| Profile/Ph               | oto Observatior     | n Report             |                   |                          | RedZone                     |
|--------------------------|---------------------|----------------------|-------------------|--------------------------|-----------------------------|
| Date:<br>Pipe Length (ft | <b>03/19/2018</b>   | Weather:<br>Owner:   | NA                | Coding:<br>Pre Clean:    | PACP 6.0<br>No Pre-Cleaning |
| P.O.#:                   | ,                   | Surveyor:            | John Kuglmaie     | r PSR:                   | P-209-015-016               |
| Customer:                |                     | Clean Date:          | 01/01/1900        | Shape:                   | С                           |
| Street:                  | FOXCROFT STREET     | Г                    | Flow Control:     | Not Controlle            | d                           |
| City:                    | Hobart, IN          |                      | Year Renewed:     |                          |                             |
| Location:                | Light Highway       |                      | Tape/Media #:     |                          |                             |
| Purpose:                 | Routine Assessme    | nt                   | Dia/Height:       | 8"                       |                             |
| Use:                     | Sanitary            |                      | Material:         | VCP                      |                             |
| Drain Area:              | NA                  |                      | Lining:           |                          |                             |
| Category:                | NA                  |                      |                   |                          |                             |
| Comment:                 | P_C at 97 ft root b | all . flow direction | n wrong           |                          |                             |
| Location Detai           | ls:                 |                      | Direction of Surv | vey: Downstream          |                             |
| US MH:                   | M-209-016           | DS MH:               | M-209-015         | Total Length Surveyed (f | t): <b>98.1</b>             |
| D&M Index:               | 2.63                | O&M Quick:           | 514               | 2 O&M Rating:            | 71.00                       |
| Structural Index:        | 2.50                | Structural Qu        | ick: 312          | 1 Structural Rating      | 5.00                        |
| Overall Index:           | 2.62                | Overall Quick        | 514               | 2 Overall Rating:        | 76.00                       |

|                  | Position | Code     | Observation                    | Video (sec) | Grade |
|------------------|----------|----------|--------------------------------|-------------|-------|
| M-209            | 0-016    |          |                                |             |       |
|                  | .0       | AMH      | Manhole                        | 10          | NA    |
| - 11             |          | MWL      | Water Level                    | 21          | NA    |
| - 11             | .0       | DAE      | Deposits Attached Encrustation | 33          | M 2   |
| - 84             | -1 2.4   | FL       | Fracture Longitudinal          | 49          | S 3   |
|                  | 2.8      | ТВ       | Tap Break-in                   | 62          | NA    |
| - 11             | 3.7      | MWL      | Water Level                    | 75          | NA    |
| - 88             |          | RMJ      | Roots Medium Joint             | 99          | M 3   |
| - 11             | 13.9     | DAE      | Deposits Attached Encrustation | 119         | M 2   |
|                  | 14.1     | RFJ      | Roots Fine Joint               | 131         | M 1   |
| <u>5</u>         | 18.1     | RFJ      | Roots Fine Joint               | 150         | M 1   |
| Camera Direction | 22.2     | DAE      | Deposits Attached Encrustation | 170         | M 4   |
| a Di             | 22.6     | ID       | Infil Dripper                  | 182         | M 3   |
| uer l            | 26.5     | DAE      | Deposits Attached Encrustation | 201         | M 4   |
| ۳<br>- ا         | 39.4     | RMJ(S01) | Roots Medium Joint             | 238         | M 3   |
|                  | 40.9     | TFC      | Tap Factory Capped             | 253         | NA    |
|                  | 50.0     | ID       | Infil Dripper                  | 283         | M 3   |
| t III            | 54.6     | RMJ(F01) | Roots Medium Joint             | 303         | M 3   |
| - 11             | 58.6     | RMJ      | Roots Medium Joint             | 323         | M 3   |
|                  | 67.3     | RMJ      | Roots Medium Joint             | 351         | M 3   |
|                  | 67.4     | ID       | Infil Dripper                  | 363         | M 3   |
| - 11             | 67.4     | DAE      | Deposits Attached Encrustation | 374         | M 3   |
| - 11             | 75.5     | RMJ      | Roots Medium Joint             | 402         | M 3   |
| - 11             | 75.6     | ID       | Infil Dripper                  | 413         | M 3   |
| - 11             | 79.9     | RMJ      | Roots Medium Joint             | 433         | M 3   |
| - 11             | 80.9     | CL       | Crack Longitudinal             | 447         | S 2   |
| - 11             | 81.0     | TSD      | Tap Saddle Defective           | 459         | M 2   |
| - 11             | 81.0     | RFC      | Roots Fine Connection          | 471         | M 1   |
| - 14             | 81.8     | TSD      | Tap Saddle Defective           | 484         | M 2   |
|                  | 81.8     | RFC      | Roots Fine Connection          | 495         | M 1   |
| - 11             | 84.5     | RFJ      | Roots Fine Joint               | 513         | M 1   |
| - 11             | 92.6     | RMJ      | Roots Medium Joint             | 541         | M 3   |
|                  | 97.1     | RMJ      | Roots Medium Joint             | 561         | M 3   |
|                  | 97.9     | RBB      | Roots Ball Barrel              | 574         | M 5   |
|                  | 98.1     | MSA      | Abandoned Survey               | 585         | NA    |
|                  | 015      |          |                                |             |       |

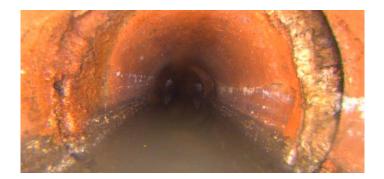


| АМН     |
|---------|
| Manhole |
|         |
|         |

| .0        |
|-----------|
| 0         |
| 0         |
|           |
|           |
|           |
|           |
|           |
|           |
| NO        |
| M-209-016 |
|           |

Code:

Description:



| Distance (ft):      | .0     |
|---------------------|--------|
| Structural Grade:   | 0      |
| O&M Grade:          | 0      |
| Clock Start/From:   |        |
| Clock To:           |        |
| 1st Value:          |        |
| 2nd Value:          |        |
| Value Percent:      | 25.000 |
| Continuous Index:   |        |
| Within 8" of Joint: | NO     |
| Remarks:            |        |

MWL

Water Level



| Distance (ft):      | .0     |
|---------------------|--------|
| Structural Grade:   | 0      |
| O&M Grade:          | 2      |
| Clock Start/From:   | 8      |
| Clock To:           | 4      |
| 1st Value:          |        |
| 2nd Value:          |        |
| Value Percent:      | 10.000 |
| Continuous Index:   |        |
| Within 8" of Joint: | YES    |
| Remarks:            |        |



| Code:             | FL                    |
|-------------------|-----------------------|
| Description:      | Fracture Longitudinal |
|                   |                       |
|                   |                       |
| Distance (ft):    | 2.4                   |
| Structural Grade: | 3                     |

| Structural Grade:   | 3 |
|---------------------|---|
| O&M Grade:          | 0 |
| Clock Start/From:   | 3 |
| Clock To:           |   |
| 1st Value:          |   |
| 2nd Value:          |   |
| Value Percent:      |   |
| Continuous Index:   |   |
| Within 8" of Joint: |   |
| Remarks:            |   |



| Code:        | тв           |
|--------------|--------------|
| Description: | Tap Break-in |

| Distance (ft):      | 2.8   |
|---------------------|-------|
| Structural Grade:   | 0     |
| O&M Grade:          | 0     |
| Clock Start/From:   | 2     |
| Clock To:           |       |
| 1st Value:          | 4.000 |
| 2nd Value:          |       |
| Value Percent:      |       |
| Continuous Index:   |       |
| Within 8" of Joint: |       |
| Remarks:            |       |
|                     |       |



| Code:<br>Description: | MWL<br>Water Level |
|-----------------------|--------------------|
| Distance (ft):        | 3.7                |
| Structural Grade:     | 0                  |
| O&M Grade:            | 0                  |
| Clock Start/From:     |                    |
| Clock To:             |                    |
| 1st Value:            |                    |
| 2nd Value:            |                    |
| Value Percent:        | 35.000             |
| Continuous Index:     |                    |
| Within 8" of Joint:   | NO                 |
| Remarks:              |                    |

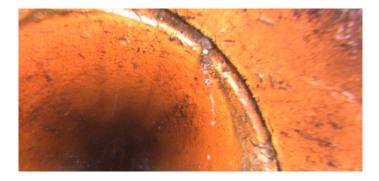


| Distance (ft):      | 9.7    |
|---------------------|--------|
| Structural Grade:   | 0      |
| O&M Grade:          | 3      |
| Clock Start/From:   | 9      |
| Clock To:           | 3      |
| 1st Value:          |        |
| 2nd Value:          |        |
| Value Percent:      | 20.000 |
| Continuous Index:   |        |
| Within 8" of Joint: | YES    |
| Remarks:            |        |



| Code:        | DAE                            |
|--------------|--------------------------------|
| Description: | Deposits Attached Encrustation |
|              |                                |

| Distance (ft):      | 13.9  |
|---------------------|-------|
| Structural Grade:   | 0     |
| O&M Grade:          | 2     |
| Clock Start/From:   | 9     |
| Clock To:           | 11    |
| 1st Value:          |       |
| 2nd Value:          |       |
| Value Percent:      | 5.000 |
| Continuous Index:   |       |
| Within 8" of Joint: | YES   |
| Remarks:            |       |



| Code:        | RFJ              |
|--------------|------------------|
| Description: | Roots Fine Joint |

| Distance (ft):      | 14.1 |
|---------------------|------|
| Structural Grade:   | 0    |
| O&M Grade:          | 1    |
| Clock Start/From:   | 1    |
| Clock To:           |      |
| 1st Value:          |      |
| 2nd Value:          |      |
| Value Percent:      |      |
| Continuous Index:   |      |
| Within 8" of Joint: | YES  |
| Remarks:            |      |



| Code:               | RFJ              |
|---------------------|------------------|
| Description:        | Roots Fine Joint |
|                     |                  |
| Distance (ft):      | 18.1             |
| Structural Grade:   | 0                |
| O&M Grade:          | 1                |
| Clock Start/From:   | 8                |
| Clock To:           | 10               |
| 1st Value:          |                  |
| 2nd Value:          |                  |
| Value Percent:      |                  |
| Continuous Index:   |                  |
| Within 8" of Joint: | YES              |
| Remarks:            |                  |



| Distance (ft):      | 22.2   |
|---------------------|--------|
| Structural Grade:   | 0      |
| O&M Grade:          | 4      |
| Clock Start/From:   | 8      |
| Clock To:           | 4      |
| 1st Value:          |        |
| 2nd Value:          |        |
| Value Percent:      | 25.000 |
| Continuous Index:   |        |
| Within 8" of Joint: | YES    |
| Remarks:            |        |



| Code:<br>Description: | ID<br>Infil Dripper |
|-----------------------|---------------------|
| Distance (ft):        | 22.6                |
| Structural Grade:     | 0                   |
| O&M Grade:            | 3                   |
| Clock Start/From:     | 11                  |
| Clock To:             | 1                   |
| 1st Value:            |                     |
| 2nd Value:            |                     |
| Value Percent:        |                     |
| Continuous Index:     |                     |
| Within 8" of Joint:   | YES                 |
| Remarks:              |                     |
|                       |                     |

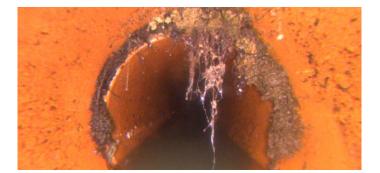


| Distance (ft):      | 26.5   |
|---------------------|--------|
| Structural Grade:   | 0      |
| O&M Grade:          | 4      |
| Clock Start/From:   | 2      |
| Clock To:           | 10     |
| 1st Value:          |        |
| 2nd Value:          |        |
| Value Percent:      | 30.000 |
| Continuous Index:   |        |
| Within 8" of Joint: | YES    |
| Remarks:            |        |

Code:

Description:

Remarks:



| Distance (ft):      | 39.4   |
|---------------------|--------|
| Structural Grade:   | 0      |
| O&M Grade:          | 3      |
| Clock Start/From:   | 8      |
| Clock To:           | 4      |
| 1st Value:          |        |
| 2nd Value:          |        |
| Value Percent:      | 15.000 |
| Continuous Index:   | S01    |
| Within 8" of Joint: | YES    |

RMJ

**Roots Medium Joint** 

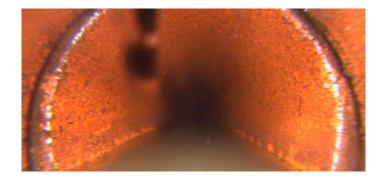


Code:TFCDescription:Tap Factory Capped

| Distance (ft):      | 40.9  |
|---------------------|-------|
| Structural Grade:   | 0     |
| O&M Grade:          | 0     |
| Clock Start/From:   | 2     |
| Clock To:           |       |
| 1st Value:          | 4.000 |
| 2nd Value:          |       |
| Value Percent:      |       |
| Continuous Index:   |       |
| Within 8" of Joint: |       |
| Remarks:            |       |



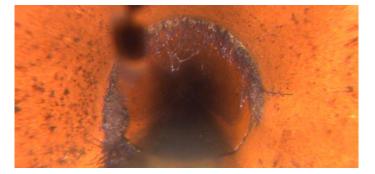
| Code:<br>Description:   | ID<br>Infil Dripper              |
|---|----------------------------------|
| Distance (ft):<br>Structural Grade:<br>O&M Grade:<br>Clock Start/From:<br>Clock To:<br>1st Value:<br>2nd Value:<br>Value Percent:<br>Continuous Index:<br>Within 8" of Joint:<br>Remarks: | 50.0<br>0<br>3<br>11<br>1<br>YES |
|   |                                  |



| 54.6                 |
|----------------------|
| 0                    |
| 3                    |
| 8                    |
| 4                    |
|                      |
|                      |
| 15.000               |
| F01                  |
| YES                  |
| Clock positions vary |
|                      |

RMJ

**Roots Medium Joint** 



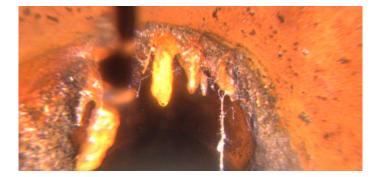
| Distance (ft):      | 58.6   |
|---------------------|--------|
| Structural Grade:   | 0      |
| O&M Grade:          | 3      |
| Clock Start/From:   | 7      |
| Clock To:           | 4      |
| 1st Value:          |        |
| 2nd Value:          |        |
| Value Percent:      | 10.000 |
| Continuous Index:   |        |
| Within 8" of Joint: | YES    |
| Remarks:            |        |

Code:

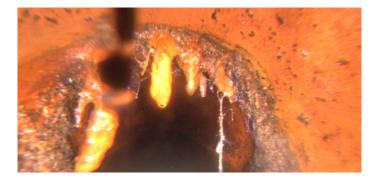
Description:



| Distance (ft):      | 67.3   |
|---------------------|--------|
| Structural Grade:   | 0      |
| O&M Grade:          | 3      |
| Clock Start/From:   | 8      |
| Clock To:           | 4      |
| 1st Value:          |        |
| 2nd Value:          |        |
| Value Percent:      | 25.000 |
| Continuous Index:   |        |
| Within 8" of Joint: | YES    |
| Remarks:            |        |



| ID            |
|---------------|
| Infil Dripper |
|               |
| 67.4          |
| 67.4          |
| 0             |
| 3             |
| 11            |
| 1             |
|               |
|               |
|               |
|               |
| YES           |
|               |
|               |



| Distance (ft):      | 67.4   |
|---------------------|--------|
| Structural Grade:   | 0      |
| O&M Grade:          | 3      |
| Clock Start/From:   | 10     |
| Clock To:           | 1      |
| 1st Value:          |        |
| 2nd Value:          |        |
| Value Percent:      | 20.000 |
| Continuous Index:   |        |
| Within 8" of Joint: | YES    |
| Remarks:            |        |

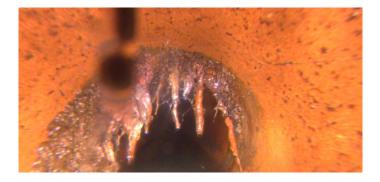
Code:



| Description:      | Roots Medium Joint |
|-------------------|--------------------|
| Distance (ft):    | 75.5               |
| Structural Grade: | 0                  |
|                   | •                  |

RMJ

| Distance (it).      | 75.5   |
|---------------------|--------|
| Structural Grade:   | 0      |
| O&M Grade:          | 3      |
| Clock Start/From:   | 7      |
| Clock To:           | 4      |
| 1st Value:          |        |
| 2nd Value:          |        |
| Value Percent:      | 45.000 |
| Continuous Index:   |        |
| Within 8" of Joint: | YES    |
| Remarks:            |        |
|                     |        |



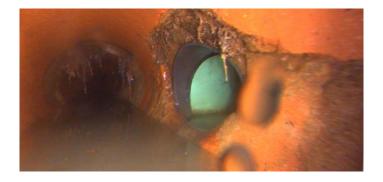
| Code:             | ID            |
|-------------------|---------------|
| Description:      | Infil Dripper |
|                   |               |
|                   |               |
| Distance (ft):    | 75.6          |
| Structural Grade: | 0             |
| O&M Grade:        | 3             |
| Clock Start/From: | 11            |
| Clock To:         | 1             |
|                   |               |

| Clock To:           | 1   |
|---------------------|-----|
| 1st Value:          |     |
| 2nd Value:          |     |
| Value Percent:      |     |
| Continuous Index:   |     |
| Within 8" of Joint: | YES |
| Remarks:            |     |



| RMJ                |
|--------------------|
| Roots Medium Joint |
|                    |
| 79.9               |
|                    |

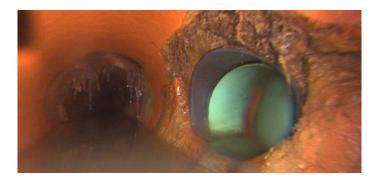
| Distance (ft):      | 79.9   |
|---------------------|--------|
| Structural Grade:   | 0      |
| O&M Grade:          | 3      |
| Clock Start/From:   | 8      |
| Clock To:           | 4      |
| 1st Value:          |        |
| 2nd Value:          |        |
| Value Percent:      | 35.000 |
| Continuous Index:   |        |
| Within 8" of Joint: | YES    |
| Remarks:            |        |



Code:CLDescription:Crack Longitudinal

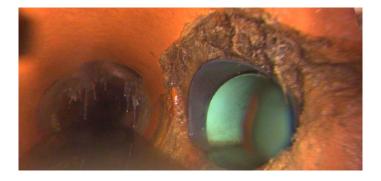
| Distance (ft):      | 80.9 |
|---------------------|------|
| Structural Grade:   | 2    |
| O&M Grade:          | 0    |
| Clock Start/From:   | 2    |
| Clock To:           |      |
| 1st Value:          |      |
| 2nd Value:          |      |
| Value Percent:      |      |
| Continuous Index:   |      |
| Within 8" of Joint: | YES  |
| Remarks:            |      |

Remarks:



| Code:               | TSD                  |
|---------------------|----------------------|
| Description:        | Tap Saddle Defective |
|                     |                      |
| Distance (ft):      | 81.0                 |
| Structural Grade:   | 0                    |
| O&M Grade:          | 2                    |
| Clock Start/From:   | 2                    |
| Clock To:           |                      |
| 1st Value:          | 4.000                |
| 2nd Value:          |                      |
| Value Percent:      |                      |
| Continuous Index:   |                      |
| Within 8" of Joint: |                      |

RFC



Code:RFCDescription:Roots Fine Connection

| Distance (ft):      | 81.0 |
|---------------------|------|
| Structural Grade:   | 0    |
| O&M Grade:          | 1    |
| Clock Start/From:   | 2    |
| Clock To:           |      |
| 1st Value:          |      |
| 2nd Value:          |      |
| Value Percent:      |      |
| Continuous Index:   |      |
| Within 8" of Joint: | NO   |
| Remarks:            |      |

Remarks:



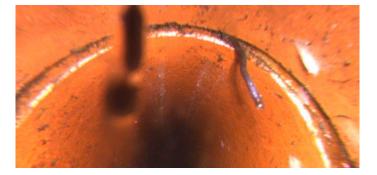
| Code:               | TSD                  |
|---------------------|----------------------|
| Description:        | Tap Saddle Defective |
|                     |                      |
| Distance (ft):      | 81.8                 |
| Structural Grade:   | 0                    |
| O&M Grade:          | 2                    |
| Clock Start/From:   | 12                   |
| Clock To:           |                      |
| 1st Value:          | 4.000                |
| 2nd Value:          |                      |
| Value Percent:      |                      |
| Continuous Index:   |                      |
| Within 8" of Joint: |                      |

RFC



Code:RFCDescription:Roots Fine Connection

| Distance (ft):      | 81.8 |
|---------------------|------|
| Structural Grade:   | 0    |
| O&M Grade:          | 1    |
| Clock Start/From:   | 12   |
| Clock To:           |      |
| 1st Value:          |      |
| 2nd Value:          |      |
| Value Percent:      |      |
| Continuous Index:   |      |
| Within 8" of Joint: | NO   |
| Remarks:            |      |



| Code:        | RFJ                     |
|--------------|-------------------------|
| Description: | <b>Roots Fine Joint</b> |

| Distance (ft):      | 84.5 |
|---------------------|------|
| Structural Grade:   | 0    |
| O&M Grade:          | 1    |
| Clock Start/From:   | 1    |
| Clock To:           |      |
| 1st Value:          |      |
| 2nd Value:          |      |
| Value Percent:      |      |
| Continuous Index:   |      |
| Within 8" of Joint: | YES  |
| Remarks:            |      |



| Distance (ft):      | 92.6   |
|---------------------|--------|
| Structural Grade:   | 0      |
| O&M Grade:          | 3      |
| Clock Start/From:   | 8      |
| Clock To:           | 4      |
| 1st Value:          |        |
| 2nd Value:          |        |
| Value Percent:      | 40.000 |
| Continuous Index:   |        |
| Within 8" of Joint: | YES    |
| Remarks:            |        |

Code:

Remarks:



| Description:        | <b>Roots Medium Joint</b> |
|---------------------|---------------------------|
|                     |                           |
|                     |                           |
| Distance (ft):      | 97.1                      |
| Structural Grade:   | 0                         |
| O&M Grade:          | 3                         |
| Clock Start/From:   | 8                         |
| Clock To:           | 4                         |
| 1st Value:          |                           |
| 2nd Value:          |                           |
| Value Percent:      | 50.000                    |
| Continuous Index:   |                           |
| Within 8" of Joint: | YES                       |

RMJ



| Code:        | RBB               |
|--------------|-------------------|
| Description: | Roots Ball Barrel |

| Distance (ft):      | 97.9   |
|---------------------|--------|
| Structural Grade:   | 0      |
| O&M Grade:          | 5      |
| Clock Start/From:   | 2      |
| Clock To:           | 8      |
| 1st Value:          |        |
| 2nd Value:          |        |
| Value Percent:      | 60.000 |
| Continuous Index:   |        |
| Within 8" of Joint: | NO     |
| Remarks:            |        |



| Code:        |  |
|--------------|--|
| Description: |  |

MSA Abandoned Survey

| Distance (ft):      | 98.1 |
|---------------------|------|
| Structural Grade:   | 0    |
| O&M Grade:          | 0    |
| Clock Start/From:   |      |
| Clock To:           |      |
| 1st Value:          |      |
| 2nd Value:          |      |
| Value Percent:      |      |
| Continuous Index:   |      |
| Within 8" of Joint: | NO   |
| Remarks:            | RBB  |