502                   | 21                    | Impaired biotic communities | 2015                          |

Table 6: Binational phosphorus load reduction targets for Lake Erie under the Great Lakes Water Quality Agreement, Annex 4.

| Great Lakes Water Quality Agreement Lake Ecosystem Objectives  | Annex 4 Phosphorus Reduction Goals   |   |
|--|--|---|
| Minimize the extent of hypoxic zones in the Waters of the Great Lakes associated with excessive phosphorus loading, with particular emphasis on Lake Erie              | 40 percent reduction in total phosphorus entering the Western Basin and Central Basin of Lake Erie – from the United States and from Canada – to achieve 600 metric-ton Central Basin load   |   |
| Maintain algal species consistent with healthy aquatic ecosystems in the nearshore Waters of the Great Lakes   | 40 percent reduction spring total and soluble reactive phosphorus loads from the following watersheds where localized algae is a problem:  |   |
|  | <b>Western Basin of Lake Erie</b> <ul style="list-style-type: none"> <li>Thames River (Canada)</li> <li>Maumee River (U.S.)</li> <li>River Raisin (U.S.)</li> <li>Portage River (U.S.)</li> <li>Toussaint Creek (U.S.)</li> <li>Leamington Tributaries (Canada)</li> </ul> | <b>Central Basin of Lake Erie</b> <ul style="list-style-type: none"> <li>Sandusky River (U.S.)</li> <li>Huron River (U.S.)</li> </ul> |
| Maintain cyanobacteria biomass at levels that do not produce concentrations of toxins that pose a threat to human or ecosystem health in the Waters of the Great Lakes | 40 percent reduction in spring total (860 metric tons) and soluble reactive phosphorus (186 metric tons) loads from the Maumee River (U.S.)  | N/A   |

Table 7. SRF investments in SFY 2014 and 2015.

| SRF Program    | Number of Projects | Loan Amount   | Savings Realized |
|----------------|--------------------|---------------|------------------|
| Clean Water    | 34                 | \$297,390,310 | \$64,582,500     |
| Drinking Water | 22                 | \$39,657,401  | \$19,243,179     |

Source: SRF tracking database

Table 8. A comparison of means for selected nonpoint source pollution-related parameters at two sites on Emma Creek, before (2007–2008) and after (2009–2010) BMP implementation. All parameters expressed as milligrams per liter unless otherwise noted.

| Parameter   | Site 1<br>(Tributary of Emma Creek) |           | Site 13<br>(Mouth of Emma Creek) |           |
|---|-------------------------------------|-----------|----------------------------------|-----------|
|   | 2007–2008                           | 2009–2010 | 2007–2008                        | 2009–2010 |
| Turbidity (nephelometric turbidity units)                 | 13                                  | 8.8       | 74                               | 56        |
| Total Suspended Solids                                    | 23.4                                | 17.2      | 107                              | 27        |
| Nitrate   | 1.1                                 | 1.1       | 3.1                              | 2.8       |
| Total Phosphorus  | 0.497                               | 0.287     | 2.01                             | 0.57      |
| Biological Oxygen Demand                                  | 1.31                                | 0.72      | 2.05                             | 1.15      |
| Ammonia   | 0.15                                | 0.11      | 0.11                             | 0.09      |
| <i>E. coli</i> (colony-forming units per 100 milliliters) | 1,147                               | 750       | 17,109                           | 16,483    |

Table 9. Pathogen concentrations in colony-forming units per 100 milliliters (cfu/100mL) and dissolved oxygen levels in milligrams per liter (mg/L) in the Devils Backbone segment of Indian Creek, 2000 and 2010. Values in bolded red font indicate exceedances of state water quality criteria.

| Pre-project E. coli Data  |             |                      | Pre-project Dissolved Oxygen (DO) Data |             |             |
|---------------------------|-------------|----------------------|--|-------------|-------------|
| Sample Date               | Site Number | E. coli (cfu/100 mL) | Sample Date                            | Site Number | DO (mg/L)   |
| 7/12/2000                 | OBS100-0006 | <b>243</b>           | 5/16/2000                              | OBS100-0001 | 9.87        |
| 7/19/2000                 | OBS100-0006 | <b>708</b>           | 7/12/2000                              | OBS100-0006 | 7.83        |
| 7/26/2000                 | OBS100-0006 | 40                   | 7/19/2000                              | OBS100-0006 | <b>3.98</b> |
| 8/2/2000                  | OBS100-0006 | 20                   | 7/26/2000                              | OBS100-0006 | <b>4</b>    |
| 8/9/2000                  | OBS100-0006 | <b>833</b>           | 8/2/2000                               | OBS100-0006 | <b>2.52</b> |
| Geometric Mean:           |             | <b>162.88</b>        | 8/9/2000                               | OBS100-0006 | <b>3.06</b> |
| Post-project E. coli Data |             |                      | Post-project Dissolved Oxygen Data     |             |             |
| Sample Date               | Site Number | E. coli (cfu/100 mL) | Sample Date                            | Site Number | DO (mg/L)   |
| 5/17/2010                 | OBS100-0010 | 35.5                 | 5/17/2010                              | OBS100-0010 | 9.16        |
| 5/24/2010                 | OBS100-0010 | 142.1                | 6/1/2010                               | OBS100-0010 | 8.72        |
| 6/1/2010                  | OBS100-0010 | 20.9                 | 6/7/2010                               | OBS100-0010 | 7.63        |
| 6/7/2010                  | OBS100-0010 | 12                   | 6/14/2010                              | OBS100-0010 | 7.16        |
| 6/14/2010                 | OBS100-0010 | 16.9                 | 7/28/2010                              | OBS100-0010 | 7.46        |
| Geometric Mean:           |             | 29.24                |  |             |             |

Table 10: OWQ's primary water quality monitoring objectives and the monitoring approaches needed to meet them.

| Key | Monitoring Objective   | Probabilistic | Targeted | Priority Rationale  |
|-----|--|---------------|----------|---|
| A   | Conduct water quality assessments pursuant to CWA Section 305(b) to support the development of Indiana's Integrated Report to U.S. EPA                                     | X             | X        | Required for CWA Section 106 funding to meet CWA goals  |
| B   | Development of Indiana's CWA Section 303(d) List of Impaired Waters for Indiana's Integrated Report  | X             | X        | Required for CWA Section 106 funding to meet CWA goals  |
| C   | Develop Total Maximum Daily Loads to address impairments identified on Indiana's 303(d) list   | X             | X        | Required for CWA Section 106 funding to meet CWA goals  |
| D   | Determine trends and trophic status of Indiana's lakes and reservoirs under CWA Section 314  |               | X        | Required for CWA Section 106 funding to meet CWA goals  |
| E   | Develop water quality criteria, including nutrient criteria for lakes and reservoirs, rivers and streams   | X             | X        | Required for CWA Section 106 funding to meet CWA goals  |
| F   | Support watershed planning and restoration efforts   | X             | X        | Required for to CWA Section 319 funding and to meet performance measures in U.S. EPA's Strategic Plan |
| G   | Identify water quality improvements accomplished by watershed restoration efforts funded through CWA programs  |               | X        | Required to meet performance measures in U.S. EPA's Strategic Plan                                    |
| H   | Support the development of public health advisories related to the use of Indiana's water resources, including fish consumption advisories and recreational use advisories |               | X        | Supports protection of human health   |
| I   | Determine ambient ground water quality and extent of contaminated areas  |               | X        | Supports protection of human health   |
| J   | Support source water protection including both ground water and surface source water supplies  |               | X        | Supports protection of human health   |
| K   | Support development of National Pollutant Discharge Elimination System permit limits   | X             | X        | Required for CWA Section 106 funding to meet CWA goals  |
| L   | Develop environmental indicators, including indices of biological integrity, for use in making water quality assessments   | X             |          | Supports primary monitoring objectives (A-C, E)   |
| M   | Responding to citizen complaints about activities that may be impacting private wells  |               | X        | Mandated by State Statute   |

Modified from IDEM OWQ's Surface Water Monitoring Strategy, 2011-2019.

Table 11: External data sets that met the data quality requirements for the 305(b) and 303(d) assessment and listing processes under the draft External Data Framework.

| Source                          | Type of Assessment   |
|---------------------------------|--|
| American Water Company          | Drinking water use support   |
| City of Elkhart                 | Aquatic life use support; Fishable use support                                 |
| City of Indianapolis            | Recreational use support; Drinking water use support; Aquatic life use support |
| City of Muncie                  | Recreational use support; Drinking water use support; Aquatic life use support |
| City of South Bend              | Recreational use support   |
| City of Valparaiso              | Recreational use support; Drinking water use support; Aquatic life use support |
| Marion County Health Department | Recreational use support; Drinking water use support; Aquatic life use support |

Table 12: Summary of water quality assessment methodology for determining designated use support.

| Aquatic Life Use Support - Rivers and Streams |  |  |
|---|--|--|
| Toxicants                                     | Dissolved metals, pesticides, polynuclear aromatic hydrocarbons (PAHs), free cyanide, and ammonia were evaluated on a site-by-site basis and judged according to the magnitude of the exceedance(s) of Indiana’s WQS and the number of times the exceedance(s) occurred. For any one pollutant (grab or composite samples), the following assessment criteria are applied to data sets consisting of three or more measurements.   |  |
|   | <b>Fully Supporting</b>  | <b>Not Supporting</b>  |
|   | No more than one exceedance of the acute or chronic criteria for aquatic life within a three year period <sup>1</sup> .  | More than one exceedance of the acute or chronic criteria for aquatic life within a three year period. |
| Conventional inorganics                       | Dissolved oxygen, pH, sulfate, and chloride were evaluated for the exceedance(s) of Indiana’s WQS. For any one pollutant, the following assessment criteria are applied to data sets consisting of three or more measurements.   |  |
|   | <b>Fully Supporting</b>  | <b>Not Supporting</b>  |
|   | Criteria are exceeded in less than or equal to 10% of measurements.  | Criteria are exceeded in greater than 10% of measurements.   |
| Nutrients                                     | <p>Nutrient conditions were evaluated on a site-by-site basis using the benchmarks described below. In most cases, two or more of these conditions must be met on the same date in order to classify a waterbody as impaired. This methodology assumes a minimum of three sampling events:</p> <ul style="list-style-type: none"> <li>• Total Phosphorus -- One or more measurements greater than 0.3 mg/L</li> <li>• Nitrogen (measured as NO<sub>3</sub> + NO<sub>2</sub>) – One or more measurements greater than 10.0 mg/L</li> <li>• Dissolved Oxygen (DO) – One or more measurements below the water quality standard of 4.0 mg/l or measurements that are consistently at/close to the standard, in the range of 4.0-5.0 mg/L or values greater than 12.0 mg/L</li> <li>• pH measurements – One or more measurements exceed the water quality standard of no more than 9.0 pH units or measurements are consistently at/close to the standard, in the range of 8.7- 9.0 pH units</li> <li>• Algal Conditions -- Algae are described as “excessive” based on field observations by IDEM scientists.</li> </ul> |  |

|  |  |  |
|--|--|--|
| Benthic aquatic macroinvertebrate Index of Biotic Integrity (mIBI) Scores (Range of possible scores is 12-60)  | <b>Fully Supporting</b>  | <b>Not Supporting</b>  |
|  | mIBI greater than or equal to 36   | mIBI less than 36  |
| Fish community (IBI) Scores (Range of possible scores is 0-60)   | <b>Fully Supporting</b>  | <b>Not Supporting</b>  |
|  | IBI greater than or equal to 36  | IBI less than 36   |
| <b>Aquatic Life Use Support – Rivers and Streams</b>   |  |  |
| Qualitative habitat use evaluation (QHEI) (Range of possible scores is 0-100)  | The Qualitative Habitat Evaluation Index (QHEI) is not used to determine aquatic life- use support. Rather, the QHEI is an index designed to evaluate the lotic habitat quality important to aquatic communities and is used in conjunction with mIBI or IBI data, or both, to evaluate the role that habitat plays in waterbodies where impaired biotic communities (IBC) have been identified. QHEI scores are calculated using six metrics: substrate, instream cover, channel morphology, riparian zone, pool/riffle quality, and gradient. A higher QHEI score represents a more diverse habitat for colonization of aquatic organisms. IDEM has determined that a QHEI total score of <51 indicates poor habitat. For streams where the macroinvertebrate community (mIBI or mHab) or fish community (IBI) scores indicate IBC, QHEI scores are evaluated to determine if habitat is the primary stressor on the aquatic communities, or if there may be other stressors/pollutants causing the IBC. |  |
| <b>Aquatic Life Use Support – Lakes and Reservoirs</b>   |  |  |
| Indiana Department of Natural Resources surveys of the status of sport fish communities in lakes and information on trout stocking.  | <b>Fully Supporting</b>  | <b>Not Supporting</b>  |
|  | Supports cold water fishery, including native Cisco and stocked trout, or both.  | Native Cisco population is gone and/or the lake unable to support stocked trout and/or the lake's attributes appear to contribute to warm water fishery condition. |
| Temperature and pH   | Lakes in which thermal modifications have caused an adverse effect on aquatic life and lakes that do not meet Indiana's WQS for pH have been assessed as not supporting of aquatic life use.   |  |
| <b>Fish Consumption Use Support (Human Health) – All Waters</b>  |  |  |
| Available fish tissue data for the most recent 12 years of data collection are evaluated. Only waters for which sufficient fish tissue data were available were assessed for fish consumption. All results from sampling locations considered representative of a given assessment unit (lake or reservoir; stream or stream reach) must be below the benchmarks for mercury and PCBs in order to be assessed as fully-supporting. For mercury, all waters with a trophic level weighted arithmetic mean result (calculated with all the samples collected during the same sampling event) that exceeds the applicable benchmark are classified as impaired. For PCBs, all waters with a single sample result for a given species exceeding the applicable benchmark are classified as impaired. |  |  |
| Mercury in Fish Tissue   | <b>Fully Supporting</b>  | <b>Not Supporting</b>  |
|  | Trophic level weighted arithmetic mean concentration values for all sampling events are less than or equal to 0.3 mg/kg wet weight   | Trophic level weighted arithmetic mean concentration values for one or more sampling events are greater than 0.3 mg/kg wet weight                                  |
| PCBs in Fish Tissue  | <b>Fully Supporting</b>  | <b>Not Supporting</b>  |
|  | Actual concentration values for all samples are less than or equal to 0.02 mg/kg wet weight  | Actual concentration values for one or more samples are greater than 0.02 mg/kg wet weight   |

### Recreational Use Support (Human Health) – All Waters

IDEM has two different methods for determining recreational use support, depending on the type of data set being used in making the assessment. For data sets consisting of five equally-spaced samples over a 30-day period, IDEM applies two tests, both of which are based on the U.S. EPA's Ambient Water Quality Criteria for Bacteria - 1986 (U.S. EPA, 1986), which provides the foundation for Indiana's WQS for recreational use. For data sets with 10 or more grab samples but without the five samples equally-spaced over the 30 days required to calculate a geometric mean, the 10% rule is applied. When both types of data sets are available, the assessment decision is based on the data set consisting of five samples, equally-spaced over a 30-day period.

|  | Fully Supporting  | Not Supporting   |
|--|---|--|
| Bacteria ( <i>E. coli</i> ): at least five equally-spaced samples over 30 days. (cfu = colony forming units) | Geometric mean does not exceed 125 cfu/100mL  | Geometric mean exceeds 125 cfu/100mL.  |
| Bacteria ( <i>E. coli</i> ): grab samples (cfu = colony forming units)                                       | Not more than 10% of measurements are greater than 576 cfu/100ml (for waters infrequently used for full body contact) or 235 cfu/100mL (for bathing beaches) <sup>2</sup> .<br><br>And<br><br>Not more than one sample is greater than 2,400 cfu/100mL. | More than 10% of samples are greater than 576 cfu/100mL or more than one sample is greater than 2,400 cfu/100mL. |

### Drinking Water Use Support – Rivers and Streams

River and stream segments are designated for drinking water uses if a community water supply has a drinking water intake somewhere along the segment. When IDEM has data for a segment with a drinking water intake, those data are compared to the applicable ambient water quality criteria in Indiana's WQS to determine if the drinking water use is met. The appropriate water quality criteria are applied for specific substances identified in the WQS. Information regarding non-naturally occurring taste and odor-producing substances not specifically identified in the WQS are reviewed within the context of a water treatment facility's ability to meet Indiana's drinking WQS using conventional treatment.

| Toxicants               | Dissolved metals, pesticides, PCBs, and free cyanide were evaluated on a site by site basis and judged according to magnitude of the exceedance(s) of Indiana's WQS for point-of-water intake and the number of times exceedance(s) occurred. For any one pollutant (grab or composite samples), the following assessment criteria are applied.   |  |
|-------------------------|---|--|
|                         | Fully Supporting  | Not Supporting   |
|                         | Not more than one exceedance of the acute or chronic criteria for human health within a three year period.  | More than one exceedance of the acute or chronic criteria for human health within a three year period. |
| Conventional inorganics | Total dissolved solids, specific conductance, sulfate, chloride, nitrite-N and nitrogen (measured as NO <sub>3</sub> + NO <sub>2</sub> ) were evaluated for the exceedance(s) of Indiana's WQS for point-of-water intake and the number of times the exceedance(s) occurred. For any single pollutant (grab or composite samples), the following assessment criteria are applied to data sets consisting of three or more measurements. |  |
|                         | Fully Supporting  | Not Supporting   |
|                         | Not more than one exceedance of the acute or chronic criteria for human health within a three year period.  | More than one exceedance of the acute or chronic criteria for human health within a three year period. |



| Recreational Use Support (Aesthetics) – Lakes and Reservoirs                      |   |  |
|---|---|--|
|   | Fully Supporting  | Not Supporting   |
| Natural Lakes   | Not more than 10% of all TP values greater than 54 ug/L and their associated Chlorophyll a values are less than or equal to 20 ug/L   | <p>Less than 10% of all TP values are greater than 54 ug/L but their associated Chlorophyll a values are greater than 20 ug/L, and the TSI (CHL) score for the lake indicates eutrophic (50-70) or hypereutrophic (greater than 70) conditions</p> <p>Or</p> <p>More than 10% of all TP values are greater than 54 ug/L with associated Chlorophyll a values less than 4 ug/L, but the TSI (CHL) score for the lake indicates eutrophic (50-70) or hypereutrophic (greater than 70) conditions</p> <p>Or</p> <p>More than 10% of all TP values are greater than 54 ug/L with associated Chlorophyll a values greater than 4 ug/L</p> |
| Reservoirs  | Not more than 10% of all TP values greater than 51 ug/L and their associated Chlorophyll a values are less than 25 ug/L   | <p>Less than 10% of all TP values are greater than 51 ug/L but their associated Chlorophyll a values are greater than 25 ug/L and the TSI (CHL) score for the lake indicates eutrophic (50-70) or hypereutrophic (greater than 70) conditions</p> <p>Or</p> <p>More than 10% of all TP values are greater than 51 ug/L with associated Chlorophyll a values less than 2ug/L, but the TSI (CHL) score for the lake indicates eutrophic (50-70) or hypereutrophic (greater than 70) conditions</p> <p>Or</p> <p>More than 10% of all TP values are greater than 51 ug/L with associated Chlorophyll a values greater than 2 ug/L</p>   |
| Drinking Water Use Support – Lakes and Reservoirs                                 |   |  |
|   | Fully Supporting  | Not Supporting   |
| Taste and odor-producing substances   | Taste and odor substances not present in quantities sufficient to interfere with production of drinking water by conventional treatment   | Taste and odor substances present in quantities requiring additional treatment by the public water supply to prevent taste and odor problems   |
| Information on the application of pesticides to surface drinking water reservoirs | Reservoirs or lakes that serve as source water for public water supplies that received pesticide (algaecide) application permits for algae were classified as not supporting because additional treatment by the public water supply was required to prevent taste and odor problems. |  |

| Other Assessments – Lakes and Reservoirs                    |  |
|---|--|
| Carlson's Trophic State Index (TSI) for Chlorophyll a (CHL) | Chlorophyll a results were used to calculate Carlson TSI scores. Trophic scores were used to classify lakes according to their trophic state. Lake trends were also assessed for lakes with two or more trophic scores if at least one of the scores was less than five years old. Trophic scores and lake trends are not used to determine use support status. These assessments are conducted to fulfill Clean Water Act Section 314 reporting requirements for publicly owned lakes and reservoirs. |

<sup>1</sup>For Indiana waters within the Great Lakes Basin, acute aquatic criteria refer to the "criterion maximum concentration (CMC) identified in 327 IAC 2-1.5, and the chronic aquatic criteria refer to the criterion continuous concentration (CCC) also described therein. For downstate waters (those located outside of the Great Lakes Basin, the acute aquatic criteria refer to the "AAC" values shown in 327 IAC 2-1 and the chronic aquatic criteria are shown as the "CAC" values.

<sup>2</sup>The value of 576 cfu/100mL comes from U.S. EPA's Ambient Water Quality Criteria for Bacteria - 1986 (U.S. EPA, 1986) and represents the single sample maximum applicable to waters infrequently used for full body recreation. For data collected from bathing beaches, the single day maximum value of 235 cfu/100mL is applied.

Source: IDEM OWQ 2016 Consolidated Assessment and Listing Methodology (Revised)

Table 13: Individual use support summary for Indiana streams.

| Designated Beneficial Uses                 |                    |                       |                  |                               |                             |                              |
|--|--------------------|-----------------------|------------------|-------------------------------|-----------------------------|------------------------------|
| Designated Beneficial Use                  | Total Size (Miles) | Size Assessed (Miles) | Percent Assessed | Size Fully Supporting (Miles) | Size Not Supporting (Miles) | Size Not Attainable* (Miles) |
| Full Body Contact (Recreational Use)       | 63,130             | 32,730                | 52%              | 8,116                         | 24,614                      | 0                            |
| Human Health and Wildlife (Fishable Use)   | 63,130             | 8,935                 | 14%              | 3,415                         | 5,520                       | 0                            |
| Public Water Supply                        | 388                | 23                    | 6%               | 0                             | 0                           | 0                            |
| Warm Water Aquatic Life (Aquatic Life Use) | 63,130             | 38,043                | 60%              | 25,855                        | 12,188                      | 156                          |

\*"Size Not Attainable" refers to limited use waters as designated in Indiana's Water Quality Standards. See 327 IAC 2-1-11 and 2-1.5-8. Source: IDEM 305(b) assessment database

Table 14: Summary of national and state causes impairing Indiana streams.

| Causes of Impairment                              | Total Size (miles) |
|---|--------------------|
| <b>Pathogens</b>                                  |                    |
| Escherichia coli                                  | 24,437             |
| <b>Oxygen Depletion</b>                           |                    |
| Oxygen, Dissolved                                 | 2,684              |
| <b>Flow Alterations</b>                           |                    |
| Low flow alterations                              | 91                 |
| <b>Habitat alterations (Including Wetlands)</b>   |                    |
| Physical substrate habitat alterations            | 195                |
| <b>Thermal Impacts</b>                            |                    |
| Temperature, water                                | 103                |
| <b>Nutrients (Macronutrients/Growth Factors)</b>  |                    |
| Nutrient/Eutrophication Biological Indicators     | 3,064              |
| Organic Enrichment (Sewage) Biological Indicators | 97                 |

| Causes of Impairment   | Total Size (miles) |
|--|--------------------|
| <b>Toxic Inorganics</b>                                      |                    |
| Ammonia (Un-ionized)   | 135                |
| Chloride   | 228                |
| Cyanide (as free cyanide)                                    | 158                |
| Sulfate  | 439                |
| <b>Toxic Organics</b>  |                    |
| Dioxin (including 2,3,7,8-TCDD)                              | 364                |
| Hexachlorocyclohexane (mixture)                              | 52                 |
| Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems) | 20                 |
| PCB (Fish Tissue)  | 4,924              |
| PCB (Water)  | 364                |
| <b>Metals</b>  |                    |
| Mercury (Fish Tissue)  | 768                |
| Mercury (Water)  | 342                |
| <b>Pesticides</b>  |                    |
| Atrazine   | 7                  |
| <b>pH/Acidity/Caustic Conditions</b>                         |                    |
| pH   | 295                |
| <b>Sedimentation</b>   |                    |
| Sedimentation/Siltation                                      | 292                |
| <b>Oil and Grease</b>  |                    |
| Oil and Grease   | 22                 |
| <b>Algae</b>   |                    |
| Chlorophyll-a  | 111                |
| <b>Biological Integrity (Bioassessments)</b>                 |                    |
| Impaired Biotic Communities                                  | 8,539              |

Source: IDEM 305(b) assessment database

Table 15: Summary of national and state sources impairing Indiana streams.

| Sources of Impairment   | Total Size (miles) |
|---|--------------------|
| <b>Agriculture – Animal Feeding/Handling Operations (Nonpoint Source – Not Regulated)</b> |                    |
| Animal Feeding Operations (NPS)   | 10,510             |
| Managed Pasture Grazing   | 36                 |
| Permitted Runoff from Confined Animal Feeding Operations (CAFOs)                          | 1,900              |
| Agriculture   | 2,336              |
| Livestock (Grazing or Feeding Operations)   | 6,300              |
| Unrestricted Cattle Access  | 862                |
| <b>Agriculture – Crop Production</b>  |                    |
| Crop Production with Subsurface Drainage  | 2,660              |
| Crop Production (Crop Land or Dry Land)   | 241                |

| Sources of Impairment   | Total Size (miles) |
|---|--------------------|
| <b>Construction</b>   |                    |
| Site Clearance (Land Development or Redevelopment)                              | 49                 |
| <b>Ground Water Loadings</b>  |                    |
| Contaminated Ground Water   | 13                 |
| <b>Habitat Alterations (Not Directly Related to Hydromodification)</b>          |                    |
| Impacts from Hydrostructure Flow Regulation/modification                        | 511                |
| Loss of Riparian Habitat  | 1,357              |
| Streambank Modifications/destabilization  | 488                |
| Upstream Impoundments (e.g., PI-566 NRCS Structures)                            | 15                 |
| <b>Hydromodification</b>  |                    |
| Channelization  | 233                |
| Dam Construction (Other than Upstream Flood Control Projects)                   | 26                 |
| <b>Industrial Permitted Discharge</b>   |                    |
| Industrial Point Source Discharge   | 342                |
| RCRA Hazardous Waste Sites  | 3                  |
| Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) | 33                 |
| <b>Land Application Waste Sites</b>   |                    |
| Illegal Dumps or Other Inappropriate Waste Disposal                             | 680                |
| On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)    | 1,220              |
| <b>Legacy/Historical Pollutants</b>   |                    |
| Acid Mine Drainage  | 406                |
| Contaminated Sediments  | 301                |
| Historic Bottom Deposits (Not Sediment)   | 65                 |
| Impacts from Abandoned Mine Lands (Inactive)                                    | 18                 |
| <b>Municipal Permitted Discharges (Direct and Indirect)</b>                     |                    |
| Combined Sewer Overflows  | 1,652              |
| Municipal Point Source Discharges   | 3,269              |
| Package Plant or Other Permitted Small Flows Discharges                         | 2,876              |
| Sanitary Sewer Overflows (Collection System Failures)                           | 20                 |
| <b>Stormwater Permitted Discharges (Direct and Indirect)</b>                    |                    |
| Unspecified Urban Stormwater  | 1,128              |
| <b>Natural Sources</b>  |                    |
| Waterfowl   | 3,975              |
| Wildlife Other than Waterfowl   | 3,954              |
| Upstream/Downstream Source  | 492                |
| Natural Sources   | 1,420              |

| Sources of Impairment  | Total Size (miles) |
|--|--------------------|
| <b>Resource Extraction</b>   |                    |
| Dredge Mining  | 25                 |
| Reclamation of Inactive Mining   | 195                |
| <b>Spills and Unpermitted Discharges</b>                                 |                    |
| Sewage Discharges in Unsewered Areas                                     | 7,379              |
| <b>Urban-related Runoff/Stormwater (Other than Regulated Discharges)</b> |                    |
| Golf Courses   | 60                 |
| Highways, Roads, Bridges, Infrastructure (New Construction)              | 14                 |
| Post-development Erosion and Sedimentation                               | 19                 |
| Wastes from Pets   | 190                |
| Impervious Surface/Parking Lot Runoff                                    | 461                |
| Urban Runoff/Storm Sewers  | 205                |
| <b>Other Sources</b>   |                    |
| Source Unknown   | 10,182             |
| Non-Point Source   | 16,035             |

Source: IDEM 305(b) assessment database

Table 16: Individual use support summary for Indiana's Great Lakes shoreline.

| <b>Designated Beneficial Uses</b>          |                    |                       |                  |                               |                             |                             |
|--|--------------------|-----------------------|------------------|-------------------------------|-----------------------------|-----------------------------|
| Designated Beneficial Use                  | Total Size (Miles) | Size Assessed (Miles) | Percent Assessed | Size Fully Supporting (Miles) | Size Not Supporting (Miles) | Size Not Attainable (Miles) |
| Full Body Contact (Recreational Use)       | 59                 | 59                    | 100%             | 4                             | 55                          | 0                           |
| Human Health and Wildlife (Fishable Use)   | 59                 | 59                    | 100%             | 0                             | 59                          | 0                           |
| Public Water Supply                        | 31                 | 31                    | 100%             | 31                            | 0                           | 0                           |
| Warm Water Aquatic Life (Aquatic Life Use) | 59                 | 59                    | 100%             | 59                            | 0                           | 0                           |

Source: IDEM 305(b) assessment database

Table 17: Summary of national and state causes impairing Indiana's Great Lakes shoreline.

| Causes of Impairment  | Total Size (Miles) |
|-----------------------|--------------------|
| <b>Pathogens</b>      |                    |
| Escherichia coli      | 55                 |
| <b>Toxic Organics</b> |                    |
| PCB (Fish Tissue)     | 59                 |
| <b>Metals</b>         |                    |
| Mercury (Fish Tissue) | 59                 |

Source: IDEM 305(b) assessment database

Table 18: Summary of National and State Sources Impairing Great Lakes Shoreline.

| Sources of Impairment  | Total Size (Miles) |
|--|--------------------|
| <b>Land Application Waste Sites</b>  |                    |
| On-site Treatment Systems (Septic Systems and Similar Decentralized Systems) | 19                 |
| <b>Municipal Permitted Discharges (Direct and Indirect)</b>                  |                    |
| Illicit Connections/Hook-ups to Storm Sewers                                 | 19                 |
| <b>Other Sources</b>   |                    |
| Source Unknown   | 59                 |
| Non-Point Source   | 5                  |

Source: IDEM 305(b) assessment database

Table 19: Individual use support summary for Lake Michigan.

| Designated Beneficial Uses      |                    |                       |                  |                               |                             |                             |
|---------------------------------|--------------------|-----------------------|------------------|-------------------------------|-----------------------------|-----------------------------|
| Designated Beneficial Use       | Total Size (Acres) | Size Assessed (Acres) | Percent Assessed | Size Fully Supporting (Acres) | Size Not Supporting (Acres) | Size Not Attainable (Acres) |
| Aquatic life use                | -                  | -                     | -                | -                             | -                           | -                           |
| Fishable uses                   | 154,176            | 154,176               | 100%             | 0                             | 154,176                     | 0                           |
| Drinking water supply           | -                  | -                     | -                | -                             | -                           | -                           |
| Recreational use (human health) | -                  | -                     | -                | -                             | -                           | -                           |

Source: IDEM 305(b) assessment database

Table 20: Summary of national and state causes impairing Lake Michigan.

| Causes of Impairment                        | Total Size (Acres) |
|---|--------------------|
| <b>Bioaccumulative Chemicals of Concern</b> |                    |
| PCBs (Fish Tissue)                          | 154,176            |
| Mercury (Fish Tissue)                       | 154,176            |

Source: IDEM 305(b) assessment database

Table 21: Summary of national and state sources impairing Lake Michigan.

| Sources of Impairment                               | Total Size (Acres) |
|---|--------------------|
| Source Unknown (Applied to Fish Tissue Impairments) | 154,176            |

Source: IDEM 305(b) assessment database

Table 22: Individual use support summary for Indiana lakes.

| Designated Beneficial Uses                 |                    |                       |                  |                               |                             |                             |
|--|--------------------|-----------------------|------------------|-------------------------------|-----------------------------|-----------------------------|
| Designated Beneficial Use                  | Total Size (Acres) | Size Assessed (Acres) | Percent Assessed | Size Fully Supporting (Acres) | Size Not Supporting (Acres) | Size Not Attainable (Acres) |
| Full Body Contact (Recreational Use)       | 127,607            | 37,047                | 29%              | 29,035                        | 8,012                       | 0                           |
| Human Health and Wildlife (Fishable Use)   | 127,607            | 77,845                | 61%              | 27,290                        | 50,555                      | 0                           |
| Public Water Supply                        | 29,541             | 16,615                | 56%              | 230                           | 16,385                      | 0                           |
| Warm Water Aquatic Life (Aquatic Life Use) | 127,607            | 10,379                | 8%               | 3,754                         | 6,625                       | 0                           |

Source: IDEM 305(b) assessment database

Table 23: Summary of national and state causes impairing lakes and reservoirs.

| Causes of Impairment                             | Total Size (Acres) |
|--|--------------------|
| <b>Pathogens</b>                                 |                    |
| Escherichia coli                                 | 983                |
| <b>Thermal Impacts</b>                           |                    |
| Temperature, water                               | 1,556              |
| <b>Nutrients (Macronutrients/Growth Factors)</b> |                    |
| Phosphorus (Total)                               | 7,023              |
| <b>Toxic Organics</b>                            |                    |
| PCB (Fish Tissue)                                | 38,290             |
| <b>Metals</b>                                    |                    |
| Mercury (Fish Tissue)                            | 14,736             |
| <b>Mineralization</b>                            |                    |
| Taste and Odor                                   | 16,385             |
| <b>pH/Acidity/Caustic Conditions</b>             |                    |
| pH   | 105                |
| <b>Algae</b>                                     |                    |
| Chlorophyll-a                                    | 16,385             |
| <b>Other Causes</b>                              |                    |
| Cause Unknown                                    | 6,520              |

Source: IDEM 305(b) assessment database

Table 24: Summary of national and state sources impairing lakes and reservoirs.

| Sources of Impairment  | Total Size (Acres) |
|--|--------------------|
| <b>Agriculture – Animal Feeding Operations<br/>(Nonpoint Source – Not Regulated)</b> |                    |
| Agriculture  | 30                 |
| <b>Industrial Permitted Discharges</b>   |                    |
| Industrial Point Source Discharge  | 1,556              |
| <b>Legacy/Historical Pollutants</b>  |                    |
| Acid Mine Drainage   | 105                |
| <b>Municipal Permitted Discharges (Direct and Indirect)</b>                          |                    |
| Combined Sewer Overflows   | 30                 |
| <b>Urban-related Runoff/Stormwater (Other than Regulated Discharges)</b>             |                    |
| Impervious Surface/Parking Lot Runoff  | 30                 |
| <b>Other Sources</b>   |                    |
| Source Unknown   | 52,202             |
| Nonpoint Source  | 7,054              |

Source: IDEM 305(b) assessment database



Table 25: Trophic states and predicted characteristics based on Carlson TSI scores for chlorophyll-a (CHL).

| Trophic State  | TSI (CHL)       | Corresponding CHL values (ug/L) | Characteristics of Trophic State   |
|----------------|-----------------|---------------------------------|--|
| Oligotrophic   | Greater than 40 | Less than 0.95 – 2.6            | Low biological productivity <ul style="list-style-type: none"> <li>• High transparency (clear water)</li> <li>• Low levels of nutrients</li> <li>• Low algal production and little/no aquatic vegetation</li> <li>• Well oxygenated hypolimnion year round; hypolimnion of shallower lakes may become anoxic at TSI scores &gt;30</li> </ul>   |
| Mesotrophic    | 40-50*          | 2.6-7.3                         | Moderate biological productivity <ul style="list-style-type: none"> <li>• Moderately transparency (moderately clear water)</li> <li>• Moderate levels of nutrients</li> <li>• Beds of submerged aquatic plants</li> <li>• Increasing possibility of anoxia in the hypolimnion during summer</li> </ul>   |
| Eutrophic      | 50-70           | 7.3-56                          | High biological productivity <ul style="list-style-type: none"> <li>• Water has a low transparency</li> <li>• High levels of nutrients</li> <li>• Large amounts of aquatic plants or algae</li> <li>• At TSI scores &gt;60, blue-green algae dominate and algal scums and excessive macrophytes possible</li> <li>• Hypolimnion commonly anoxic; fish kills possible</li> </ul>  |
| Hypereutrophic | Greater than 70 | 56-155                          | Very high biological productivity <ul style="list-style-type: none"> <li>• Very low transparency, usually &lt;3 feet</li> <li>• Very high levels of nutrients</li> <li>• Dense algae and aquatic vegetation; algal scums and few aquatic plants at TSI scores &gt;80</li> <li>• Fish kills and/or dead zones below the surface are common</li> <li>• Hypolimnion persistently anoxic; Fish kills and/or “dead zones” below the surface common</li> </ul> |

\*Lakes with a TSI score of 50, which is on the boundary between mesotrophic and eutrophic conditions are evaluated with their corresponding TSI scores for TP and SD along with any other available information disk and classified in accordance to the best professional judgment of IDEM scientists.

Table 26: Trophic status of lakes assessed with Carlson Trophic State Index scores for Chlorophyll *a* 1990-2015.

| Trophic Status | Number of Lakes | Total Size (Acres)* |
|----------------|-----------------|---------------------|
| Oligotrophic   | 95              | 19,000              |
| Mesotrophic    | 130             | 24,061              |
| Eutrophic      | 202             | 50,205              |
| Hypereutrophic | 28              | 5,267               |
| Unknown        | 17              | 2,404               |

\*Actual values are higher. These result do not reflect acres for non-indexed lakes for which size is currently unknown.  
Source: IDEM 305(b) assessment database

Table 27: Trends in the trophic status of lakes assessed 1990-2015.

| Trend       | Number of Lakes | Total Size (Acres)* |
|-------------|-----------------|---------------------|
| Improving   | 46              | 13,773              |
| Stable      | 100             | 1,6070              |
| Fluctuating | 89              | 36,314              |
| Degrading   | 10              | 2,408               |
| Unknown     | 227             | 32,372              |

\*Actual values are higher. These result do not reflect acres for non-indexed lakes for which size is currently unknown.  
Source: IDEM 305(b) assessment database

Table 28: Calls, spills and fish kills reported from 1998 to 2016.

| Year | Calls | Spills | Fish Kills |
|------|-------|--------|------------|
| 1998 | 2,649 | 1,393  | 28         |
| 1999 | 2,507 | 1,246  | 41         |
| 2000 | 2,930 | 1,491  | 43         |
| 2001 | 3,093 | 1,591  | 51         |
| 2002 | 3,043 | 1,666  | 55         |
| 2003 | 3,026 | 1,551  | 30         |
| 2004 | 2,829 | 1,406  | 37         |
| 2005 | 3,319 | 1,271  | 40         |
| 2006 | 3,319 | 1,368  | 31         |
| 2007 | 2,852 | 1,354  | 36         |
| 2008 | 3,250 | 1,588  | 39         |
| 2009 | 2,889 | 1,226  | 39         |
| 2010 | 2,411 | 1,035  | 47         |
| 2011 | 2,160 | 934    | 10         |
| 2012 | 2,163 | 665    | 11         |
| 2013 | 2,162 | 653    | 38         |
| 2014 | 2026  | 788    | 9          |
| 2015 | 1931  | 1755   | 11         |
| 2016 | 206   | 170    |            |

Source: IDEM TEMPO database

Table 29: Major sources of ground water contamination.

| Contaminant Source  | Highest Priority | Risk Factors*    | Type of Contaminant**     |
|---|------------------|------------------|---------------------------|
| <b>Agricultural Activities</b>                                |                  |                  |                           |
| Agricultural chemical facilities                              |                  | A,C,H,I          | 5                         |
| Commercial fertilizer applications                            | X                | A, C, D, E       | 5                         |
| Confined animal feeding operations                            | X                | A, D, E          | 5, 9                      |
| Farmstead agricultural mixing and loading procedures          |                  |                  |                           |
| Irrigation practices  |                  | A,C,H,I          | 1,2,5,8,9                 |
| Animal manure applications                                    | X                | A,C,H,I          | 5, 9                      |
| Pesticide applications  |                  | A,C,H,I          | 1,2                       |
| <b>Storage and Treatment Activities</b>                       |                  |                  |                           |
| Land application  |                  | A,C,H,I          | 5,9                       |
| Domestic and industrial residual applications                 |                  | A,C,H,I          | 5,9                       |
| Material stockpiles   |                  | A,C,H,I          | 5,9                       |
| Storage tanks (above ground)                                  |                  | A,C,H,I          |                           |
| Storage tanks (underground)                                   | X                | A, B, C, D, E, F | 2, 3, 4                   |
| Surface impoundments  |                  |                  |                           |
| Waste piles   |                  | A,C,H,I          | 5,9                       |
| <b>Disposal Activities</b>                                    |                  |                  |                           |
| Deep injection wells  |                  |                  |                           |
| Landfills (constructed prior to 1989)                         | X                | A, B, C, D, E, F | 1, 2, 3, 4, 5, 6, 7, 8, 9 |
| Permitted landfills (constructed 1989- present)               |                  |                  |                           |
| Septic systems  | X                | A, C, D, E, F, G | 1, 2, 3, 4, 5, 7, 9       |
| Shallow (Class V) injection wells                             | X                | A, B, C, D, E, I | 1, 2, 3, 4, 5, 7, 9       |
| <b>Other</b>  |                  |                  |                           |
| Hazardous waste generators                                    |                  | A                |                           |
| Hazardous waste sites   |                  | A                |                           |
| Industrial facilities   | X                | A, B, C, D, E, F | 1, 2, 3, 4, 5, 7, 8, 9    |
| Liquid transport pipelines (including sewer)                  |                  | A                | 8                         |
| Materials spills (including during transport)                 | X                | A, B, C, D, E, F | 1, 2, 3, 4, 5, 7, 8, 9    |
| Material transfer operations                                  |                  | A                |                           |
| Small-scale manufacturing and repair shops                    |                  | A, I             | 8                         |
| Mining and mine drainage                                      |                  | A                | 7,8                       |
| Salt storage (state and nonstate facilities) and road salting | X                | A, C, D, E, F    | 6                         |
| Urban runoff  |                  | A, C, H, I       | 1, 2, 4, 5, 7, 8, 9       |

Source: U.S. EPA 2006a; 2007

\*Factors considered in selecting the contaminant source: (A) human health and/or environmental risk (toxicity); (B) size of the population at risk; (C) location of source relative to drinking water source; (D) number and/or size of contaminant sources; (E) hydrogeologic sensitivity; (F) documented state findings, other findings; (G) high to very high priority in localized areas, but not over majority of Indiana; (H) geographic distribution/occurrence; and, (I) lack of information.

\*\*Classes of contaminants associated with contamination source: (1) Inorganic pesticides; (2) Organic pesticides; (3) Halogenated solvents; (4) Petroleum compounds; (5) Nitrate; (6) Salinity/brine; (7) Metals; (8) Radionuclides; and, (9) Bacteria, protozoa and viruses.

Table 30: Ground water protection programs and activities currently established or under development in Indiana.

| Program or Activity  | Status                               | State Agency/Organization                            |
|--|--------------------------------------|--|
| Active SARA Title III Program  | Fully established                    | IDEM-OLQ <sup>1</sup>                                |
| Ambient ground water monitoring program  | Under development                    | IDEM-OWQ   |
| Aquifer sensitivity assessment   | Fully established                    | IDEM-OWQ, IDNR, IGS <sup>2</sup> , OISC <sup>3</sup> |
| Aquifer mapping/basin studies  | Under development                    | IDNR, IDEM-OWQ                                       |
| Aquifer/ hydrogeologic setting characterization                                | Fully established                    | IGS, IDEM-OWQ, IDNR                                  |
| Bulk storage program for agricultural chemicals                                | Fully established                    | OISC   |
| Comprehensive data management system   | Under development                    | IDEM-OWQ   |
| Complaint response program for private wells                                   | Fully established                    | IDEM-OWQ   |
| Confined animal feeding program  | Fully established                    | IDEM-OWQ   |
| Ground water discharge permits for constructed wetlands                        | Under development                    | IDEM-OWQ   |
| Ground water Best Management Practices   | Under development                    | OISC*, IDEM-OWQ                                      |
| Ground water legislation   | Fully established                    | IDEM, IDNR, OISC, ISDH                               |
| Ground water classification  | Fully established                    | IDEM-OWQ   |
| Ground water quality standards   | Fully established                    | IDEM-OWQ   |
| Land application of domestic and industrial residuals                          | Fully established                    | IDEM-OLQ   |
| Nonpoint source controls   | Under development                    | IDEM-OWQ   |
| Oil and Gas  | Fully established                    | IDNR   |
| Pesticide State Management Plan  | Pending                              | OISC*, IDEM-OWQ, IDNR, IGS                           |
| Pollution Prevention Program   | Fully established                    | IDEM-OPPTA <sup>4</sup>                              |
| Reclamation  | Fully established                    | IDNR   |
| Resource Conservation and Recovery Act (RCRA) Primacy                          | Fully established                    | IDEM-OLQ   |
| Sensitivity assessment for drinking water/ wellhead protection                 | Fully established                    | IGS, IDEM-OWQ  |
| Spill Monitoring   | Fully established                    | IDEM-OWQ   |
| State Superfund  | Fully established                    | IDEM-OLQ   |
| State RCRA Program incorporating more stringent requirements than RCRA primacy | Fully established                    | IDEM-OLQ   |
| State septic system regulations  | Fully established                    | ISDH   |
| Underground storage tank installation requirements                             | Fully established                    | IDEM-OLQ   |
| Underground Storage Tank Remediation Fund                                      | Fully established                    | IDEM-OLQ   |
| Underground Storage Tank Permit Program  | Fully established                    | IDEM-OLQ   |
| Underground Injection Control Program  | Fully established for Class II wells | IDNR   |
| Well abandonment regulations   | Fully established                    | IDNR   |
| Wellhead Protection Program  | Fully established                    | IDEM-OWQ   |
| Well installation regulations  | Fully established                    | IDNR   |

\*Indicates lead agency involved in enforcement or implementation.

"Pending" is used to describe those programs that have a written draft policy; "under development" is used to describe those programs still in the planning stage.

<sup>1</sup>OLQ, Office of Land Quality; <sup>2</sup>IGS, Indiana Geological Survey; <sup>3</sup>OISC, Office of the Indiana State Chemist; <sup>4</sup>OPPTA, Office of Pollution Prevention and Technical Assistance (IDEM).

Table 31: Indiana Ground Water Monitoring Network analytical results, 2012.

| Analyte Measured as Milligrams per Liter (mg/L) or Micrograms per Liter (ug/L) | Number of Samples (n) | n Below Detection Limit (BDL) | % BDL | DL   | Median | Mean   | Min   | Max  | Standard Deviation | EPA Maximum Contaminant Level (MCL) | EPA Secondary Maximum Contaminant Level (SMCL) or Recommendation (REC) | n > MCL or SMCL | % > MCL or SMCL |
|--|-----------------------|-------------------------------|-------|------|--------|--------|-------|------|--------------------|-------------------------------------|--|-----------------|-----------------|
| <b>Alkalinity and Anions/Cations</b>   |                       |                               |       |      |        |        |       |      |                    |                                     |  |                 |                 |
| Alkalinity (mg/L)  | 326                   | 0                             | 0.00  | 1    | 273    | 267.30 | 21.6  | 767  | 82.75              | --                                  | --   |                 |                 |
| Calcium (mg/L)   | 326                   | 8                             | 2.50  | 0.1  | 80     | 79.68  | 0.1   | 300  | 39.55              | --                                  | --   |                 |                 |
| Chloride (mg/L)  | 326                   | 37                            | 11.30 | 2    | 12     | 23.63  | 2     | 400  | 39.75              | --                                  | --   |                 |                 |
| Magnesium (mg/L)   | 326                   | 12                            | 3.70  | 0.1  | 28     | 28.94  | 0.1   | 200  | 19.37              | --                                  | --   |                 |                 |
| Potassium (mg/L)   | 326                   | 4                             | 1.20  | 0.2  | 1.4    | 2.06   | 0.2   | 40   | 3.01               | --                                  | --   |                 |                 |
| Sodium (mg/L)  | 326                   | 0                             | 0.00  | 0.1  | 11     | 35.62  | 1.3   | 660  | 66.90              | --                                  | 200 mg/L (rec)   | 11              | 3.37            |
| Sulfate (mg/L)   | 326                   | 46                            | 14.10 | 5    | 34     | 69.46  | 5     | 1500 | 159.28             | --                                  | 250 mg/L   | 15              | 4.60            |
| <b>Metals and Minerals</b>   |                       |                               |       |      |        |        |       |      |                    |                                     |  |                 |                 |
| Arsenic (ug/L)   | 326                   | 211                           | 64.70 | 2    | 2      | 4.18   | 2     | 69   | 6.79               | 10 ug/L                             | --   | 23              | 7.06            |
| Barium (ug/L)  | 326                   | 14                            | 4.30  | 2    | 82.5   | 129.25 | 2     | 1100 | 148.30             | 2000 ug/L                           | --   | 0               | 0.00            |
| Boron (ug/L)   | 326                   | 3                             | 0.90  | 5    | 28     | 102.24 | 5     | 1400 | 193.09             | --                                  | --   |                 |                 |
| Bromide (mg/L)   | 326                   | 20                            | 6.10  | 10   | 27     | 65.98  | 10    | 4000 | 257.81             | --                                  | --   |                 |                 |
| Chromium (ug/L)  | 326                   | 324                           | 99.40 | 2    | 2      | 2.02   | 2     | 6.2  | 0.26               | 100 ug/L                            | --   | 0               | 0.00            |
| Copper (ug/L)  | 326                   | 147                           | 45.10 | 1    | 1.3    | 4.11   | 1     | 97   | 8.65               | 1300 ug/L                           | --   | 0               | 0.00            |
| Iron (mg/L)  | 326                   | 104                           | 31.90 | 0.02 | 0.49   | 0.91   | 0.02  | 7.2  | 1.15               | --                                  | 0.3 mg/L   | 180             | 55.21           |
| Lead (ug/L)  | 326                   | 323                           | 99.10 | 1    | 1      | 1.05   | 1     | 10   | 0.59               | 15 ug/L                             | --   | 0               | 0.00            |
| Nickel (ug/L)  | 326                   | 91                            | 27.90 | 1    | 1.6    | 2.07   | 1     | 19   | 1.71               | --                                  | 100 ug/L (rec)   | 0               | 0.00            |
| Silicon (mg/L)   | 326                   | 0                             | 0.00  | 0.1  | 14     | 14.69  | 6.7   | 36   | 4.36               | --                                  | --   |                 |                 |
| Strontium (mg/L)   | 326                   | 10                            | 3.10  | 2    | 0.18   | 1.68   | 0.002 | 37   | 4.20               | --                                  | 4 mg/L (rec)   | 35              | 10.74           |
| Zinc (ug/L)  | 326                   | 106                           | 32.50 | 5    | 11     | 32.67  | 5     | 600  | 71.03              | --                                  | 5000 ug/L  | 0               | 0.00            |

| Analyte Measured as Milligrams per Liter (mg/L) or Micrograms per Liter (ug/L) | Number of Samples (n) | n Below Detection Limit (BDL) | % BDL | DL   | Median | Mean | Min  | Max  | Standard Deviation | EPA Maximum Contaminant Level (MCL) | EPA Secondary Maximum Contaminant Level (SMCL) or Recommendation (REC) | n > MCL or SMCL | % > MCL or SMCL |
|--|-----------------------|-------------------------------|-------|------|--------|------|------|------|--------------------|-------------------------------------|--|-----------------|-----------------|
| <b>Nitrogen, Nitrate-Nitrite</b>   |                       |                               |       |      |        |      |      |      |                    |                                     |  |                 |                 |
| Nitrogen, Nitrate-Nitrite (mg/L)   | 326                   | 167                           | 51.20 | 0.1  | 0.1    | 2.02 | 0.01 | 27   | 4.30               | 10 mg/L                             | --   | 17              | 5.21            |
| <b>Pesticides and Breakdown Products</b>                                       |                       |                               |       |      |        |      |      |      |                    |                                     |  |                 |                 |
| Acetochlor ESA (ug/L)  | 50                    | 46                            | 92.00 | 0.1  | 0.1    | 0.21 | 0.1  | 3.8  | 0.57               | --                                  | --   |                 |                 |
| Acetochlor OA (ug/L)   | 51                    | 48                            | 94.10 | 0.1  | 0.1    | 0.13 | 0.1  | 1.6  | 0.21               | --                                  | --   |                 |                 |
| Alachlor ESA (ug/L)  | 43                    | 40                            | 93.00 | 0.1  | 0.1    | 0.14 | 0.1  | 1.2  | 0.19               | --                                  | --   |                 |                 |
| Atrazine (ug/L)  | 325                   | 324                           | 99.70 | 0.1  | 0.1    | 0.10 | 0.1  | 0.3  | 0.01               | 3 ug/L                              | --   | 0               | 0.00            |
| Metolochlor ESA (ug/L)   | 46                    | 39                            | 84.80 | 0.1  | 0.1    | 0.21 | 0.1  | 2    | 0.34               | --                                  | --   |                 |                 |
| Metolochlor OA (ug/L)  | 47                    | 44                            | 93.60 | 0.1  | 0.1    | 0.12 | 0.1  | 0.6  | 0.08               | --                                  | --   |                 |                 |
| <b>Volatile Organic Compounds</b>  |                       |                               |       |      |        |      |      |      |                    |                                     |  |                 |                 |
| Benzo(a)pyrene (ug/L)  | 326                   | 325                           | 99.70 | 0.02 | 0.02   | 0.02 | 0.02 | 0.03 | 0.0005             | 0.2 ug/L                            | --   | 0               | 0.00            |
| Methyl-t-butyl ether (MTBE) (ug/L)   | 325                   | 324                           | 99.70 | 0.5  | 0.5    | 0.51 | 0.5  | 3.8  | 0.18               | --                                  | 20 ug/L  | 0               | 0.00            |
| Tetrachloroethylene (ug/L)   | 325                   | 324                           | 99.70 | 0.5  | 0.5    | 0.51 | 0.5  | 4.7  | 0.23               | 5 ug/L                              | --   | 0               | 0.00            |
| Toluene (ug/L)   | 325                   | 324                           | 99.70 | 0.6  | 0.5    | 0.50 | 0.5  | 0.6  | 0.01               | 1000 ug/L                           | --   | 0               | 0.00            |

\*\*\*Disinfection Byproducts and plasticizers have been omitted from this list until further analysis and sampling can be conducted to determine the source

Table 32: Summary statistics calculated from nitrogen concentrations measured as milligrams per liter (mg/L) nitrate-nitrite for Indiana’s generalized hydrogeologic settings.

| Hydrogeologic Setting         | Number of Samples (n) | n Above Detection Limit (ADL) | % ADL | n Above Maximum Contaminant Level (MCL) | % Above MCL | Median | Mean  | Min   | Max   | Standard Deviation |
|-------------------------------|-----------------------|-------------------------------|-------|---|-------------|--------|-------|-------|-------|--------------------|
| Ablation Sequence             | 5                     | 0                             | 0     | 0                                       | 0           | 0.005  | 0.005 | 0.005 | 0.01  | 0.00               |
| Alluvial Valley               | 5                     | 2                             | 40    | 0                                       | 0           | 0.005  | 0.473 | 0.005 | 1.60  | 0.71               |
| Dissected Bedrock             | 4                     | 2                             | 50    | 0                                       | 0           | 0.068  | 0.070 | 0.005 | 0.14  | 0.08               |
| Dissected Bedrock Thin Till   | 17                    | 11                            | 65    | 1                                       | 6           | 0.170  | 1.736 | 0.005 | 13.00 | 3.28               |
| Fan Head Complex              | 5                     | 1                             | 20    | 0                                       | 0           | 0.005  | 0.080 | 0.005 | 0.38  | 0.17               |
| Ice Contact Deposits          | 2                     | 1                             | 50    | 1                                       | 50          | 7.003  | 7.003 | 0.005 | 14.00 | 9.90               |
| Karst Plain and Escarpment    | 9                     | 7                             | 78    | 0                                       | 0           | 0.530  | 2.235 | 0.005 | 7.90  | 2.92               |
| Lake Deposits                 | 5                     | 3                             | 60    | 0                                       | 0           | 0.051  | 1.610 | 0.005 | 7.70  | 3.41               |
| Meltwater Channel             | 1                     | 0                             | 0     | 0                                       | 0           | 0.005  | 0.005 | 0.005 | 0.01  |                    |
| Outwash Complex               | 6                     | 2                             | 33    | 0                                       | 0           | 0.005  | 0.127 | 0.005 | 0.45  | 0.20               |
| Outwash Plain                 | 22                    | 8                             | 36    | 2                                       | 9           | 0.005  | 2.627 | 0.005 | 22.00 | 5.47               |
| Sand Plains and Loess Sands   | 30                    | 17                            | 57    | 1                                       | 3           | 0.012  | 1.638 | 0.005 | 16.00 | 3.54               |
| Sluiceway or Discrete Channel | 34                    | 15                            | 44    | 2                                       | 6           | 0.005  | 1.802 | 0.005 | 15.00 | 3.69               |
| Till Capped Fan               | 9                     | 4                             | 44    | 0                                       | 0           | 0.005  | 0.467 | 0.005 | 4.00  | 1.33               |
| Till Cored Moraine            | 44                    | 9                             | 20    | 0                                       | 0           | 0.005  | 0.088 | 0.005 | 2.80  | 0.42               |
| Till Plain                    | 151                   | 40                            | 26    | 0                                       | 0           | 0.005  | 0.180 | 0.005 | 6.40  | 0.79               |
| Trough System                 | 4                     | 1                             | 25    | 0                                       | 0           | 0.005  | 0.379 | 0.005 | 1.50  | 0.75               |
| Tunnel Valley                 | 10                    | 3                             | 30    | 0                                       | 0           | 0.005  | 0.532 | 0.005 | 4.30  | 1.35               |
| Unconfined Outwash Fan        | 16                    | 6                             | 38    | 0                                       | 0           | 0.005  | 0.344 | 0.005 | 1.90  | 0.71               |
| Wabash River Valley           | 11                    | 7                             | 64    | 2                                       | 18          | 1.100  | 5.023 | 0.005 | 17.00 | 6.57               |

Table 33 Average nitrogen concentrations measured as milligrams per liter (mg/L) nitrate-nitrite for each hydrogeologic setting calculated for different well type and depth, aquifer conditions and aquifer sensitivity.

| Hydrogeologic Setting         | Well Type |                | Well Depth |        |         |       | Aquifer Conditions | Aquifer Conditions |          |       |          |            |
|-------------------------------|-----------|----------------|------------|--------|---------|-------|--------------------|--------------------|----------|-------|----------|------------|
|                               | Bedrock   | Unconsolidated | 0-50       | 50-100 | 100-150 | >150  | Oxidizing          | High               | Moderate | Low   | Variable | Low , High |
| Ablation Sequence             | ND        | ND             | ND         | ND     | ND      | --    | ND                 | ND                 | --       | --    | --       | --         |
| Alluvial Valley               | 0.473     | --             | --         | 0.803  | --      | 0.253 | 1.175              | 0.473              | --       | --    | --       | --         |
| Dissected Bedrock             | 0.092     | 0.070          | --         | --     | 0.130   | 0.050 | 0.092              | 0.070              | --       | --    | --       | --         |
| Dissected Bedrock Thin Till   | 0.447     | 3.576          | 4.972      | 0.045  | 1.104   | 0.279 | 3.130              | 0.869              | 0.038    | 4.410 | --       | 0.280      |
| Fan Head Complex              | 0.193     | ND             | --         | 0.130  | ND      | --    | ND                 | 0.380              | ND       | --    | ND       | --         |
| Ice Contact Deposits          | --        | 7.003          | --         | 14.000 | ND      | --    | --                 | ND                 | 14.000   | --    | --       | --         |
| Karst Plain and Escarpment    | 2.472     | 0.340          |            | 6.000  | 1.762   | 1.770 | 2.152              | 2.235              | --       | --    | --       | --         |
| Lake Deposits                 | ND        | 2.012          | ND         | 7.700  | 0.115   | --    | 0.115              | ND                 | ND       | 2.680 | --       | --         |
| Outwash Complex               | 0.370     | ND             | --         | ND     | 0.148   | 0.450 | 0.370              | 0.127              | --       | --    | --       | --         |
| Outwash Plain                 | ND        | 2.752          | 4.038      | 1.332  | ND      | ND    | 9.140              | 2.627              | --       | --    | --       | --         |
| Sand Plains and Loess Sands   | 3.041     | 0.825          | 0.829      | 1.760  | 2.683   | 1.965 | 3.473              | 0.485              | 2.923    | 6.800 | --       | --         |
| Sluiceway or Discrete Channel | 0.017     | 2.184          | 3.869      | 1.594  | 0.610   | 0.038 | 4.699              | 1.856              | ND       | --    | --       | --         |
| Till Capped Fan               | --        | 0.467          | --         | 0.008  | 1.040   | --    | 1.385              | ND                 | ND       | 0.078 | 0.807    | --         |
| Till Cored Moraine            | 0.050     | 0.096          | 1.403      | 0.036  | 0.030   | 0.006 | 0.135              | ND                 | 0.034    | 0.119 | ND       | --         |
| Till Plain                    | 0.139     | 0.203          | 0.595      | 0.177  | 0.148   | 0.085 | 0.975              | 0.219              | 0.047    | 0.244 | ND       | --         |
| Trough System                 | --        | 0.379          | ND         | 0.503  | --      | --    | 1.500              | 0.379              | --       | --    | --       | --         |
| Tunnel Valley                 | 1.735     | 0.016          | 0.303      | 0.873  | 0.021   | --    | 1.735              | ND                 | --       | --    | 0.663    | --         |
| Unconfined Outwash Fan        | --        | 0.344          | 0.006      | 0.345  | 0.624   | 0.011 | 0.855              | 0.240              | 1.900    | --    | --       | --         |
| Wabash River Valley           | 0.007     | 6.904          | 8.515      | 3.376  | 6.179   | ND    | 6.368              | 5.525              | --       | --    | ND       | --         |

Note: ND = not detected. Detailed averages were not compiled for the Meltwater Channel Setting, which consisted of only one sample.



Table 34: Summary statistics calculated from arsenic concentrations in micrograms per liter (ug/L) for Indiana's generalized hydrogeologic settings.

| Hydrogeologic Setting         | Number of Samples (n) | n Above Detection Limit (ADL) | % ADL | n Above Maximum Contaminant Level (MCL) | % Above MCL | Median (ug/L) | Mean (ug/L) | Minimum (ug/L) | Maximum (ug/L) | Standard Deviation (ug/L) |
|-------------------------------|-----------------------|-------------------------------|-------|---|-------------|---------------|-------------|----------------|----------------|---------------------------|
| Ablation Sequence             | 5                     | 3                             | 60    | 1                                       | 20          | 2.5           | 5.3         | 1.0            | 16.0           | 6.32                      |
| Alluvial Valley               | 5                     | 1                             | 20    | 1                                       | 20          | 1.0           | 6.6         | 1.0            | 29.0           | 12.52                     |
| Dissected Bedrock             | 4                     | 1                             | 25    | 0                                       | 0           | 1.0           | 1.8         | 1.0            | 4.2            | 1.60                      |
| Dissected Bedrock Thin Till   | 17                    | 3                             | 18    | 0                                       | 0           | 1.0           | 1.3         | 1.0            | 3.8            | 0.74                      |
| Fan Head Complex              | 5                     | 1                             | 20    | 0                                       | 0           | 1.0           | 1.4         | 1.0            | 3.2            | 0.98                      |
| Ice Contact Deposits          | 2                     | 1                             | 50    | 1                                       | 50          | 6.5           | 6.5         | 1.0            | 12.0           | 7.78                      |
| Karst Plain and Escarpment    | 9                     | 0                             | 0     | 0                                       | 0           | 1.0           | 1.0         | 1.0            | 1.0            | 0.00                      |
| Lake Deposits                 | 5                     | 2                             | 40    | 1                                       | 20          | 1.0           | 5.9         | 1.0            | 21.0           | 8.66                      |
| Meltwater Channel             | 1                     | 1                             | 100   | 0                                       | 0           | 6.1           | 6.1         | 6.1            | 6.1            |                           |
| Outwash Complex               | 6                     | 2                             | 33    | 0                                       | 0           | 1.0           | 2.4         | 1.0            | 8.0            | 2.80                      |
| Outwash Plain                 | 22                    | 7                             | 32    | 2                                       | 9           | 1.0           | 3.1         | 1.0            | 19.0           | 4.51                      |
| Sand Plains and Loess Sands   | 30                    | 7                             | 23    | 3                                       | 10          | 1.0           | 4.4         | 1.0            | 63.0           | 11.61                     |
| Sluiceway or Discrete Channel | 34                    | 13                            | 38    | 3                                       | 9           | 1.0           | 5.9         | 1.0            | 68.0           | 13.99                     |
| Till Capped Fan               | 9                     | 3                             | 33    | 1                                       | 11          | 1.0           | 4.7         | 1.0            | 28.0           | 8.90                      |
| Till Cored Moraine            | 44                    | 20                            | 45    | 2                                       | 5           | 1.0           | 3.2         | 1.0            | 16.0           | 3.44                      |
| Till Plain                    | 151                   | 67                            | 44    | 25                                      | 17          | 1.0           | 5.2         | 1.0            | 65.0           | 7.81                      |
| Trough System                 | 4                     | 1                             | 25    | 0                                       | 0           | 1.0           | 1.4         | 1.0            | 2.7            | 0.85                      |
| Tunnel Valley                 | 10                    | 4                             | 40    | 1                                       | 10          | 1.0           | 4.1         | 1.0            | 21.0           | 6.41                      |
| Unconfined Outwash Fan        | 16                    | 8                             | 50    | 1                                       | 6           | 1.8           | 4.5         | 1.0            | 17.0           | 4.64                      |
| Wabash River Valley           | 11                    | 2                             | 18    | 1                                       | 9           | 1.0           | 3.6         | 1.0            | 27.0           | 7.80                      |

Table 35: Average arsenic concentrations in micrograms per liter (ug/L) for each hydrogeologic setting calculated for different well type and depth, aquifer conditions and aquifer sensitivity.

| Hydrogeologic Setting         | Well Type |                | Aquifer Conditions |          | Hydrogeologic Sensitivity |          |       |          |            | Well Depth |        |         |       |
|-------------------------------|-----------|----------------|--------------------|----------|---------------------------|----------|-------|----------|------------|------------|--------|---------|-------|
|                               | Bedrock   | Unconsolidated | Oxidizing          | Reducing | High                      | Moderate | Low   | Variable | Low , High | 0-50       | 50-100 | 100-150 | >150  |
| Ablation Sequence             | 16.00     | 2.65           | 6.10               | 5.13     | 2.50                      | --       | --    | --       | --         | 1.00       | 3.55   | 9.25    | --    |
| Alluvial Valley               | 6.60      | --             | ND                 | 10.33    | ND                        | --       | --    | --       | --         | --         | ND     | --      | 10.33 |
| Dissected Bedrock             | 2.07      | ND             | ND                 | 4.20     | 1.80                      | --       | --    | --       | --         | --         | --     | ND      | 2.07  |
| Dissected Bedrock Thin Till   | 1.11      | 1.56           | 1.12               | 1.49     | ND                        | 1.78     | ND    | --       | ND         | 1.22       | 1.78   | ND      | 1.00  |
| Fan Head Complex              | ND        | 1.73           | ND                 | 1.55     | ND                        | ND       | --    | 2.10     | --         | --         | 1.73   | ND      | --    |
| Ice Contact Deposits          | --        | 6.50           | --                 | 6.50     | 12.00                     | ND       | --    | --       | --         | --         | ND     | 12.00   | --    |
| Karst Plain and Escarpment    | ND        | ND             | ND                 | ND       | ND                        | --       | --    | --       | --         |            | ND     | ND      | ND    |
| Lake Deposits                 | ND        | 7.18           | 9.23               | ND       | 21.00                     | 1.00     | 2.57  | --       | --         | ND         | ND     | 9.23    | --    |
| Outwash Complex               | ND        | 3.15           | ND                 | 3.15     | 2.43                      | --       | --    | --       | --         | --         | 3.87   | ND      | ND    |
| Outwash Plain                 | ND        | 3.23           | ND                 | 3.75     | 3.13                      | --       | --    | --       | --         | 1.55       | 4.73   | 8.05    | ND    |
| Sand Plains and Loess Sands   | ND        | 6.29           | 1.74               | 5.86     | 6.29                      | ND       | ND    | --       | --         | 3.06       | 2.98   | 11.33   | ND    |
| Sluiceway or Discrete Channel | 2.10      | 6.67           | ND                 | 8.87     | 5.85                      | 6.40     | --    | --       | --         | 1.61       | 9.68   | 2.26    | 2.65  |
| Till Capped Fan               | --        | 4.74           | 1.43               | 6.40     | ND                        | ND       | 15.15 | 2.08     | --         | --         | 2.08   | 8.08    | --    |
| Till Cored Moraine            | 2.01      | 3.49           | 1.58               | 3.43     | 2.10                      | 3.25     | 3.25  | 3.15     | --         | 3.15       | 2.66   | 3.11    | 4.10  |
| Till Plain                    | 3.93      | 5.88           | 1.24               | 5.89     | 3.67                      | 3.81     | 5.63  | 6.59     | --         | 5.08       | 4.61   | 8.49    | 3.60  |
| Trough System                 | --        | 1.43           | ND                 | 1.57     | 1.43                      | --       | --    | --       | --         | 2.70       | ND     | --      | --    |
| Tunnel Valley                 | 1.67      | 5.11           | ND                 | 5.40     | 4.85                      | --       | --    | 3.89     | --         | 3.57       | 5.62   | ND      | --    |
| Unconfined Outwash Fan        | --        | 4.47           | ND                 | 4.96     | 4.32                      | 6.70     | --    | --       | --         | 2.75       | 5.66   | 5.20    | ND    |
| Wabash River Valley           | 10.43     | ND             | 1.38               | 6.20     | 1.23                      | --       | --    | 27.00    | --         | ND         | ND     | 1.58    | 1.58  |

Note: ND = not detected