Use Attainability Analysis

1 Water Body Name	Unnamed Tributary to Unnamed Tributary to Iowa River
2 Segment Description	Mouth to Louisa Co. Law Enforcement Center outfall
3 Segment Length (mi)	0.36
4 Drainage Area (sq. mi.)	0.17
5 Segment Start Latitude, Longitude (DD)	41.22430, -91.16631
6 Segment End Latitude, Longitude (DD)	41.22889, -91.16862
7 Route of Flow (Next Downstream Adopted Designated Use)	Unnamed Tributary (General Use, proposed) to Unnamed Tributary (A2, BWW2, proposed to A1, BWW2, proposed) to Iowa River (A1, BWW1, HH)
8 NPDES Facility and Permit Number (If Applicable)	Louisa Co. Law Enforcement Center (previously Odessa Residential Care Facility) (5800901)
9 Sample Site ID(s)	1131-1
10 Segment County Name(s)	Louisa
11 Field Work Date(s)	10/9/2014

12 Aquatic Life Use Attainability Analysis - Conclusion

Recommended Highest Attainable Use: Aquatic Life Use	General Use
40 CFR 131.10(g)(2) (Flow)	The natural low flow conditions of the stream segment are insufficient to create the habitat necessary to support a community of fish (see Site Observations Table). A BWW1 designation requires multiple species and age ranges of game fish to be viable. A BWW2 designation requires permanent flow. A BWW3 designation requires intermittent flow with perennial pools. This segment has none of those. Therefore, the highest attainable use for this stream segment is general use. As this stream segment was not identified as perennial by the U.S. Geological Survey 1:100,000 DLG Hydrography Data Map (published July 1993) as described in 567 IAC 61.3(1)“b”, it does not require rulemaking.
40 CFR 131.10(g)(5) (Physical Conditions)	Physical conditions related to the natural features of the water body are insufficient to support a community of fish (see Site Observations Table). A BWW1 designation requires multiple species and age ranges of game fish to be viable. A BWW2 designation requires enough habitat beyond non-flowing perennial pools to support an aquatic community. A BWW3 designation requires habitat in perennial pools to support an aquatic community. This segment has none of those. Therefore, the highest attainable use for this stream segment is general use. As this stream segment was not identified as perennial by the U.S. Geological Survey 1:100,000 DLG Hydrography Data Map (published July 1993) as described in 567 IAC 61.3(1)“b”, it does not require rulemaking.

13 Recreational Use Attainability Analysis - Conclusion

Recommended Highest Attainable Use: Recreational Use	General Use
40 CFR 131.10(g)(2) (Flow)	The natural low flow conditions and water levels of the stream segment prevent the attainment of any recreational use (see Site Observations Table). A1, A2, and A3 designations require the ability to recreate in and on the water. This segment has no water. Therefore, the highest attainable use for this segment is general use. As this stream segment was not identified as perennial by the U.S. Geological Survey 1:100,000 DLG

	Hydrography Data Map (published July 1993) as described in 567 IAC 61.3(1)“b”, it does not require rulemaking.

14 Flow

Field Work Date	Description
10/9/2014	USGS stream gage 05465500 data for the area indicated stream flows were normal at the time of assessment.

Use Attainability Analysis - Data

Site Observations

Use	Site parameter	Site ID #1131-1
AL/R	**15 Latitude, Longitude (DD)**	41.22702, -91.16844
AL/R	**16 Average Depth (in)**	<1
AL/R	**17 Maximum Depth (in)**	<1
AL/R	**18 Stream Width (ft)**	1.5
AL/R	**19 Pools Observed?**	Yes
AL only	**20 Non-Game Fish Present and Counts (Species: Number)**	Not sampled
	21 Game Fish Present and Counts (Species (Size Range): Number)	Not sampled
	22 Stream Habitat (See also: #29 Site Photos)	Not sampled
R only	**23 Evidence of Use for Primary Contact Recreation? (Yes*/No)**	No
	24 Evidence of Use by Children? (Yes*/No)	No
	25 Evidence of Use for Secondary Contact Recreation? (Yes*/No)	No
AL/R	**26 Additional Description**	Small shallow pool at outfall. Flows into the culvert through a berm. A small trickle of water.

AL = Aquatic Life
R = Recreation
*If yes, elaborate.

27 Supplemental Data

To ensure the 2014 field data remains scientifically representative of current stream conditions, a comprehensive review was conducted. This review utilized aerial imagery from multiple years—spanning the time of the original field assessment to the present—to evaluate the stream's physical environment. The imagery analysis confirmed that there have been no significant hydrological modifications, shifts in channel morphology, or substantial changes to the adjacent land use over this time period. Because the physical features that control the aquatic community structure remain unchanged, the habitat and biological data collected during the sampling event continue to accurately represent the current, highest attainable aquatic life use for this segment.

According to 567 IAC 61.3(1)“b”, “All perennial rivers and streams as identified by the U.S. Geological Survey 1:100,000 DLG Hydrography Data Map (published July 1993) or intermittent streams with perennial pools in Iowa not specifically listed in the surface water classification of 61.3(5) are designated as Class B(WW-1) waters. All perennial rivers and streams as identified by the U.S. Geological Survey 1:100,000 DLG Hydrography Data Map (published July 1993) or intermittent streams with perennial pools in Iowa are designated as Class A1 waters.”

This specific stream segment is not identified on the perennial coverage of the USGS 1993 map. Therefore, to trigger a designated aquatic life or recreational use, the intermittent segment must contain sufficient perennial pools. While field observations at Site 1131-1 noted a small shallow pool at the outfall, there are no perennial pools meeting the criteria established in the warm water protocol.

Specifically, Section V of the *Warm Water Stream Use Assessment and Attainability Analysis Protocol* dictates that to support even the most limited designated aquatic community (Class BWW3), the thalweg distance of a 0.5-mile segment must be at least 20% pooled, or the pooled frequency must exceed 5 pools. Because this 0.36-mile reach contains only one small pool—and a review of historical aerial imagery confirms no other perennial pools are present—it falls mathematically and physically short of the protocol's minimum criteria.

Consequently, because the stream segment is not on the perennial coverage nor are there perennial pools meeting the required criteria, the segment definitively lacks the habitat and water volume required to maintain any viable aquatic community.

Furthermore, the presence of localized standing water at the outfall does not warrant a designated recreational use when evaluated under the state's established recreational guidelines. The *Recreational Use Assessment and Attainability Analysis Protocol* provides specific criteria for evaluating segments where only 'isolated pools' exist, stating they must be evaluated based on factors including the overall size of the pool, the prevalence of depth, permanence, and whether low-flow conditions not conducive to swimming predominate the reach.

Applying these protocol factors to Site 1131-1 further justifies a General Use classification. This pool lacks substantial size, lacks prevalent depth, and is overwhelmingly predominated by natural dry or low-flow conditions throughout the rest of the 0.36-mile channel. There is also no evidence of existing recreational use at this location.

Because the isolated pool definitively fails the evaluation factors outlined in the *Recreational Use Assessment and Attainability Analysis Protocol*, it does not provide the water volume or permanent physical features necessary to support full-body immersion (Class A1), incidental contact (Class A2), or children's recreation (Class A3). Subsequently, the physical and hydrological data provide a scientifically defensible rationale that Class A and Class BWW designations are physically precluded.

28 Map of Segment, Outfall, and Site(s)

29 Site Photos

Figure 1. 1131-1 Culvert inlet.

Figure 2. 1131-1 Looking upstream at the creek.

Figure 3. 1131-1 Looking downstream at the creek.

Figure 4. 1131-1 Outfall.

Figure 5. 1131-1 Treatment facility.

Figure 6. 1131-1 Treatment facility view 2.

Figure 7. 1131-1 Treatment pond.