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January 31, 2012

Arkansas Department of Environmental Quality  
Attn: Marilyn Stout  
Water Division Enforcement Branch  
5301 Northshore Dr.  
North Little Rock, AR, 72118

Marilyn,

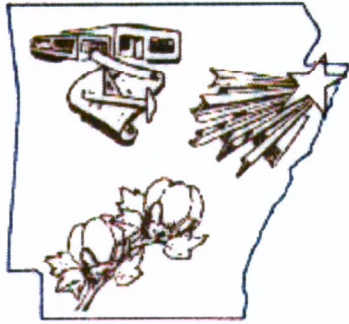
As you know, SSR is under contract to assist the City of Blytheville with attaining compliance under certain areas of their CAO (08-094). The City signed a professional services contract with SSR to conduct the collection system investigation for 10 areas of the collection system. The investigation included cleaning, televising and evaluating these 10 areas for sewer rehabilitation. The attached report summarizes these findings. If you have any questions about this report, please give me a call at (901) 683-3900.

Sincerely,

A handwritten signature in cursive script that reads "Daniel Bowling". The signature is written in dark ink and is positioned above the printed name.

Daniel Bowling, EI





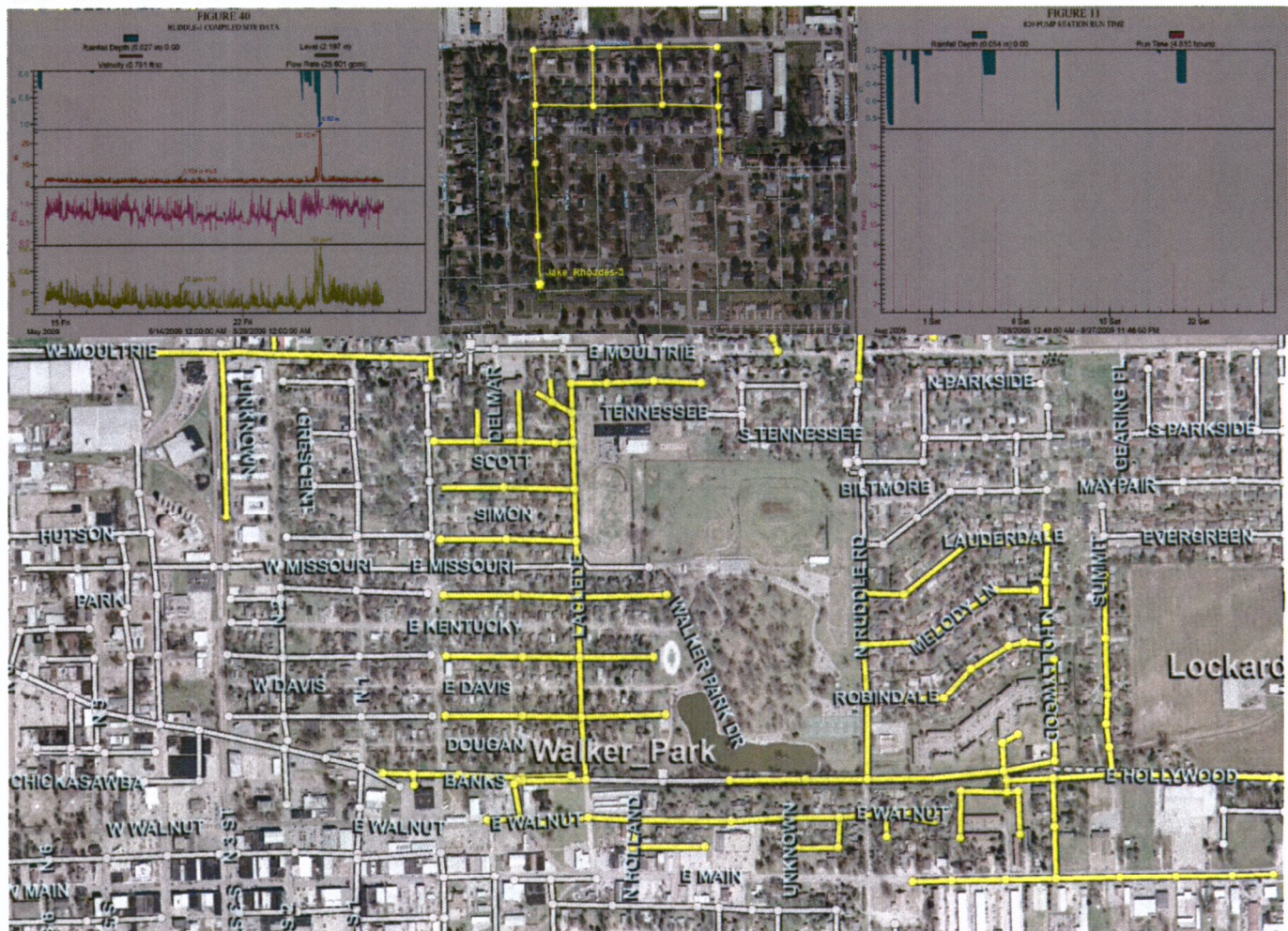
PRESENTED TO: **ADEQ**

## **CITY OF BLYTHEVILLE**

### **SANITARY SEWER COLLECTION SYSTEM REPORT**



**February 2012**





## **CCTV and Smoke Test Results**

This report describes observations and recommendations determined from televising multiple sewer collection system sites throughout the City of Blytheville. Sites were chosen using information from an inflow & infiltration study on Blytheville's sewer collection system which was completed in October of 2009. These sites were deemed critical to fixing the City's I&I problems. *Exhibit #1* shows the sites that were televised.

Smoke test results are described below as well. Information detailed below pertains to smoke leaks along the main line. Many sewer service lines showed smoke leaks as well, but these lines do not contribute as much I&I as leaks along the main and therefore are not a priority over the main line repairs. Service lines missing caps should be recapped at the earliest convenience to decrease I&I from the service lines. Information related to each site is summarized below. The information provided below is just a summary of the problem areas found during the investigation. More detailed descriptions are provided in the report binders provided by Arkansas Cleaning and Televising. See *Appendix D* for sample pages from these binders.

### **Site Name: 705-1**

- See *Exhibit #2* for the location and layout of the site.
- Minor sags were recorded in lines at this site. A leaking service connection was observed in line WD4-WD5.
- Determinations: One line at this site requires repair.

### **Site Name: 705-2**

- See *Exhibit #3* for the location and layout of the site.
- This site was CCTV'ed after a rainfall event and infiltration in all lines was noted by the contractor. Bulges were noted in multiple sections of polypipe. Large sags were recorded in many lines at this site. Light circular and longitudinal cracks were observed in multiple concrete lines. Light roots were noted in some joints. Aluminum sleeves and stainless steel inserts for old point repairs were noted. Smoke tests showed potential infiltration areas around multiple sewer manholes and service connections.
- Determinations: Infiltration areas should be sealed as soon as possible. Some lines at this site require repair. See attached tables for prioritization of lines requiring rehabilitation and associated estimated repair costs.

### **Site Name: 705-3**

- See *Exhibit #4* for the location and layout of the site.
- This site was CCTV'ed after a rainfall event and infiltration in all lines was noted by the contractor. Minor sags were recorded in most lines at this site. Larger sags were noted in line WD19-WD20. Light roots were observed in some joints. Aluminum



sleeves and PVC lines for old point repairs were noted. Line WD23-WD24 contained a 2"-3" offset joint.

- Determinations: Infiltration areas should be sealed as soon as possible. Some lines at this site require repair. See attached tables for prioritization of lines requiring rehabilitation and associated estimated repair costs.

**Site Name: 1767-1**

- See *Exhibit #5* for the location and layout of the site.
- Minor sags were recorded in many lines at this site. Light circular and longitudinal cracks were observed in multiple concrete lines. Light roots were noted in some joints. Stainless steel inserts for old point repairs were noted. Smoke tests showed potential infiltration areas around multiple sewer manholes and service connections.
- Determinations: Infiltration areas should be sealed as soon as possible. Some lines at this site require repair. See attached tables for prioritization of lines requiring rehabilitation and associated estimated repair costs.

**Site Name: 1767-2**

- See *Exhibit #6* for the location and layout of the site.
- Minor sags were recorded in most lines at this site. Light circular and longitudinal cracks were observed in multiple concrete lines. Light roots were noted in some joints on line WP79-WP80. Aluminum and PVC sections from old point repairs were noted. Smoke tests showed potential infiltration areas around multiple sewer manholes and service connections. Line WP80-WP81 contained a 2"-3" offset joint. Smoke tests showed potential infiltration areas around multiple sewer manholes and service connections.
- Determinations: Infiltration areas should be sealed as soon as possible. Some lines at this site require repair. See attached tables for prioritization of lines requiring rehabilitation and associated estimated repair costs.

**Site Name: Ruddle-1**

- See *Exhibit #7* for the location and layout of the site.
- Minor to severe sags were recorded in most lines at this site. Roots were observed in many lines. Circular cracks were noted in some lines. Line ND12-ND11 contained a 2"-3" offset joint. Smoke tests showed potential infiltration areas around multiple sewer manholes and service connections.
- Determinations: Infiltration areas should be sealed as soon as possible. Most lines at this site require repair. See attached tables for prioritization of lines requiring rehabilitation and associated estimated repair costs.



**Site Name: Walker Park-1**

- See *Exhibit #8* for the location and layout of the site.
- Minor sags were recorded in most lines at this site. Roots were observed in some lines. Circular & longitudinal cracks were noted in some lines. Some leaking joints were noted as well. Line NC75-NC74 has had a pipe bored through the top of it. Lines NC24-NC23 & NC25A-NC25 contained offset joints. Smoke tests showed potential infiltration areas around multiple sewer manholes and service connections.
- Determinations: Infiltration areas should be sealed as soon as possible. Some lines at this site require repair. See attached tables for prioritization of lines requiring rehabilitation and associated estimated repair costs.

**Site Name: Walker Park-2**

- See *Exhibit #9* for the location and layout of the site.
- Minor sags were recorded in most lines at this site. Roots were observed in some lines. Circular & longitudinal cracks were noted in some lines. Line NC81-NC81A contains a shattered pipe section. Line NC107-NC106 contained a 3" offset joint. Smoke tests showed potential infiltration areas around multiple sewer manholes and service connections.
- Determinations: Infiltration areas should be sealed as soon as possible. Some lines at this site require repair. See attached tables for prioritization of lines requiring rehabilitation and associated estimated repair costs.

**Site Name: Ward-1**

- See *Exhibit #10* for the location and layout of the site.
- Minor sags were recorded in most lines at this site. Roots were observed in many lines, including heavy roots in line WF105-WS31 & WF118-WF116. Circular & longitudinal cracks were noted in some lines. Line 90W3-90W2 contains a shattered pipe section. Line WS29-WS28 contained a 3" offset joint. Smoke tests showed potential infiltration areas around multiple sewer manholes and service connections.
- Determinations: Infiltration areas should be sealed as soon as possible. Many lines at this site require repair. See attached tables for prioritization of lines requiring rehabilitation and associated estimated repair costs.

**Site Name: Ward-2**

- See *Exhibit #11* for the location and layout of the site.
- Minor sags were recorded in most lines at this site. Roots were observed in some lines. Circular cracks were noted in some lines. Line 90W3-90W2 contains a shattered pipe section. Bottom of pipe is missing at a section of Line WF57-WF56. The pipe between WF68 & WF67 is missing.



- Determinations: Infiltration areas should be sealed as soon as possible. About half of the lines at this site require repair. See attached tables for prioritization of lines requiring rehabilitation and associated estimated repair costs.



# APPENDIX A

## HIGH PRIORITY AREAS

**TABLE 1 - HIGH PRIORITY REPAIRS**

| Upst MH #<br>to Dnst MH# | Line<br>Length (ft) | PIPE<br>TYPE | No. of<br>Services | Line<br>Conditions    | Recommendations  | Unit Cost* | Service<br>Connect | Cost          |
|--------------------------|---------------------|--------------|--------------------|-----------------------|------------------|------------|--------------------|---------------|
| 705-1                    |                     |              |                    |                       |                  |            |                    |               |
| WD5                      | 346.1               | LINER        | 2                  | FAIR/SMOKE<br>LEAK    | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 25,227.00  |
| WD4                      |                     |              |                    |                       |                  |            |                    |               |
| 705-1 Subtotal:          |                     |              |                    |                       |                  |            |                    | \$ 25,227.00  |
| 705-2                    |                     |              |                    |                       |                  |            |                    |               |
| WD33                     | 121                 | CONC         | 1                  | POOR/SMOKE<br>LEAK    | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 8,970.00   |
| WD32                     |                     |              |                    |                       |                  |            |                    |               |
| WD34                     | 156.4               | CONC         | 1                  | POOR                  | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 11,448.00  |
| WD33                     |                     |              |                    |                       |                  |            |                    |               |
| WD35                     | 336.8               | CONC         | 2                  | POOR                  | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 24,576.00  |
| WD34                     |                     |              |                    |                       |                  |            |                    |               |
| WD40                     | 232.7               | LINER        | 0                  | POOR                  | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 16,289.00  |
| WD2                      |                     |              |                    |                       |                  |            |                    |               |
| WD47                     | 234.1               | CONC         | 1                  | POOR/SMOKE<br>LEAK    | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 16,887.00  |
| WD46                     |                     |              |                    |                       |                  |            |                    |               |
| WD53                     | 197.4               | CONC         | 1                  | POOR/SMOKE<br>LEAK    | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 14,318.00  |
| WD51                     |                     |              |                    |                       |                  |            |                    |               |
| WD55                     | 163                 | CONC         | ?                  | POOR/FULL OF<br>GROUT | RELAY            | \$ 90.00   | \$ 500.00          | \$ 14,670.00  |
| WD54                     |                     |              |                    |                       |                  |            |                    |               |
| 705-2 Subtotal:          |                     |              |                    |                       |                  |            |                    | \$ 107,158.00 |
| 705-3                    |                     |              |                    |                       |                  |            |                    |               |
| WD16                     | 249.1               | CONC         | 2                  | FAIR/SMOKE<br>LEAK    | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 18,437.00  |
| WD7                      |                     |              |                    |                       |                  |            |                    |               |
| WD21                     | 172.1               | CONC         | 2                  | POOR/SMOKE<br>LEAK    | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 13,047.00  |
| WD20                     |                     |              |                    |                       |                  |            |                    |               |
| WD22                     | 216.1               | CONC         | 2                  | POOR/SMOKE<br>LEAK    | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 16,127.00  |
| WD21                     |                     |              |                    |                       |                  |            |                    |               |
| 705-3 Subtotal:          |                     |              |                    |                       |                  |            |                    | \$ 47,611.00  |

**TABLE 1 - HIGH PRIORITY REPAIRS**

| Upst MH #<br>to Dnst MH# | Line<br>Length (ft) | PIPE<br>TYPE | No. of<br>Services | Line<br>Conditions | Recommendations  | Unit Cost* | Service<br>Connect | Cost         |
|--------------------------|---------------------|--------------|--------------------|--------------------|------------------|------------|--------------------|--------------|
| 1767-1                   |                     |              |                    |                    |                  |            |                    |              |
| WP18                     | 245.2               | CONC         | 3                  | POOR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 18,664.00 |
| WP17                     |                     |              |                    |                    |                  |            |                    |              |
| WP21                     | 75.2                | CONC         | 1                  | POOR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 5,764.00  |
| WP20                     |                     |              |                    |                    |                  |            |                    |              |
| WP27                     | 206.1               | CONC         | 3                  | POOR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 15,927.00 |
| WP24                     |                     |              |                    |                    |                  |            |                    |              |
| WP29                     | 168.2               | CONC         | 2                  | POOR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 12,774.00 |
| WP22                     |                     |              |                    |                    |                  |            |                    |              |
| WP30                     | 199.1               | CONC         | 3                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 15,437.00 |
| WP31                     |                     |              |                    |                    |                  |            |                    |              |
| WP35                     | 400                 | CONC         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 30,000.00 |
| WP34                     |                     |              |                    |                    |                  |            |                    |              |
| WP44                     | 363.9               | CONC         | 3                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 26,973.00 |
| WP42                     |                     |              |                    |                    |                  |            |                    |              |
| WP40                     | 410.3               | LINER        | 6                  | FAIR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 31,721.00 |
| WP39                     |                     |              |                    |                    |                  |            |                    |              |
| 1767-1 Subtotal:         |                     |              |                    |                    |                  |            |                    | \$ 72,410.00 |
| 1767-2                   |                     |              |                    |                    |                  |            |                    |              |
| WP78                     | 464                 | CONC         | 5                  | POOR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 34,980.00 |
| WP2                      |                     |              |                    |                    |                  |            |                    |              |
| WP79                     | 350.2               | CONC         | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 25,014.00 |
| WP78                     |                     |              |                    |                    |                  |            |                    |              |
| WP80                     | 80                  | CONC         | 0                  | POOR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 5,600.00  |
| WP79                     |                     |              |                    |                    |                  |            |                    |              |
| WP82                     | 391.6               | CONC         | 2                  | POOR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 28,412.00 |
| WP81                     |                     |              |                    |                    |                  |            |                    |              |
| 1767-2 Subtotal:         |                     |              |                    |                    |                  |            |                    | \$ 94,006.00 |
| Ruddle-1                 |                     |              |                    |                    |                  |            |                    |              |

**TABLE 1 - HIGH PRIORITY REPAIRS**

| Upst MH #<br>to Dnst MH# | Line<br>Length (ft) | PIPE<br>TYPE | No. of<br>Services | Line<br>Conditions | Recommendations  | Unit Cost* | Service<br>Connect | Cost         |
|--------------------------|---------------------|--------------|--------------------|--------------------|------------------|------------|--------------------|--------------|
| ND6                      | 17.2                | CLAY         | ?                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 1,204.00  |
| ND6A                     |                     |              |                    |                    |                  |            |                    |              |
| ND7                      | 216.7               | CLAY         | 1                  | POOR/SMOKE<br>LEAK | RELAY            | \$ 90.00   | \$ 500.00          | \$ 20,003.00 |
| ND6                      |                     |              |                    |                    |                  |            |                    |              |
| ND8                      | 282                 | CLAY         | 3                  | POOR               | RELAY            | \$ 90.00   | \$ 500.00          | \$ 26,880.00 |
| ND7                      |                     |              |                    |                    |                  |            |                    |              |
| ND9                      | 290                 | CLAY         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 21,300.00 |
| ND8                      |                     |              |                    |                    |                  |            |                    |              |
| ND10                     | 404                 | CLAY         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 30,280.00 |
| ND9                      |                     |              |                    |                    |                  |            |                    |              |
| ND11                     | 160.6               | CLAY         | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 11,742.00 |
| ND10                     |                     |              |                    |                    |                  |            |                    |              |
| ND12                     | 205                 | CLAY         | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 14,850.00 |
| ND11                     |                     |              |                    |                    |                  |            |                    |              |
| ND15                     | 146.5               | CLAY         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 12,255.00 |
| ND14                     |                     |              |                    |                    |                  |            |                    |              |
| ND16                     | 182.3               | CLAY         | 4                  | POOR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 14,761.00 |
| ND15                     |                     |              |                    |                    |                  |            |                    |              |
| ND17                     | 92.1                | CLAY         | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 6,947.00  |
| ND13                     |                     |              |                    |                    |                  |            |                    |              |
| ND19                     | 140.9               | PVC          | 0                  | FAIR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 9,863.00  |
| ND6A                     |                     |              |                    |                    |                  |            |                    |              |
| ND21A                    | 174.5               | CLAY         | 5                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 14,715.00 |
| ND21                     |                     |              |                    |                    |                  |            |                    |              |
| ND21                     | 120.6               | CLAY         | 3                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 9,942.00  |
| ND20                     |                     |              |                    |                    |                  |            |                    |              |
| ND22                     | 209.7               | CLAY         | 2                  | POOR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 15,679.00 |
| ND21A                    |                     |              |                    |                    |                  |            |                    |              |
| ND23                     | 233.8               | CLAY         | 2                  | POOR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 17,366.00 |
| ND22                     |                     |              |                    |                    |                  |            |                    |              |
| ND26                     |                     |              |                    |                    |                  |            |                    |              |



**TABLE 1 - HIGH PRIORITY REPAIRS**

| Upst MH #<br>to Dnst MH#         | Line<br>Length (ft) | PIPE<br>TYPE | No. of<br>Services | Line<br>Conditions | Recommendations  | Unit Cost* | Service<br>Connect | Cost         |
|----------------------------------|---------------------|--------------|--------------------|--------------------|------------------|------------|--------------------|--------------|
| ND25                             | 570                 | CLAY         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 41,900.00 |
| ND27                             | 235.4               | CLAY         | 5                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 18,978.00 |
| ND25                             |                     |              |                    |                    |                  |            |                    |              |
| Ruddle-1 Subtotal: \$ 288,665.00 |                     |              |                    |                    |                  |            |                    |              |
| Walker Park 1                    |                     |              |                    |                    |                  |            |                    |              |
| NC49A                            | 231.3               | CLAY         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 18,191.00 |
| NC49                             |                     |              |                    |                    |                  |            |                    |              |
| NC49B                            | 246.4               | CLAY         | 8                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 21,248.00 |
| NC8                              |                     |              |                    |                    |                  |            |                    |              |
| NC49                             | 288.0               | CLAY         | 9                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 24,660.00 |
| NC49B                            |                     |              |                    |                    |                  |            |                    |              |
| NC50                             | 117.1               | CLAY         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 9,197.00  |
| NC9                              |                     |              |                    |                    |                  |            |                    |              |
| NC51                             | 215.8               | CLAY         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 17,106.00 |
| NC50                             |                     |              |                    |                    |                  |            |                    |              |
| NC53                             | 273.0               | CLAY         | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 19,610.00 |
| NC52                             |                     |              |                    |                    |                  |            |                    |              |
| NC54A                            | 43.3                | CLAY         | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 3,531.00  |
| NC54                             |                     |              |                    |                    |                  |            |                    |              |
| NC54                             | 98.6                | CLAY         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 7,902.00  |
| NC10A                            |                     |              |                    |                    |                  |            |                    |              |
| SERVICE CAP                      | 143.8               | CONC         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 11,066.00 |
| NC52                             |                     |              |                    |                    |                  |            |                    |              |
| SERVICE CAP                      | 47.2                | CLAY         | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 3,804.00  |
| NC54A                            |                     |              |                    |                    |                  |            |                    |              |
| Locust & Lilly                   | 229                 | CLAY         | 3                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 17,530.00 |
| Popular & Lilly                  |                     |              |                    |                    |                  |            |                    |              |
| NC 20A                           | 703                 | CONC         | 3                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 50,710.00 |
| NC19                             |                     |              |                    |                    |                  |            |                    |              |
| NC15A                            |                     |              |                    |                    |                  |            |                    |              |

**TABLE 1 - HIGH PRIORITY REPAIRS**

| Upst MH #<br>to Dnst MH#              | Line<br>Length (ft) | PIPE<br>TYPE | No. of<br>Services | Line<br>Conditions | Recommendations  | Unit Cost* | Service<br>Connect | Cost         |
|---------------------------------------|---------------------|--------------|--------------------|--------------------|------------------|------------|--------------------|--------------|
| NC15                                  | 426.2               | CLAY         | 9                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 34,334.00 |
| NC15                                  | 23.7                | CLAY         | 0                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 1,659.00  |
| NC16                                  |                     |              |                    |                    |                  |            |                    |              |
| NC24                                  | 291                 | CLAY         | 2                  | POOR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 21,370.00 |
| NC23                                  |                     |              |                    |                    |                  |            |                    |              |
| NC25A                                 | 344                 | CLAY         | 11                 | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 29,580.00 |
| NC25                                  |                     |              |                    |                    |                  |            |                    |              |
| NC25                                  | 193.9               | CLAY         | 3                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 15,073.00 |
| NC24                                  |                     |              |                    |                    |                  |            |                    |              |
| Walker Park 1 Subtotal: \$ 306,571.00 |                     |              |                    |                    |                  |            |                    |              |
| Walker Park 2                         |                     |              |                    |                    |                  |            |                    |              |
| 1                                     | 67.6                | CLAY         | 1                  | POOR               | RELAY            | \$ 90.00   | \$ 500.00          | \$ 6,584.00  |
| 2                                     |                     |              |                    |                    |                  |            |                    |              |
| NC66                                  | 80.6                | CONC         | 2                  | POOR               | BURST/RELAY      | \$ 85.00   | \$ 500.00          | \$ 7,851.00  |
| NC65                                  |                     |              |                    |                    |                  |            |                    |              |
| NC86                                  | 349.5               | CLAY         | 9                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 28,965.00 |
| NC85                                  |                     |              |                    |                    |                  |            |                    |              |
| NC87                                  | 397                 | CLAY         | 12                 | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 33,790.00 |
| NC86                                  |                     |              |                    |                    |                  |            |                    |              |
| NC89                                  | 232.4               | TRUSS        | 3                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 17,768.00 |
| NC88                                  |                     |              |                    |                    |                  |            |                    |              |
| NC93                                  | 343                 | CONC         | 3                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 25,510.00 |
| NC92                                  |                     |              |                    |                    |                  |            |                    |              |
| NC94                                  | 300.1               | CONC         | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 21,507.00 |
| NC93                                  |                     |              |                    |                    |                  |            |                    |              |
| NC95                                  | 320.3               | CONC         | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 22,921.00 |
| NC94                                  |                     |              |                    |                    |                  |            |                    |              |
| NC99                                  | 240                 | CONC         | 5                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 19,300.00 |
| NC98                                  |                     |              |                    |                    |                  |            |                    |              |
| NC100                                 |                     |              |                    |                    |                  |            |                    |              |

**TABLE 1 - HIGH PRIORITY REPAIRS**

| Upst MH #<br>to Dnst MH#              | Line<br>Length (ft) | PIPE<br>TYPE | No. of<br>Services | Line<br>Conditions | Recommendations  | Unit Cost* | Service<br>Connect | Cost         |
|---------------------------------------|---------------------|--------------|--------------------|--------------------|------------------|------------|--------------------|--------------|
| NC99                                  | 217.1               | CONC         | 5                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 17,697.00 |
| NC102                                 | 263.2               | CONC         | 6                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 21,424.00 |
| NC101                                 |                     |              |                    |                    |                  |            |                    |              |
| NC103                                 | 361.9               | CLAY         | 7                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 28,833.00 |
| NC92                                  |                     |              |                    |                    |                  |            |                    |              |
| NC104                                 | 563                 | CLAY         | 4                  | POOR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 41,410.00 |
| NC103                                 |                     |              |                    |                    |                  |            |                    |              |
| NC105                                 | 246                 | CLAY         | 1                  | POOR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 17,720.00 |
| NC104                                 |                     |              |                    |                    |                  |            |                    |              |
| NC108                                 | 250                 | CLAY         | 3                  | POOR               | RELAY            | \$ 90.00   | \$ 500.00          | \$ 24,000.00 |
| NC107                                 |                     |              |                    |                    |                  |            |                    |              |
| NC109                                 | 242.7               | CLAY         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 18,989.00 |
| NC108                                 |                     |              |                    |                    |                  |            |                    |              |
| NC110                                 | 160.7               | CLAY         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 13,249.00 |
| NC109                                 |                     |              |                    |                    |                  |            |                    |              |
| NC111                                 | 264.9               | CLAY         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 20,543.00 |
| NC110                                 |                     |              |                    |                    |                  |            |                    |              |
| NC72                                  | 257.4               | CONC         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 20,018.00 |
| NC71                                  |                     |              |                    |                    |                  |            |                    |              |
| NC74                                  | 335.5               | CONC         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 24,485.00 |
| NC73                                  |                     |              |                    |                    |                  |            |                    |              |
| NC75                                  | 245.9               | CONC         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 18,213.00 |
| NC74                                  |                     |              |                    |                    |                  |            |                    |              |
| NC112                                 | 86.1                | CLAY         | 2                  | POOR/SMOKE<br>LEAK | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 7,027.00  |
| NC109                                 |                     |              |                    |                    |                  |            |                    |              |
| EOL                                   | 148.3               | CLAY         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 11,381.00 |
| NC24                                  |                     |              |                    |                    |                  |            |                    |              |
| Walker Park 2 Subtotal: \$ 469,185.00 |                     |              |                    |                    |                  |            |                    |              |
| Ward 1                                |                     |              |                    |                    |                  |            |                    |              |
| 90W3                                  |                     |              |                    |                    |                  |            |                    |              |

**TABLE 1 - HIGH PRIORITY REPAIRS**

| Upst MH #<br>to Dnst MH# | Line<br>Length (ft) | PIPE<br>TYPE | No. of<br>Services | Line<br>Conditions | Recommendations  | Unit Cost*  | Service<br>Connect | Cost         |
|--------------------------|---------------------|--------------|--------------------|--------------------|------------------|-------------|--------------------|--------------|
| 90W2                     | 323.7               | CONC         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 23,659.00 |
| LOCUST & LILY            | 272.4               | CLAY         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 21,068.00 |
| POPLAR & LILY            |                     |              |                    |                    |                  |             |                    |              |
| MICHAELS JEWEL           | 183.9               | CONC         | 6                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 15,873.00 |
| TEE IN LINE              |                     |              |                    |                    |                  |             |                    |              |
| WF105                    | 225                 | CONC         | 5                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 18,250.00 |
| WS31                     |                     |              |                    |                    |                  |             |                    |              |
| WF108                    | 296.4               | CONC         | 3                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 22,248.00 |
| WF107                    |                     |              |                    |                    |                  |             |                    |              |
| WF109                    | 206.9               | CONC         | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 14,983.00 |
| WF108A                   |                     |              |                    |                    |                  |             |                    |              |
| WF110                    | 340.7               | CONC         | 3                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 25,349.00 |
| WF109                    |                     |              |                    |                    |                  |             |                    |              |
| WF111                    | 305.8               | CONC         | 5                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 23,906.00 |
| WF110                    |                     |              |                    |                    |                  |             |                    |              |
| WF115                    | 507.2               | CONC         | 12                 | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 41,504.00 |
| WF114                    |                     |              |                    |                    |                  |             |                    |              |
| WF116                    | 347.6               | CONC         | 3                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 25,832.00 |
| WF107                    |                     |              |                    |                    |                  |             |                    |              |
| WF118                    | 287.2               | CONC         | 5                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 22,604.00 |
| WF117                    |                     |              |                    |                    |                  |             |                    |              |
| WF119                    | 359.8               | CONC         | 8                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 29,186.00 |
| WF118                    |                     |              |                    |                    |                  |             |                    |              |
| WS1                      | 51                  | CONC         | 0                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 3,570.00  |
| PS                       |                     |              |                    |                    |                  |             |                    |              |
| WS30                     | 247.4               | CONC         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 19,318.00 |
| WS29                     |                     |              |                    |                    |                  |             |                    |              |
| WS31                     | 62.4                | CLAY         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 5,368.00  |
| WS29                     |                     |              |                    |                    |                  |             |                    |              |
| WS18                     | 115                 | CLAY         | 2                  | FAIR               | PC & INSTALL MH  | \$ 2,000.00 | -                  | \$ 2,000.00  |
| WS15                     |                     |              |                    |                    |                  |             |                    |              |



**TABLE 1 - HIGH PRIORITY REPAIRS**

| Upst MH #<br>to Dnst MH#  | Line<br>Length (ft) | PIPE<br>TYPE | No. of<br>Services | Line<br>Conditions | Recommendations  | Unit Cost* | Service<br>Connect | Cost            |
|---------------------------|---------------------|--------------|--------------------|--------------------|------------------|------------|--------------------|-----------------|
| WS24                      | 175.2               | CLAY         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 14,264.00    |
| WS23                      |                     |              |                    |                    |                  |            |                    |                 |
| Ward 1 Subtotal:          |                     |              |                    |                    |                  |            |                    | \$ 328,982.00   |
| Ward 2                    |                     |              |                    |                    |                  |            |                    |                 |
| WF57                      | 94.4                | CONC         | 0                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 6,608.00     |
| WF56                      |                     |              |                    |                    |                  |            |                    |                 |
| WF63                      | 138.5               | CONC         | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 10,195.00    |
| WF62                      |                     |              |                    |                    |                  |            |                    |                 |
| WF68                      | 252                 | PVC          | ?                  | PIPE MISSING       | RELAY            | \$ 90.00   | \$ 500.00          | \$ 22,680.00    |
| WF67                      |                     |              |                    |                    |                  |            |                    |                 |
| WF72                      | 447.4               | CONC         | 17                 | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 39,818.00    |
| WF71                      |                     |              |                    |                    |                  |            |                    |                 |
| WF71                      | 319.8               | CONC         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 24,386.00    |
| WF70                      |                     |              |                    |                    |                  |            |                    |                 |
| Ward 2 Subtotal:          |                     |              |                    |                    |                  |            |                    | \$ 103,687.00   |
| High Priority Area Total: |                     |              |                    |                    |                  |            |                    | \$ 1,843,502.00 |

\*Unit costs for BURST/RELAY/CIPP=\$70 per LF, RELAY/BURST=\$85 per LF, RELAY=\$90 per LF, REPAIR SERVICE or POINT REPAIR=\$1000 EA, SMH=\$2000 EA

# APPENDIX B

## MEDIUM PRIORITY AREAS

**TABLE 2 - MEDIUM PRIORITY REPAIRS**

| Upst MH #<br>to Dnst MH# | Line<br>Length | Pipe<br>Size | PIPE<br>TYPE | No. of<br>Services | Line<br>Conditions | Recommendations  | Unit Cost*  | Service<br>Connect | Total Cost   |
|--------------------------|----------------|--------------|--------------|--------------------|--------------------|------------------|-------------|--------------------|--------------|
| 705-2                    |                |              |              |                    |                    |                  |             |                    |              |
| WD3                      | 238.4          | 8"           | LINER        | 1                  | POOR               | RELAY/BURST      | \$ 85.00    | \$ 500.00          | \$ 20,764.00 |
| WD2                      |                |              |              |                    |                    |                  |             |                    |              |
| WD27                     | 184.9          | 10"          | LINER        | 0                  | POOR               | PT. REPAIR       | \$ 1,000.00 | \$ 500.00          | \$ 1,000.00  |
| WD2                      |                |              |              |                    |                    |                  |             |                    |              |
| WD42                     | 252.2          | 8"           | LINER        | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 18,154.00 |
| WD41                     |                |              |              |                    |                    |                  |             |                    |              |
| 705-2 Subtotal:          |                |              |              |                    |                    |                  |             |                    | \$ 39,918.00 |
| 705-3                    |                |              |              |                    |                    |                  |             |                    |              |
| WD20                     | 110.9          | 8"           | CONC         | 0                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 7,763.00  |
| WD19                     |                |              |              |                    |                    |                  |             |                    |              |
| WD24                     | 40.7           | 8"           | CONC         | 0                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 2,849.00  |
| WD23                     |                |              |              |                    |                    |                  |             |                    |              |
| 705-3 Subtotal:          |                |              |              |                    |                    |                  |             |                    | \$ 10,612.00 |
| 1767-1                   |                |              |              |                    |                    |                  |             |                    |              |
| WP41                     | 379.6          | 8"           | CONC         | 4                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 28,572.00 |
| WP40                     |                |              |              |                    |                    |                  |             |                    |              |
| WP48                     | 249            | 8"           | CONC         | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 17,930.00 |
| WP47                     |                |              |              |                    |                    |                  |             |                    |              |
| 1767-1 Subtotal:         |                |              |              |                    |                    |                  |             |                    | \$ 46,502.00 |
| 1767-2                   |                |              |              |                    |                    |                  |             |                    |              |
| WP81                     | 384.8          | 8"           | CONC         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 27,936.00 |
| WP80                     |                |              |              |                    |                    |                  |             |                    |              |
| 1767-2 Subtotal:         |                |              |              |                    |                    |                  |             |                    | \$ 27,936.00 |
| Ruddle-1                 |                |              |              |                    |                    |                  |             |                    |              |
| EOL                      | 82.8           | 6            | CLAY         | 2                  | POOR               | NEEDS M/H        | \$ 2,000.00 |                    | \$ 2,000.00  |
| ND10                     |                |              |              |                    |                    |                  |             |                    |              |

**TABLE 2 - MEDIUM PRIORITY REPAIRS**

| Upst MH #<br>to Dnst MH#         | Line<br>Length | Pipe<br>Size | PIPE<br>TYPE | No. of<br>Services | Line<br>Conditions | Recommendations  | Unit Cost*  | Service<br>Connect | Total Cost    |
|----------------------------------|----------------|--------------|--------------|--------------------|--------------------|------------------|-------------|--------------------|---------------|
| EOL                              | 83.1           | 6            | CLAY         | 1                  | POOR               | NEEDS M/H        | \$ 2,000.00 |                    | \$ 166,200.00 |
| ND22                             |                |              |              |                    |                    |                  |             |                    |               |
| ND6A                             | 320.5          | 8            | PVC          | 1                  | POOR               | RELAY            | \$ 90.00    | \$ 500.00          | \$ 29,345.00  |
| ND5                              |                |              |              |                    |                    |                  |             |                    |               |
| ND14                             | 293.7          | 6            | CLAY         | 8                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 24,559.00  |
| ND13                             |                |              |              |                    |                    |                  |             |                    |               |
| ND20                             | 381            | 6            | CLAY         | 8                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 30,670.00  |
| ND19                             |                |              |              |                    |                    |                  |             |                    |               |
| ND24                             | 200.6          | 6            | CLAY         | 3                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 15,542.00  |
| ND23                             |                |              |              |                    |                    |                  |             |                    |               |
| ND25                             | 315.3          | 6            | CLAY         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 23,071.00  |
| ND21                             |                |              |              |                    |                    |                  |             |                    |               |
| Ruddle-1 Subtotal: \$ 291,387.00 |                |              |              |                    |                    |                  |             |                    |               |
| Walker Park 1                    |                |              |              |                    |                    |                  |             |                    |               |
| NC27                             | 61.4           | 6"           | CONC         | ?                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 4,298.00   |
| NC26                             |                |              |              |                    |                    |                  |             |                    |               |
| NC28                             | 154.7          | 6"           | CONC         | 0                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 10,829.00  |
| NC20                             |                |              |              |                    |                    |                  |             |                    |               |
| NC52                             | 353.3          | 6"           | CLAY         | 6                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 27,731.00  |
| NC51                             |                |              |              |                    |                    |                  |             |                    |               |
| NC16                             | 485.6          | 10"          | CONC         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 34,992.00  |
| NC37                             |                |              |              |                    |                    |                  |             |                    |               |
| NC17                             | 27.9           | 10"          | CONC         | 0                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 1,953.00   |
| NC16                             |                |              |              |                    |                    |                  |             |                    |               |
| NC18                             | 42.3           | 10"          | CONC         | 0                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 2,961.00   |
| NC30                             |                |              |              |                    |                    |                  |             |                    |               |
| NC19                             | 18.9           | 10"          | CONC         | 0                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 1,323.00   |
| NC18                             |                |              |              |                    |                    |                  |             |                    |               |
| NC30                             | 234.2          | 10"          | CONC         | 0                  | POOR               | BURST/RELAY/CIPP | \$ 70.00    | \$ 500.00          | \$ 16,394.00  |
| NC17                             |                |              |              |                    |                    |                  |             |                    |               |



**TABLE 2 - MEDIUM PRIORITY REPAIRS**

| Upst MH #<br>to Dnst MH#              | Line<br>Length | Pipe<br>Size | PIPE<br>TYPE | No. of<br>Services | Line<br>Conditions | Recommendations     | Unit Cost*  | Service<br>Connect | Total Cost   |
|---------------------------------------|----------------|--------------|--------------|--------------------|--------------------|---------------------|-------------|--------------------|--------------|
| Walker Park 1 Subtotal: \$ 100,481.00 |                |              |              |                    |                    |                     |             |                    |              |
| Walker Park 2                         |                |              |              |                    |                    |                     |             |                    |              |
| NC81A                                 | 162            | 8"           | CLAY         | 0                  | POOR               | BURST/RELAY/CIPP    | \$ 70.00    | \$ 500.00          | \$ 11,340.00 |
| NC58                                  |                |              |              |                    |                    |                     |             |                    |              |
| NC81                                  | 318.9          | 8"           | CLAY         | 2                  | POOR               | BURST/RELAY/CIPP    | \$ 70.00    | \$ 500.00          | \$ 23,323.00 |
| NC81A                                 |                |              |              |                    |                    |                     |             |                    |              |
| NC85                                  | 152.7          | 8"           | CLAY         | 4                  | POOR               | BURST/RELAY/CIPP    | \$ 70.00    | \$ 500.00          | \$ 12,689.00 |
| NC84                                  |                |              |              |                    |                    |                     |             |                    |              |
| NC91                                  | 319.4          | 10"          | CONC         | 2                  | POOR               | BURST/RELAY/CIPP    | \$ 70.00    | \$ 500.00          | \$ 23,358.00 |
| NC91A                                 |                |              |              |                    |                    |                     |             |                    |              |
| NC107                                 | 512.8          | 8"           | CLAY         | 9                  | POOR               | BURST/RELAY/CIPP    | \$ 70.00    | \$ 500.00          | \$ 40,396.00 |
| NC106                                 |                |              |              |                    |                    |                     |             |                    |              |
| NC73                                  | 316.8          | 8"           | CONC         | 1                  | POOR               | BURST/RELAY/CIPP    | \$ 70.00    | \$ 500.00          | \$ 22,676.00 |
| NC68                                  |                |              |              |                    |                    |                     |             |                    |              |
| NC88                                  | 328.1          | 8"           | TRUSS        | 1                  | POOR               | BURST/RELAY/CIPP    | \$ 70.00    | \$ 500.00          | \$ 23,467.00 |
| NC59                                  |                |              |              |                    |                    |                     |             |                    |              |
| NC57                                  | 434.1          | 12"          | CONC         | 0                  | POOR               | BURST/RELAY/CIPP    | \$ 70.00    | \$ 500.00          | \$ 30,387.00 |
| NC56                                  |                |              |              |                    |                    |                     |             |                    |              |
| Walker Park 2 Subtotal: \$ 187,636.00 |                |              |              |                    |                    |                     |             |                    |              |
| Ward 1                                |                |              |              |                    |                    |                     |             |                    |              |
| WS20                                  | 400.2          | 10"          | CLAY         | 4                  | FAIR               | PC & REPAIR SERVICE | \$ 1,000.00 | \$ 500.00          | \$ 1,000.00  |
| WS19                                  |                |              |              |                    |                    |                     |             |                    |              |
| WF102                                 | 506.9          | 6"           | CONC         | 13                 | POOR               | BURST/RELAY/CIPP    | \$ 70.00    | \$ 500.00          | \$ 41,983.00 |
| WF101                                 |                |              |              |                    |                    |                     |             |                    |              |
| WF106                                 | 168.7          | 10"          | CONC         | 1                  | FAIR               | BURST/RELAY/CIPP    | \$ 70.00    | \$ 500.00          | \$ 12,309.00 |
| WF93                                  |                |              |              |                    |                    |                     |             |                    |              |
| WF107                                 | 200.5          | 10"          | CONC         | 3                  | POOR               | BURST/RELAY/CIPP    | \$ 70.00    | \$ 500.00          | \$ 15,535.00 |
| WF106                                 |                |              |              |                    |                    |                     |             |                    |              |
| WF108A                                |                |              |              |                    |                    |                     |             |                    |              |

**TABLE 2 - MEDIUM PRIORITY REPAIRS**

| Upst MH #<br>to Dnst MH#    | Line<br>Length | Pipe<br>Size | PIPE<br>TYPE | No. of<br>Services | Line<br>Conditions | Recommendations  | Unit Cost* | Service<br>Connect | Total Cost    |
|-----------------------------|----------------|--------------|--------------|--------------------|--------------------|------------------|------------|--------------------|---------------|
| WF108A                      | 123.9          | 6"           | CONC         | 3                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 10,173.00  |
| WF114                       | 48             | 8"           | CONC         | 0                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 3,360.00   |
| WF113                       |                |              |              |                    |                    |                  |            |                    |               |
| WF117                       |                |              |              |                    |                    |                  |            |                    |               |
| WF116                       | 299.9          | 8"           | CONC         | 8                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 24,993.00  |
| WS6                         | 364.1          | 8"           | CLAY         | 6                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 28,487.00  |
| WS5                         |                |              |              |                    |                    |                  |            |                    |               |
| WS29                        |                |              |              |                    |                    |                  |            |                    |               |
| WS28                        | 305            | 6"           | CONC         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 22,350.00  |
| WS21                        | 382.9          | 8"           | CLAY         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 27,803.00  |
| WS20                        |                |              |              |                    |                    |                  |            |                    |               |
| Ward 1 Subtotal:            |                |              |              |                    |                    |                  |            |                    | \$ 187,993.00 |
| Ward 2                      |                |              |              |                    |                    |                  |            |                    |               |
| WF4A                        | 56             | 10"          | CONC         | 0                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 3,920.00   |
| WF57                        |                |              |              |                    |                    |                  |            |                    |               |
| WF56                        |                |              |              |                    |                    |                  |            |                    |               |
| WF55                        | 428.9          | 12"          | CONC         | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 30,523.00  |
| WF60                        | 307            | 8"           | CONC         | 2                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 22,490.00  |
| WF59                        |                |              |              |                    |                    |                  |            |                    |               |
| WF62                        |                |              |              |                    |                    |                  |            |                    |               |
| WF61                        | 313.8          | 8"           | CONC         | 6                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 24,966.00  |
| WF70                        | 311.6          | 8"           | CONC         | 1                  | POOR               | BURST/RELAY/CIPP | \$ 70.00   | \$ 500.00          | \$ 22,312.00  |
| WF59                        |                |              |              |                    |                    |                  |            |                    |               |
| Ward 2 Subtotal:            |                |              |              |                    |                    |                  |            |                    | \$ 104,211.00 |
| Medium Priority Total Cost: |                |              |              |                    |                    |                  |            |                    | \$ 996,676.00 |

\*Unit costs for BURST/RELAY/CIPP=\$70 per LF, RELAY/BURST=\$85 per LF, RELAY=\$90 per LF, REPAIR SERVICE or POINT REPAIR=\$1000 EA, SMH=\$2000 EA

# APPENDIX C

## SMOKE TEST SUMMARY

\*The table below summarizes specific smoke leak locations along sewer mains as documented by Arkansas Cleaning & Televising during tests. Sewer service line leaks are not included in the table.

| TABLE 3 - SMOKE TEST SUMMARY |   |   |
|------------------------------|---|---|
| Site                         | Name  | Smoke Leak Location   |
| 705-1                        | WD5 to WD4  | 40' from WD5 over main  |
| 705-2                        | WD46<br>WD53 to WD51<br>WD33 to WD32  | All around SMH<br>Storm Drain Connection<br>5' to 26' over main from WD33   |
| 705-3                        | WD21 to WD20<br>WD22<br>WD20<br>WD16 to WD7   | Over main 2' from WD21<br>Around SMH and sidewalk<br>Around SMH<br>Storm Drain Connection   |
| 1767-1                       | WP27 to WP24<br>WP29 to WP22<br>WP21 to WP20<br>WP18 to WP17<br>WP82 to WP81<br>WP82 to WP81<br>WP80 to WP79<br>WP78 to WP2<br>WP40 to WP39 | Storm Drain Connection<br>Storm Drain Connection<br>Storm Drain Connection<br>Storm Drain Connection<br>70' from WP82 over main<br>Crack in Street<br>Storm Drain Connection<br>Storm Drain Connection<br>Inlet |
| Walker Park 1                | NC40 to NC3<br>NC24 to NC23<br>NC24 to NC23   | 26' from NC40 over main<br>172' from NC24 over main<br>213' from NC24 over main   |
| Walker Park 2                | NC112 to NC109<br>NC105 to NC104<br>NC104 to NC103  | Storm Drain Connection<br>Sidewalk 3' from NC105<br>Crack in Street   |
| Ruddle-1                     | ND23 to ND22<br>ND22 to ND21A<br>ND19 to ND6A<br>ND16 to ND15<br>ND7 to ND6   | 2' off main<br>3' off main<br>Over main at 9' & 136' from ND19<br>Over main at 245' from ND16<br>Storm Drain Connection   |



**APPENDIX D**  
**SAMPLE PAGES FROM**  
**ARKANSAS CLEANING &**  
**TELEVISION REPORT**

[illegible]



**Arkansas Cleaning and Televising**  
**6625 Brodie Lane**  
**Little Rock, AR 72204**  
**501-687-1610**

|                     |             |                 |                  |
|---------------------|-------------|-----------------|------------------|
| <b>Project #</b>    | <b>Date</b> | <b>Operator</b> | <b>Direction</b> |
| CITY OF BLYETHVILLE | 4/26/2011   | TONY RUSHING    | UPSTREAM         |

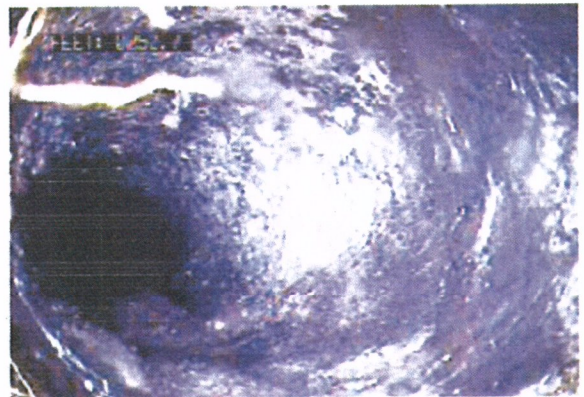
|               |             |                   |              |                |
|---------------|-------------|-------------------|--------------|----------------|
| <b>Tape #</b> | <b>CD #</b> | <b>Location</b>   | <b>Log #</b> | <b>Weather</b> |
|               | 4           | RAIL ROAD EASMENT | 31           | CLOUDY & WARM  |

|                    |                      |                  |                  |               |              |                  |
|--------------------|----------------------|------------------|------------------|---------------|--------------|------------------|
| <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Pipe Type</b> | <b>Pipe Size</b> | <b>Length</b> | <b>Depth</b> | <b>Flow Rate</b> |
| WF1A               | WF2A                 | CONCRETE         | 10"              | 298.2         | 5'4"         | 1/4              |

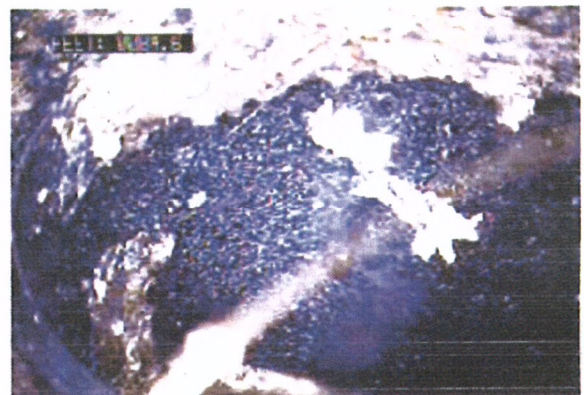
**More Info:**

| Foot<br>age | Cod<br>e | Fro<br>m To | Description | Comments                       |
|-------------|----------|-------------|-------------|--------------------------------|
| 0.0         | MH       |             | Manhole     | STARTING<br>AT MANHOLE<br>WF2A |

|      |          |   |   |
|------|----------|---|---|
| 52.7 | SVR<br>3 | 2 | Service Residential -<br>Protruding <1" |
|------|----------|---|---|



|      |          |  |                                 |
|------|----------|--|---------------------------------|
| 53.8 | RTS<br>1 |  | Roots in Joint - Light<br>Roots |
|------|----------|--|---------------------------------|



|      |     |    |                     |
|------|-----|----|---------------------|
| 84.6 | SVR | 12 | Service Residential |
|------|-----|----|---------------------|

|       |     |   |                     |         |
|-------|-----|---|---------------------|---------|
| 105.4 | SVR | 2 | Service Residential | PLUGGED |
|-------|-----|---|---------------------|---------|

|       |     |   |                     |         |
|-------|-----|---|---------------------|---------|
| 136.9 | SVR | 2 | Service Residential | PLUGGED |
|-------|-----|---|---------------------|---------|

**Arkansas Cleaning and Televising  
6625 Brodie Lane  
Little Rock, AR 72204  
501-687-1610**

|                     |             |                 |                  |
|---------------------|-------------|-----------------|------------------|
| <b>Project #</b>    | <b>Date</b> | <b>Operator</b> | <b>Direction</b> |
| CITY OF BLYETHVILLE | 4/26/2011   | TONY RUSHING    | UPSTREAM         |

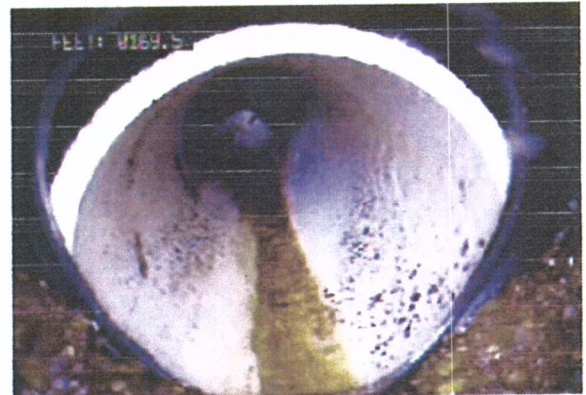
|               |             |                   |              |                |
|---------------|-------------|-------------------|--------------|----------------|
| <b>Tape #</b> | <b>CD #</b> | <b>Location</b>   | <b>Log #</b> | <b>Weather</b> |
|               | 4           | RAIL ROAD EASMENT | 31           | CLOUDY & WARM  |

|                    |                      |                  |                  |               |              |                  |
|--------------------|----------------------|------------------|------------------|---------------|--------------|------------------|
| <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Pipe Type</b> | <b>Pipe Size</b> | <b>Length</b> | <b>Depth</b> | <b>Flow Rate</b> |
| WF1A               | WF2A                 | CONCRETE         | 10"              | 298.2         | 5'4"         | 1/4              |

**More Info:**

| Foot<br>age | Fro<br>Code | To | Description | Comments |
|-------------|-------------|----|-------------|----------|
|-------------|-------------|----|-------------|----------|

|       |       |  |                     |  |
|-------|-------|--|---------------------|--|
| 169.5 | SVR 2 |  | Service Residential |  |
|-------|-------|--|---------------------|--|



|       |       |  |                     |  |
|-------|-------|--|---------------------|--|
| 175.6 | SVR 3 |  | Service Residential |  |
|-------|-------|--|---------------------|--|



|       |       |  |                     |         |
|-------|-------|--|---------------------|---------|
| 229.0 | SVR 2 |  | Service Residential | PLUGGED |
|-------|-------|--|---------------------|---------|



Arkansas Cleaning and Televising  
6625 Brodie Lane  
Little Rock, AR 72204  
501-687-1610

|                     |             |                 |                  |
|---------------------|-------------|-----------------|------------------|
| <b>Project #</b>    | <b>Date</b> | <b>Operator</b> | <b>Direction</b> |
| CITY OF BLYETHVILLE | 4/26/2011   | TONY RUSHING    | UPSTREAM         |

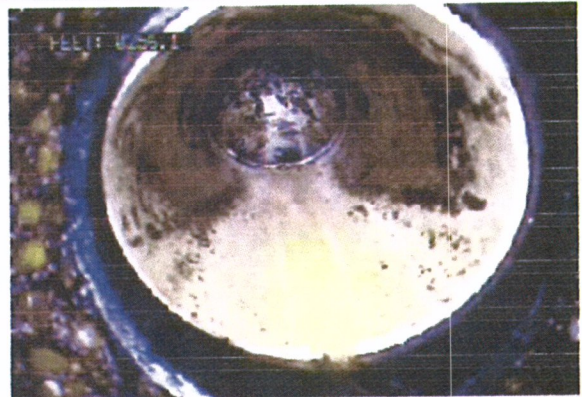
|               |             |                   |              |                |
|---------------|-------------|-------------------|--------------|----------------|
| <b>Tape #</b> | <b>CD #</b> | <b>Location</b>   | <b>Log #</b> | <b>Weather</b> |
|               | 4           | RAIL ROAD EASMENT | 31           | CLOUDY & WARM  |

|                    |                      |                  |                  |               |              |                  |
|--------------------|----------------------|------------------|------------------|---------------|--------------|------------------|
| <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Pipe Type</b> | <b>Pipe Size</b> | <b>Length</b> | <b>Depth</b> | <b>Flow Rate</b> |
| WF1A               | WF2A                 | CONCRETE         | 10"              | 298.2         | 5'4"         | 1/4              |

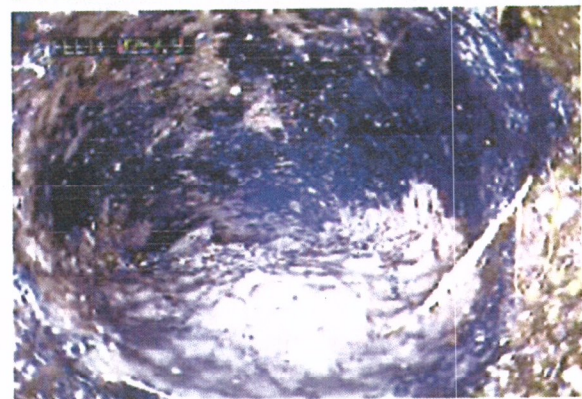
More Info:

| Foot<br>age | Fro<br>Code | To | Description | Comments |
|-------------|-------------|----|-------------|----------|
|-------------|-------------|----|-------------|----------|

|       |       |  |                     |  |
|-------|-------|--|---------------------|--|
| 256.1 | SVR 3 |  | Service Residential |  |
|-------|-------|--|---------------------|--|



|       |       |  |                     |  |
|-------|-------|--|---------------------|--|
| 257.9 | SVR 3 |  | Service Residential |  |
|-------|-------|--|---------------------|--|



|       |    |  |         |  |
|-------|----|--|---------|--|
| 298.2 | MH |  | Manhole |  |
|-------|----|--|---------|--|

ENDING AT  
MANHOLE  
WF1A

Arkansas Cleaning and Televising  
6625 Brodie Lane  
Little Rock, AR 72204  
501-687-1610

|                     |             |                 |                  |
|---------------------|-------------|-----------------|------------------|
| <b>Project #</b>    | <b>Date</b> | <b>Operator</b> | <b>Direction</b> |
| CITY OF BLYETHVILLE | 4/27/2011   | ALEX SCHINGLE   | DOWNSTREAM       |

|               |             |                   |              |                |
|---------------|-------------|-------------------|--------------|----------------|
| <b>Tape #</b> | <b>CD #</b> | <b>Location</b>   | <b>Log #</b> | <b>Weather</b> |
|               | 4           | RAIL ROAD EASMENT | 32           | CLOUDY & WARM  |

|                    |                      |                  |                  |               |              |                  |
|--------------------|----------------------|------------------|------------------|---------------|--------------|------------------|
| <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Pipe Type</b> | <b>Pipe Size</b> | <b>Length</b> | <b>Depth</b> | <b>Flow Rate</b> |
| WF2A               | WF3A                 | CONCRETE         | 10"              | 274.3         | 5'4"         | 1/4              |

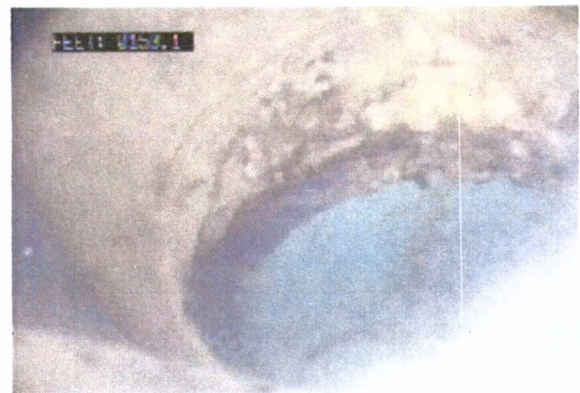
**More Info:**

| Foot<br>age | Cod<br>e | Fro<br>m To | Description         | Comments                       |
|-------------|----------|-------------|---------------------|--------------------------------|
| 0.0         | MH       |             | Manhole             | STARTING<br>AT MANHOLE<br>WF2A |
| 9.1         | SS1      |             | Sag Starts - Minor  |                                |
| 21.0        | SVR      |             | Service Residential | PLUGGED                        |

|      |     |    |                     |
|------|-----|----|---------------------|
| 46.4 | SVR | 10 | Service Residential |
|------|-----|----|---------------------|



|       |     |    |                     |
|-------|-----|----|---------------------|
| 153.1 | SVR | 10 | Service Residential |
|-------|-----|----|---------------------|





**Arkansas Cleaning and Televising**  
**6625 Brodie Lane**  
**Little Rock, AR 72204**  
**501-687-1610**

|                     |             |                 |                  |
|---------------------|-------------|-----------------|------------------|
| <b>Project #</b>    | <b>Date</b> | <b>Operator</b> | <b>Direction</b> |
| CITY OF BLYETHVILLE | 4/27/2011   | ALEX SCHINGLE   | DOWNSTREAM       |

|               |             |                   |              |                |
|---------------|-------------|-------------------|--------------|----------------|
| <b>Tape #</b> | <b>CD #</b> | <b>Location</b>   | <b>Log #</b> | <b>Weather</b> |
|               | 4           | RAIL ROAD EASMENT | 32           | CLOUDY & WARM  |

|                    |                      |                  |                  |               |              |                  |
|--------------------|----------------------|------------------|------------------|---------------|--------------|------------------|
| <b>Upstream MH</b> | <b>Downstream MH</b> | <b>Pipe Type</b> | <b>Pipe Size</b> | <b>Length</b> | <b>Depth</b> | <b>Flow Rate</b> |
| WF2A               | WF3A                 | CONCRETE         | 10"              | 274.3         | 5'4"         | 1/4              |

**More Info:**

| Foot<br>age | Fro<br>m | To | Description | Comments |
|-------------|----------|----|-------------|----------|
|-------------|----------|----|-------------|----------|

|       |     |   |                     |  |
|-------|-----|---|---------------------|--|
| 249.1 | SVR | 9 | Service Residential |  |
|-------|-----|---|---------------------|--|

|       |    |  |         |  |
|-------|----|--|---------|--|
| 274.3 | MH |  | Manhole |  |
|-------|----|--|---------|--|

ENDING AT  
MANHOLE  
WF3A





**SEWER REHAB · PIPE CLEANING · CCTV**  
**6625 BRODIE LANE LITTLE ROCK, AR.**  
**72204**

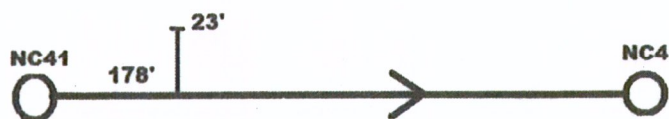
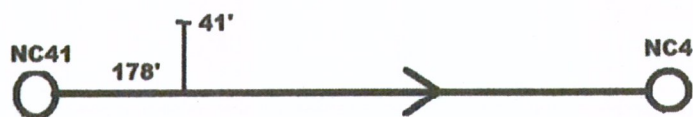
### SMOKE TESTING LOG

| Date: 6/16/2011 |          | Log #: 3 |          | Location: 72         |  |
|-----------------|----------|----------|----------|----------------------|--|
| Manhole#        | Manhole# | Length   | Leak Y/N | Description/Comments |  |
| NC5             | NC4      | 373.6    | N        |                      |  |
| NC41            | NC4      | 404.7    | Y        | PIC. 1, 2            |  |
| NC43            | NC4      | 420      | Y        | PIC. 3               |  |
| NC42            | NC41     | 449.1    | N        |                      |  |
| NC4             | NC3      | 320.9    | N        |                      |  |
| NC40            | NC3      | 437.2    | Y        | PIC. 4, 5, 6         |  |
| NC39            | NC38     | 453.5    | N        |                      |  |
| NC38            | NC3      | 405      | N        |                      |  |
| NC25A           | NC25     | 344      | N        |                      |  |
| NC25            | NC24     | 193.9    | N        |                      |  |
| SERVICE         | NC24     | 148.3    | N        |                      |  |
|                 |          | 3950.2   |          |                      |  |





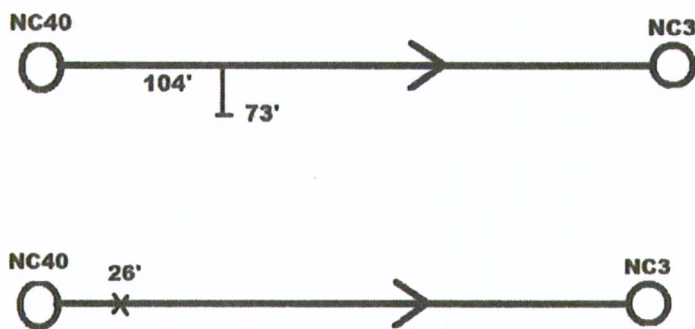
PICTURE #1



PICTURE #2



PICTURE #5








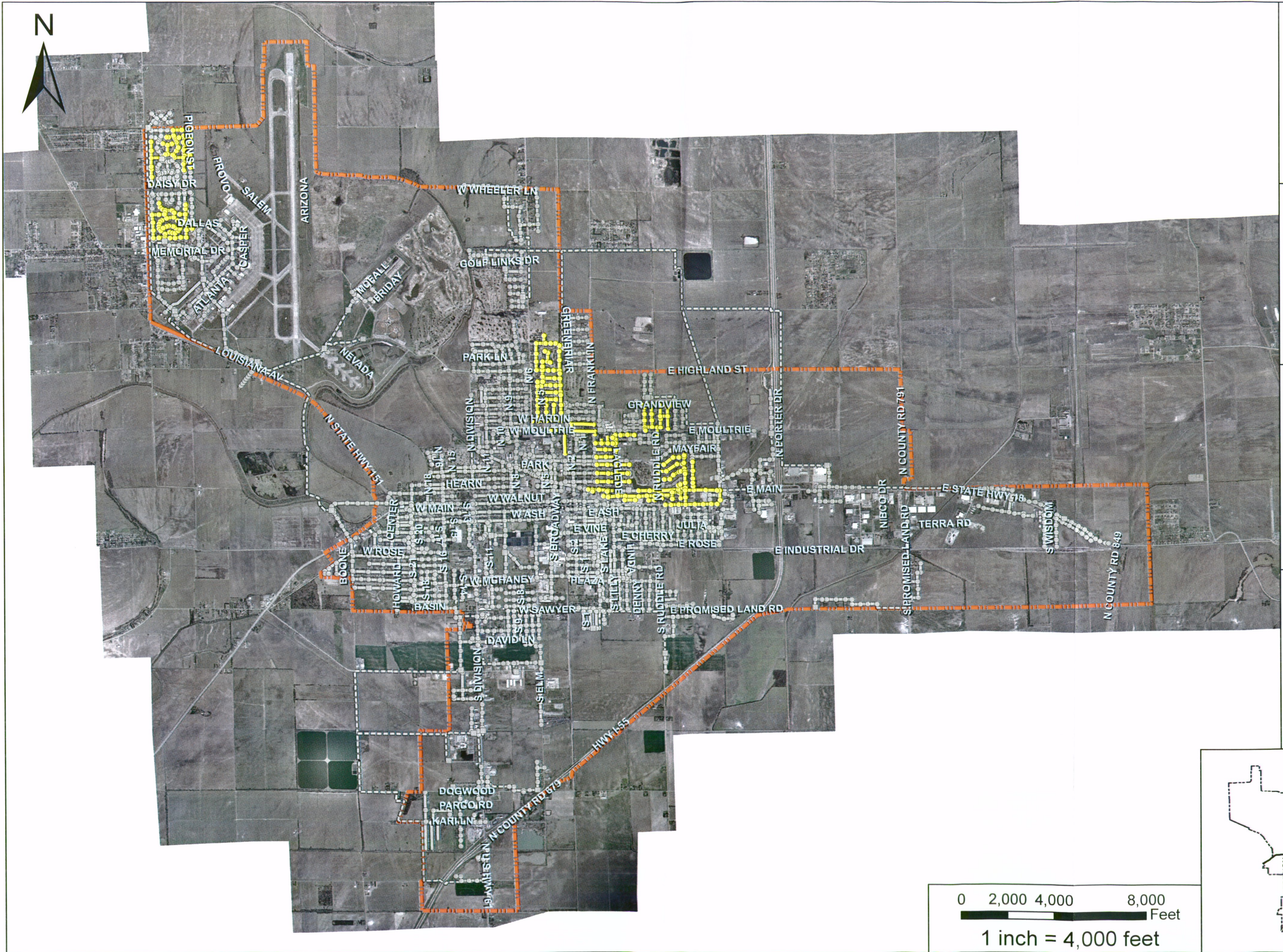
PICTURE #6



# Exhibit 1

## Overall Monitoring Location and

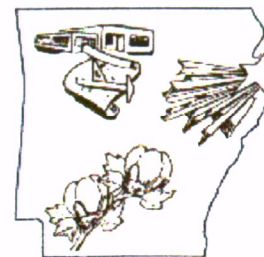
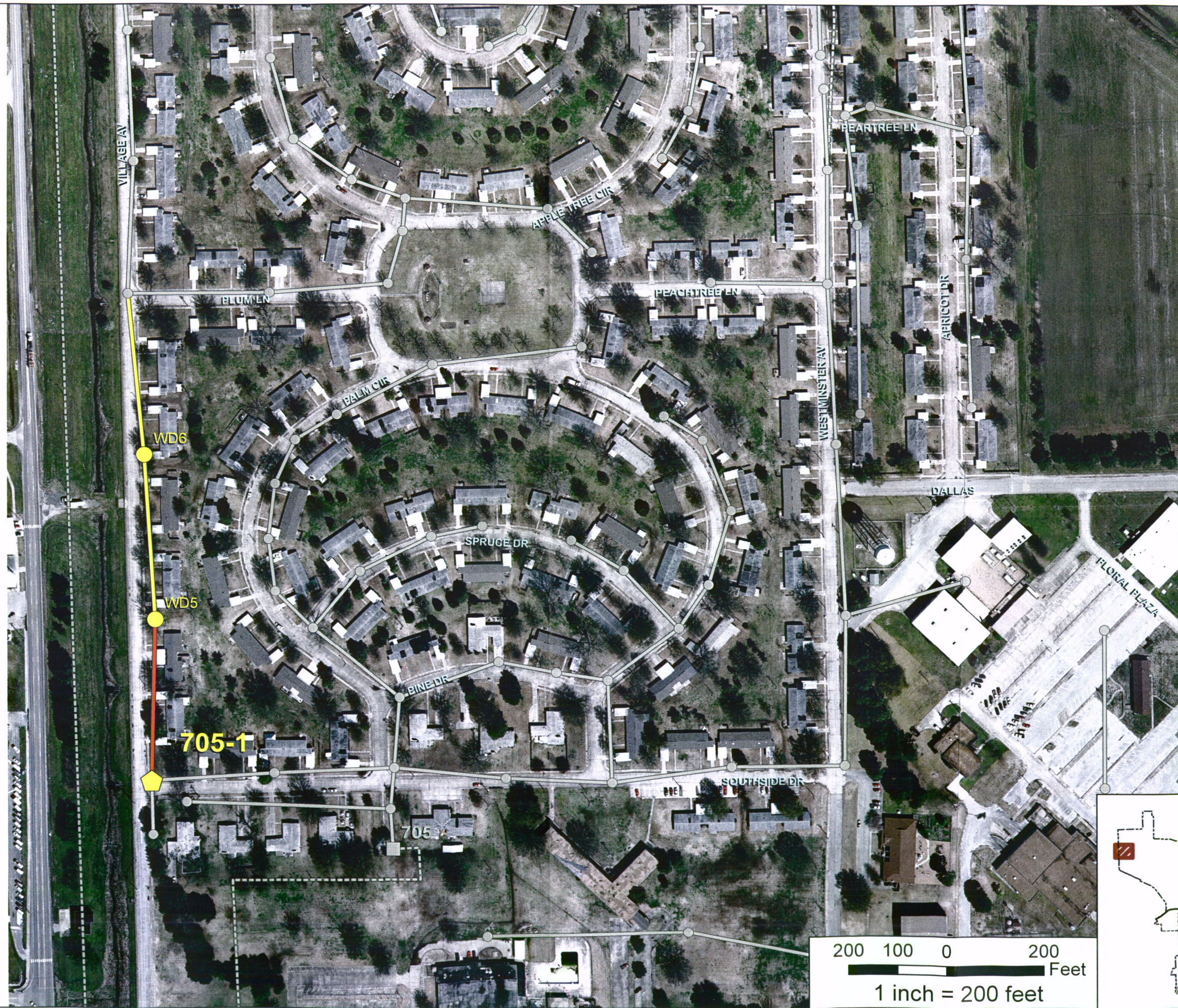
-  Pump Station
-  Not Televised
-  Not Televised
-  Televised
-  Televised



0 2,000 4,000 8,000 Feet

1 inch = 4,000 feet





City of  
Blytheville



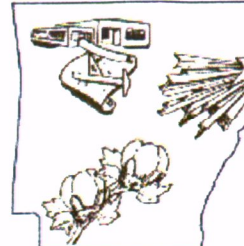
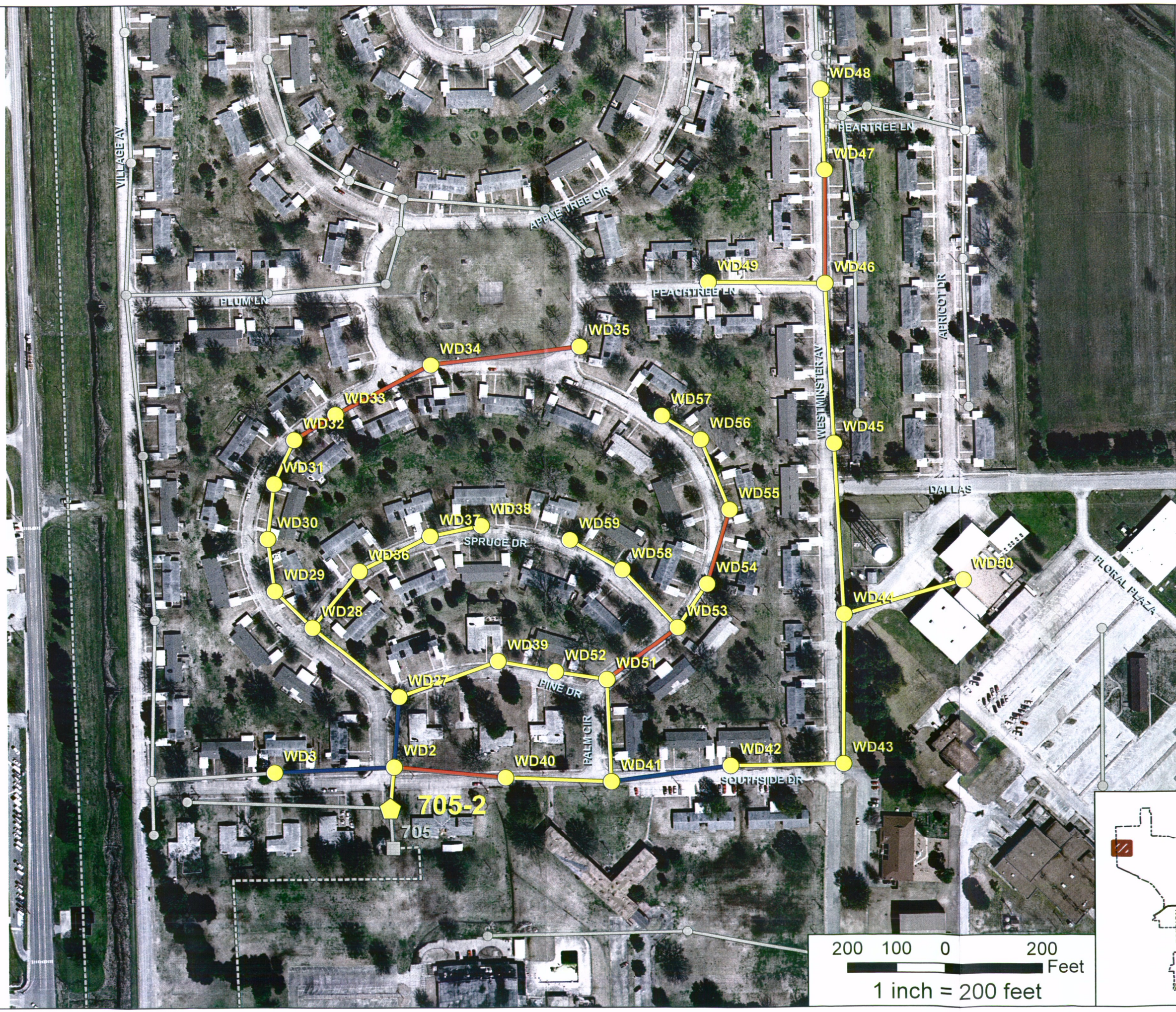
## Exhibit 2

### 705-1 Monitoring Location and Location and

- Pump Station
- Not Contributing
- Contributing
- Not Contributing
- Contributing
- High Priority
- Moderate Priority
- Low Priority







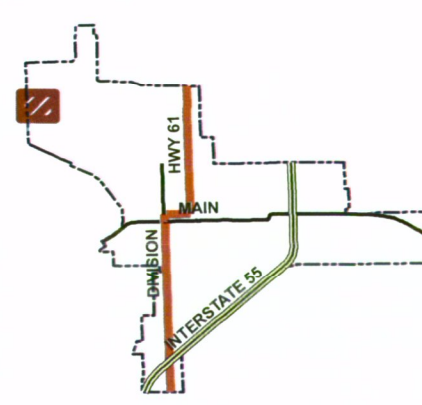
City of  
Blytheville



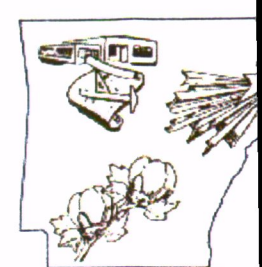
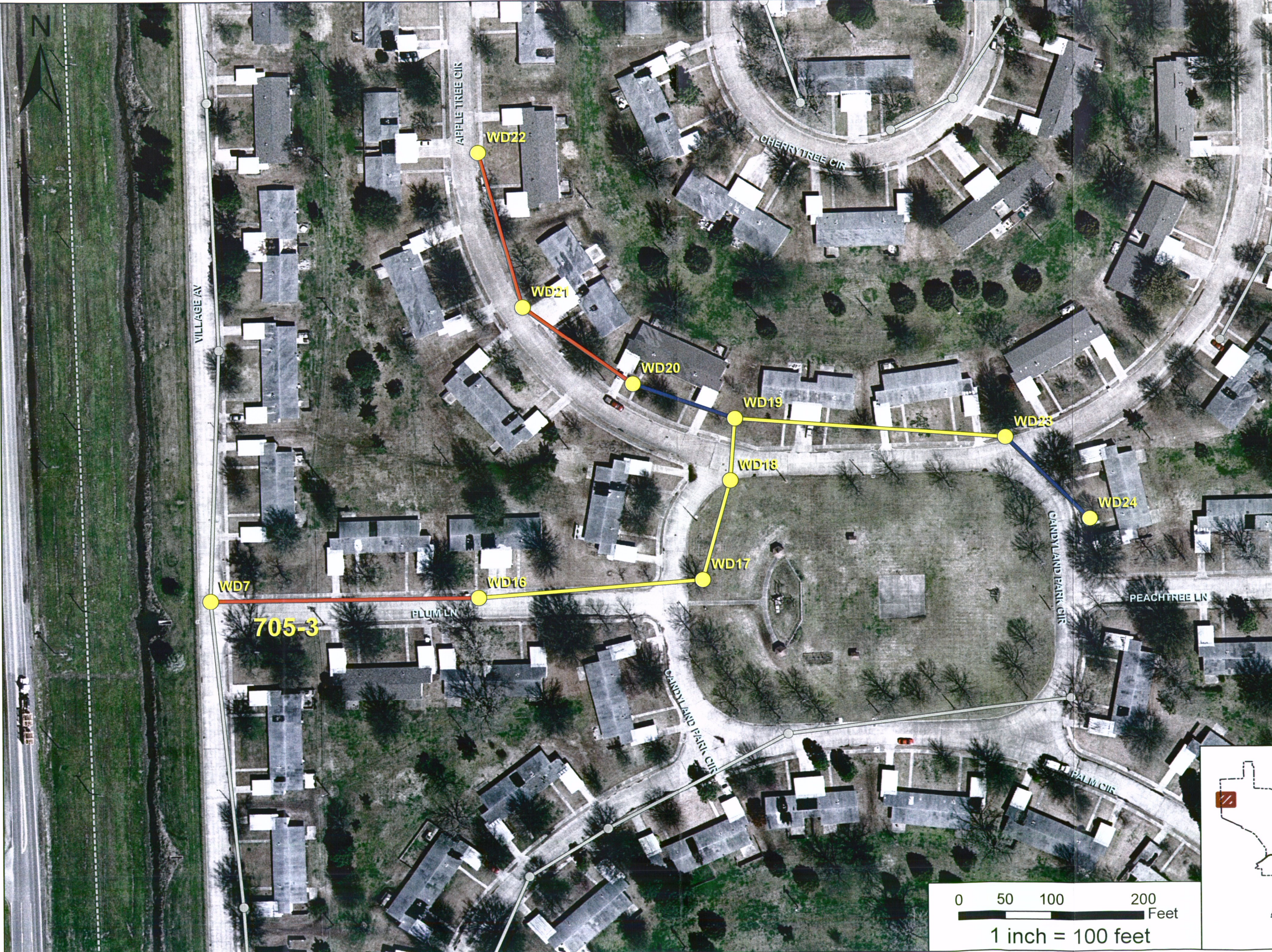
# Exhibit 3

## 705-2 Monitoring Location and

- Pump Station
- Not Contributing
- Contributing
- Not Contributing
- Contributing
- High Priority
- Moderate Priority
- Low Priority







City of  
Blytheville



# Exhibit 4

705-3 Monitoring  
Location and

- Pump Station
- Not Contributing
- Contributing
- Not Contributing
- Contributing
- High Priority
- Moderate Priority
- Low Priority

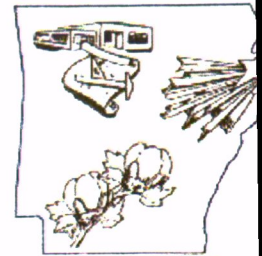
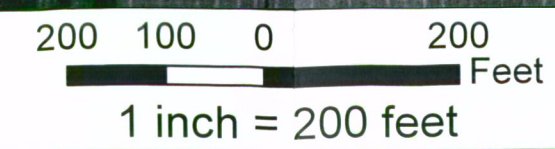






2026

1767-1



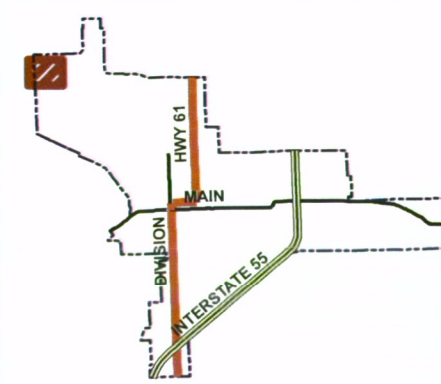
City of  
Blytheville



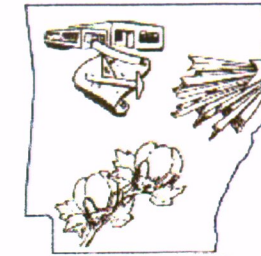
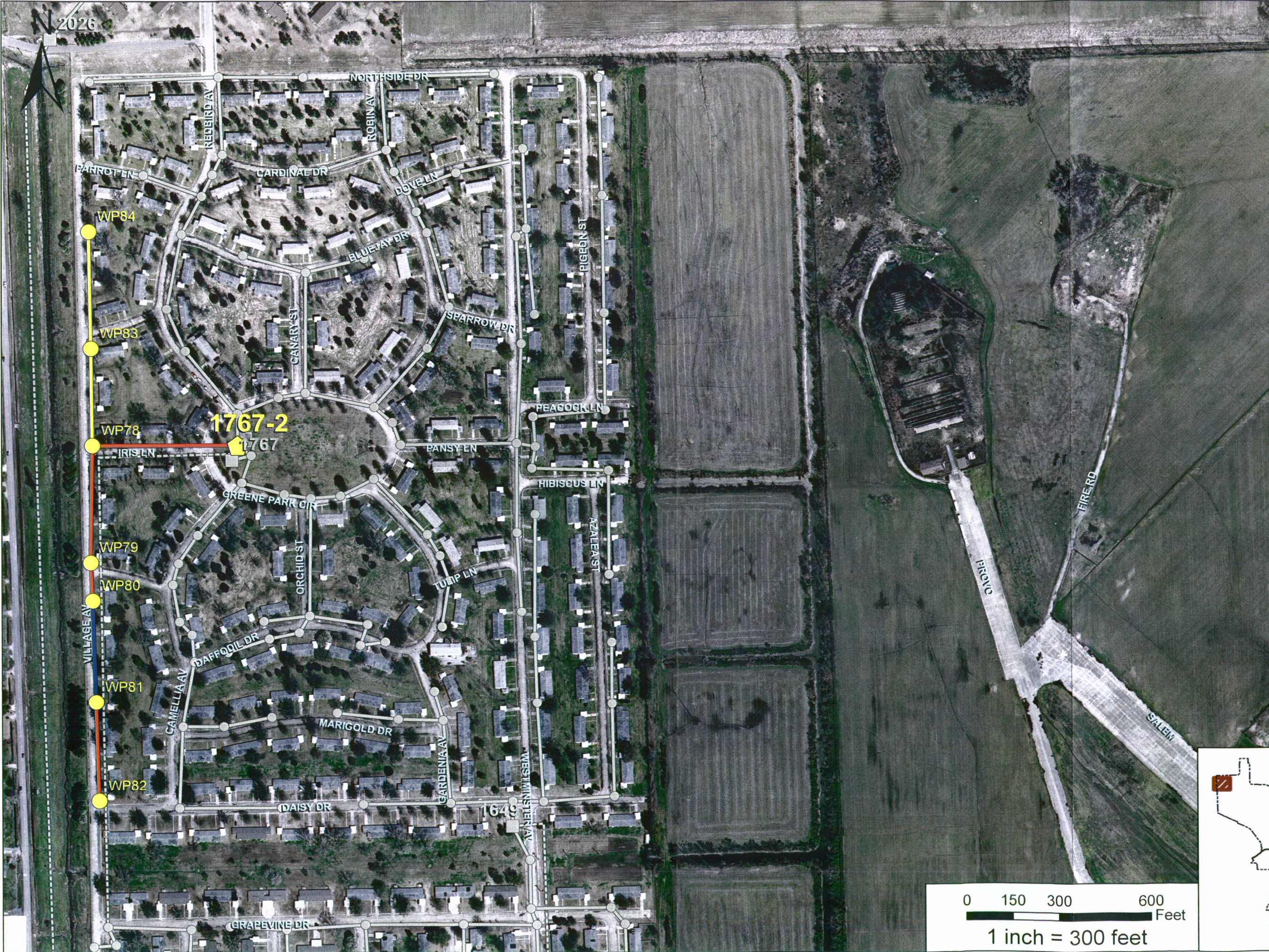
# Exhibit 5

1767-1 Monitoring  
Location and  
Location

- Pump Station
- Not Contributing
- Contributing
- Not Contributing
- Contributing
- High Priority
- Moderate Priority
- Low Priority







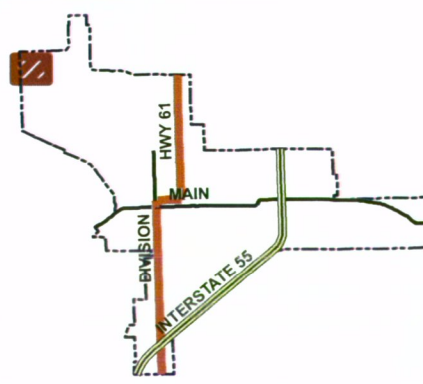
City of  
Blytheville



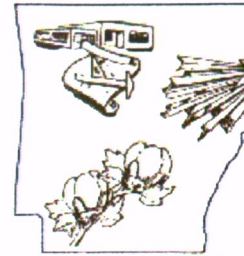
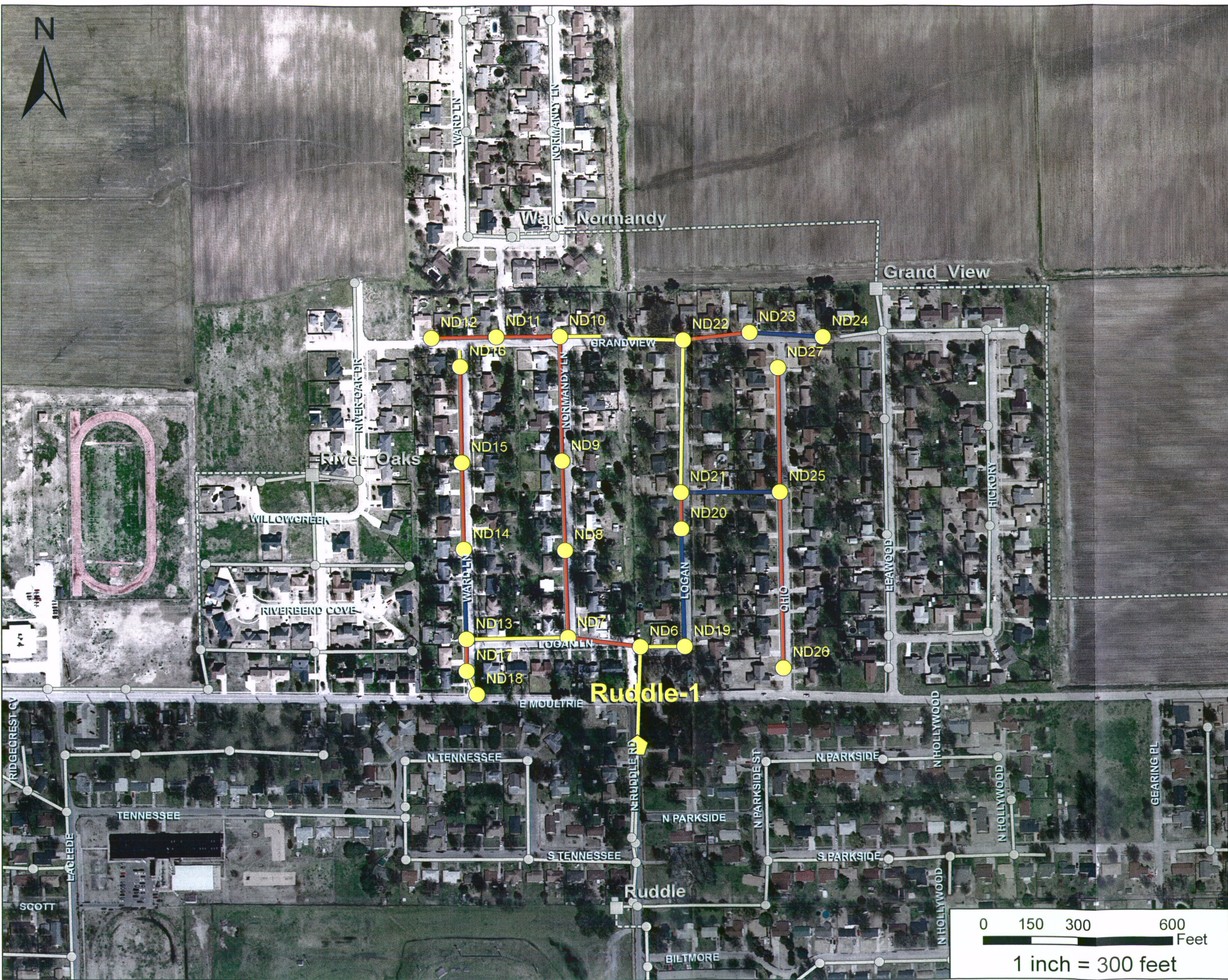
# Exhibit 6

1767-2 Monitoring  
Location and  
Location

- Pump Station
- Not Contributing
- Contributing
- Not Contributing
- Contributing
- High Priority
- Moderate Priority
- Low Priority







City of  
Blytheville



# Exhibit 7

Ruddle-1  
Monitoring Location and

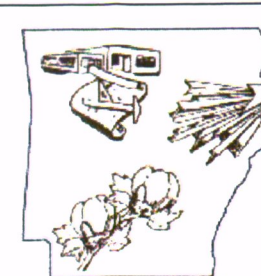
- Pump Station
- Not Contributing
- Contributing
- Not Contributing
- Contributing
- High Priority
- Moderate Priority
- Low Priority











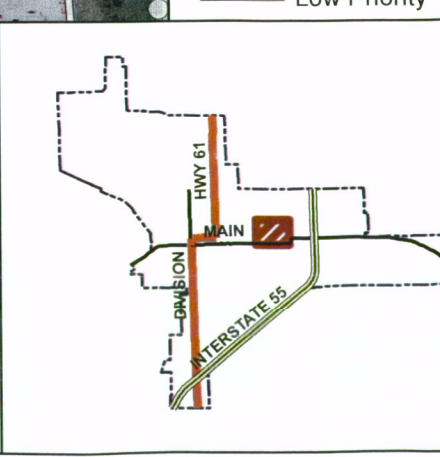
City of  
Blytheville



# Exhibit 9

Walker Park-2  
Monitoring Location and

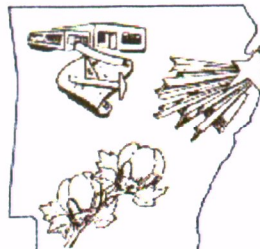
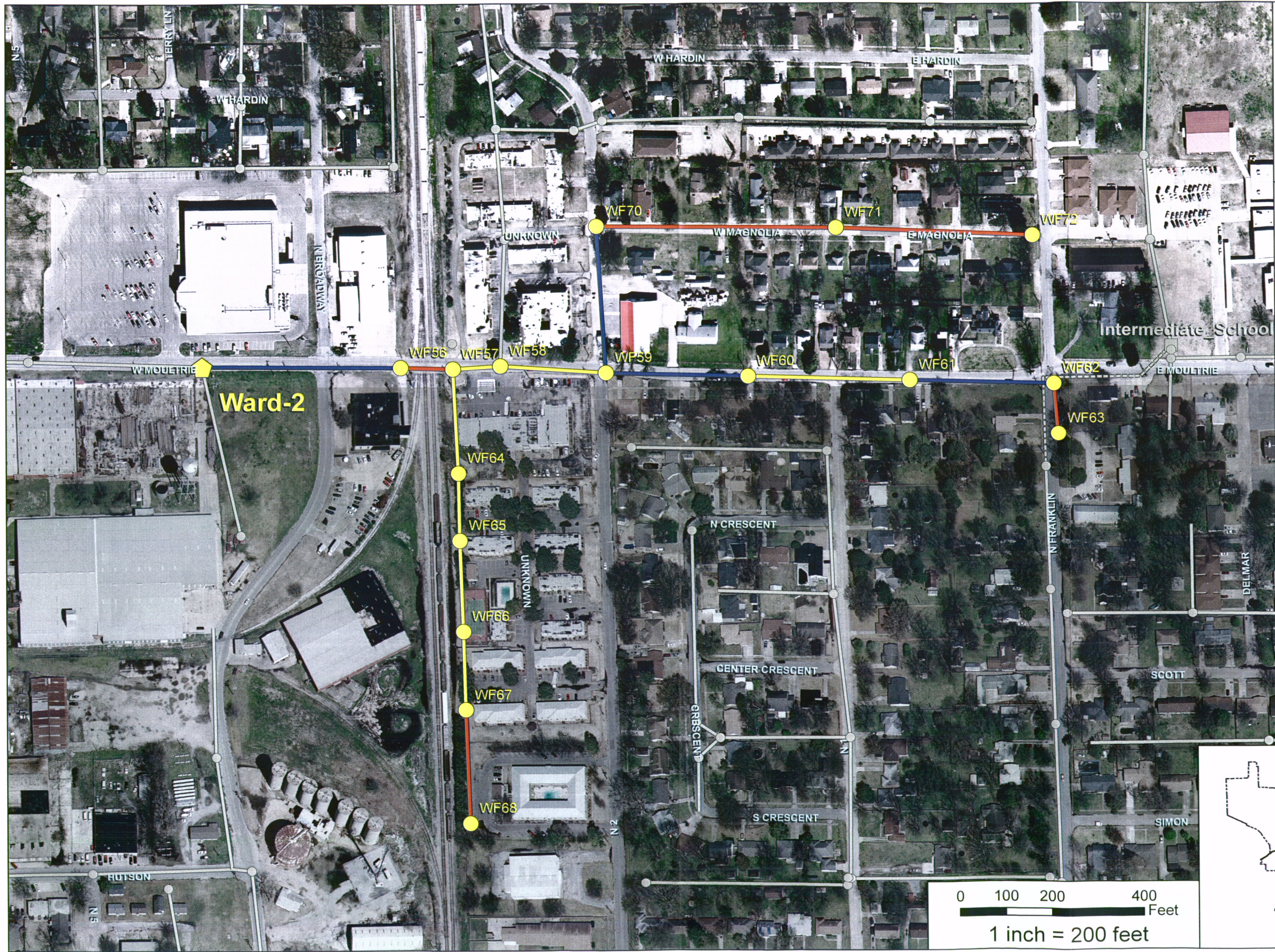
- Pump Station
- Not Contributing
- Contributing
- Not Contributing
- Contributing
- High Priority
- Moderate Priority
- Low Priority











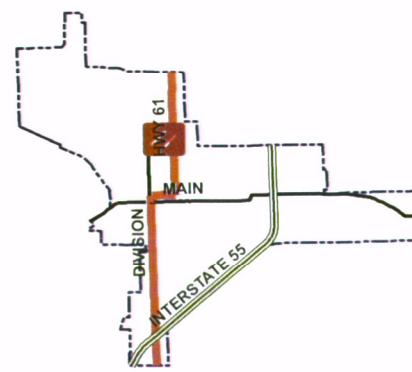
City of  
Blytheville



# Exhibit 11

Ward-2  
Monitoring Location and  
Contributing Area

- Pump Station
- Not Contributing
- Contributing
- Not Contributing
- Contributing
- High Priority
- Moderate Priority
- Low Priority





From: (901) 683-3900  
DANIEL BOWLING  
SSR ELLERS  
2650 THOUSAND OAKS BLVD  
SUITE 3200  
MEMPHIS, TN 381182486

Origin ID: OLVA



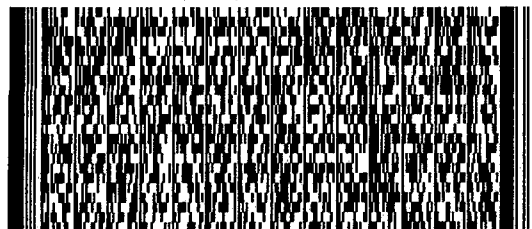
J1113110600225

SHIP TO:

BILL SENDER

MARILYN STOUT  
ADEQ WATER DIV. ENFORCEMENT BRANCH  
5301 NORTHSORE DRIVE

NORTH LITTLE ROCK, AR 721185317



Ship Date: 31JAN12  
ActWgt: 1.0 LB MAN  
CAD: 0922019/CAFE2510

Delivery Address Bar Code



Ref # 5444  
Invoice #  
PO # 10612130  
Dept # 6100

WED - 01 FEB A4  
PRIORITY OVERNIGHT

TRK# 5172 8804 4789  
0201

X2 LITA

72118  
AR-US  
MEM



50DC19F59/10BC