MONITORING YEAR 2 ANNUAL REPORT
FINAL

January, 2023

WYANT LANDS MITIGATION SITE
Lincoln County, NC
Catawba River Basin
HUC 03050102
(03050103 Expanded Service Area)

DMS Project No. 100067
DMS Contract No. 7244
DMS RFQ No. 16-007133-CT03 (*Issued: April 24, 2017*)
USACE Action ID No. SAW-2017-02609 (Wyant Lands)
USACE Action ID No. SAW-2021-02449 (Wyant Lands: Phase II)
DWR Project No. 2018-0177 (Wyant Lands)
DWR Project No. 2018-0177v.2 (Wyant Lands: Phase II)
Data Collection Dates: March 2022 - November 2022

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WYANT LANDS MITIGATION SITE

Monitoring Year 2 Annual Report

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Section 1: PROJECT OVERVIEW

The Wyant Lands Mitigation Site (Site) is located in Lincoln County, approximately five miles northwest of Lincolnton and seven miles southwest of Maiden. The Site is located in the Piedmont Physiographic Province. The Site drains directly into Pott Creek, which is part of the Catawba River Basin. Currently, the Site is adjacent to an active cattle and row crop operation. Table 3 presents information related to the project attributes.

1.1 Project Quantities and Credits

The Wyant Lands Mitigation Site (Site) includes assets originally approved by the North Carolina Interagency Review Team (NCIRT) within the mitigation plan on December 20, 2019, herein referred to as "Wyant Phase I". Additionally, the Site also includes additional assets proposed within the Mitigation Plan Addendum approved by the NCIRT on January 5, 2022, here in referred to as "Wyant Phase II". The expansion of Wyant Phase I allowed for the enhancement II stream work previously proposed on UT2 Reach 1 to be revised to priority one stream restoration. The Site is located on a 253-acre property under one landowner and the Wyant Lands Mitigation Site conservation easement was recorded on a combined 47.27 acres. Mitigation work within the Site included restoration, enhancement I, and enhancement II of perennial stream channels as well as wetland re-establishment, rehabilitation and creation.

Table 1 below shows stream credits by reach and wetland credits along with total amount of credits expected at closeout for the Wyant Lands Mitigation Site, including both Phase I and Phase II.

Table 1: Project Quantities and Credits

PROJECT MITIGATION QUANTITIES							
Project Segment	**Mitigation Plan Footage (LF) or Acreage[1,2]**	**As-Built Footage (LF) or Acreage**	**Mitigation Category**	**Restoration Level**	**Mitigation Ratio (X:1)**	**Credits**	**Comments**
Stream							
UT1	604	604	Warm	R	1.0	604.00	Full Channel Restoration, Fencing Out Livestock
UT2 R1	396	396	Warm	R	1.0	396.00	Full Channel Restoration, Fencing Out Livestock
UT2 R2	515	515	Warm	EII	2.5	206.000	Fencing Out Livestock
UT2 R3	1,042	1,042	Warm	R	1.0	1,042.000	Full Channel Restoration, Fencing Out Livestock
UT3 R1	374	376	Warm	EI	1.5	250.667	Bank Stabilization, Fencing Out Livestock
UT3 R2	326	328	Warm	R	1.0	328.000	Full Channel Restoration, Fencing Out Livestock
Wyant Creek R1	1,482	1,475	Warm	R	1.0	1,475.000	Full Channel Restoration, Fencing Out Livestock

Table 1: Project Quantities and Credits

PROJECT MITIGATION QUANTITIES							
Project Segment	**Mitigation Plan Footage (LF) or Acreage[1,2]**	**As-Built Footage (LF) or Acreage**	**Mitigation Category**	**Restoration Level**	**Mitigation Ratio (X:1)**	**Credits**	**Comments**
Wyant Creek R2	523	523	Warm	R	1.0	523.000	Full Channel Restoration, Fencing Out Livestock
Wyant Creek R3	295	295	Warm	R	1.0	295.000	Full Channel Restoration, Fencing Out Livestock
Wyant Creek R4	1,972	1,971	Warm	R	1.0	1,971.000	Full Channel Restoration, Fencing Out Livestock
Wetland							
Wetland Group 1	11.000	10.992	Warm	REE	1.0	10.992	Full Wetland Restoration, Fencing Out Livestock
Wetland Group 2	3.200	3.155	Warm	RH	1.5	2.103	Full Wetland Restoration, Fencing Out Livestock
Wetland Group 3	3.360	3.360	Warm	REE	1.0	3.360	Full Wetland Restoration, Fencing Out Livestock
Wetland Group 4	1.078	1.078	Warm	RH	1.5	0.719	Full Wetland Restoration, Fencing Out Livestock
Wetland Group 5	1.303	1.303	Warm	C	3.0	0.434	Full Wetland Restoration, Fencing Out Livestock
					Total Stream Credits:	**7,090.667**	
					Total Wetland Credits:	**17.608**	

1. Internal culvert crossing, and external break excluded from the credited stream footage.
2. No direct credit for BMPs on site.

Stream Restoration Level	**Stream**			**Wetland Restoration Level**	**Wetland**
	Warm	**Cool**	**Cold**		**Warm**
Restoration	6,634.000			Wetland Re-Establishment	14.352
Enhancement I	250.667			Wetland Rehabilitation	2.822
Enhancement II	206.000			Wetland Creation	0.434
Preservation	N/A				
Totals	**7,090.667**			**Totals**	**17.608**
Total Stream Credit	**7,090.667**			**Total Wetland Credit**	**17.608**

1.2 Project Goals and Objectives

The project is intended to provide numerous ecological benefits. Table 2 below describes expected outcomes to water quality and ecological processes and provides project goals and objectives.

Table 2: Goals, Performance Criteria, and Functional Improvements

Goal	Objective/ Treatment	Likely Functional Uplift	Performance Criteria	Measurement	Cumulative Monitoring Results
Exclude livestock from stream channels.	Install fencing around conservation easements or remove cattle from easements adjacent to cattle pastures.	Reduce and control sediment inputs; Reduce and manage nutrient inputs; Improve agricultural management activities.	Prevent easement encroachments.	Semi-annual visual inspections.	No evidence of livestock within conservation easements.
Improve the stability of stream channels.	Construct stream channels that will maintain a stable pattern and profile. Stabilize stream bed and banks using bank vegetation, bank revetments, and in-stream structures to protect restored/enhanced channels.	Reduce and control sediment inputs; Contribute to protection, or improvement of a Water Supply and Nutrient-Sensitive Waters.	BHR ≤ 1.2 and ER ≥ 2.2. Visual assessments showing progression towards stability.	Twenty (20) Cross-sections were installed. monitoring in MY1, MY2, MY3, MY5, & MY7. Visual inspections will be assessed annually.	Cross-sections show streams are stable and functioning as designed. ERs are over 2.2 and BHRs are below 1.2.
Improve instream habitat.	Install habitat features such as constructed riffles, cover logs, and brush toes into restored/enhanced streams. Add woody materials to channel beds. Construct pools of varying depths.	Increase and diversify available habitats for macroinvertebrates, fish, and amphibians leading to colonization and increase in biodiversity over time.	No performance criteria.	Semi-annual visual inspections.	Most structures are preforming as designed.
Reconnect stream channels with floodplains and riparian wetlands.	Reconstruct stream channels with designed bankfull dimensions and depth relative to existing floodplain.	Reduce shear stress on channel; Hydrate adjacent wetland areas; Filter out pollutants from overbank flows.	Four bankfull events in separate years within the monitoring period.	Four pressure transducers recording flow elevations and durations.	In MY2, 2 bankfull events were recorded on Wyant Creek R2, and 3 events on UT2 R3.

Table 2: Goals, Performance Criteria, and Functional Improvements

Goal	Objective/ Treatment	Likely Functional Uplift	Performance Criteria	Measurement	Cumulative Monitoring Results
Restore wetland hydrology, soils, and plant communities.	Restore and enhance riparian wetlands by raising stream beds, filling existing ditch network, removing berm material over relic hydric soils, and planting native wetland species.	Improve terrestrial habitat; Contribute to protection and/ or improvement of a Water Supply and Nutrient-Sensitive Waters.	Free groundwater within 12 inches of ground surface for a minimum of 12% (27 consecutive days) of the growing season for Lincoln County.	Fifteen (15) groundwater gages placed in restoration areas and monitored annually.	In MY1 (phase I), 8 of 11 groundwater gages met performance criteria. In MY2 (phase 1 and phase II), 14 of 15 met performance criteria.
Restore and enhance native floodplain vegetation.	Plant native tree and understory species in riparian zones where they were insufficient.	Reduce and control sediment inputs; Reduce and manage nutrient inputs; Provide a canopy to shade and reduce thermal loadings; Contribute to protection and/or improvement of a Water Supply and Nutrient-Sensitive Waters.	Survival rate of 320 planted stems per acre at MY3, 260 planted stems per acre at MY5 and a height of 8 ft. and 210 stems per acre at MY7 with a height of 10 ft.	Thirty-six (36) one hundred square meter vegetation plots are placed on 2% of the planted area of the Site and monitored during MY1, MY2, MY3, MY5, and MY7.	In MY1 (phase I), 28 of 31 vegetation plots met MY3 density requirements. In MY2 (phase I and phase II), 33 of 36 vegetation plots met MY3 density requirements. No invasive species presence within monitoring plots.
Permanently protect the project Site from harmful uses.	Establish conservation easements on the Site.	Ensure that development and agricultural uses that would damage the Site or reduce the benefits of the project are prevented.	Prevent easement encroachments.	Semi-annual visual inspections.	No easement encroachments.

1.3 Project Attributes

The Site contains three unnamed tributaries (UTs) to Wyant Creek (UT1, UT2, UT3) and the mainstem of Wyant Creek, which has been broken into four reaches and flows in a south easterly direction through the Site. Multiple existing and relic riparian wetland areas exist on-site and have been re-established or rehabilitated to offset impacts within the Catawba River Basin HUC 03050103. Wyant Creek originates off-site, and its watershed consists predominantly of active row crops. UT1 originates from an on-site farm pond and flows east through an unconfined alluvial valley, adjacent to an active cattle pasture, before its confluence with Wyant Creek. UT2 and UT3 originate from on-site farm ponds and flow through moderately sloped and moderately confined alluvial valleys. All reaches are encompassed by the Pott Creek watershed, which is defined by forested and agricultural land use with sporadic development of rural homes and extends south past June Bug Road. Across Pott Creek and adjacent to the project area, there is an existing conservation easement held by the NC Division of Mitigation Services (DMS), formerly NC Ecosystem Enhancement Program, known as the Pott Creek I Mitigation

Bank. Table 3 below and Table 8 in Appendix C present additional information on pre-restoration conditions.

Table 3: Project Attributes

PROJECT INFORMATION				
Project Name	Wyant Lands Mitigation Site	County	Lincoln County	
Project Area (acres)	47.5	Project Coordinates	35.531083, -81.318040	
PROJECT WATERSHED SUMMARY INFORMATION				
Physiographic Province	Piedmont	River Basin	Catawba River	
USGS HUC 8-digit	03050102	USGS HUC 14-digit	03050102040020	
DWR Sub-basin	03-08-35	Land Use Classification	70% cultivated crop and hay; 16% forest; 7% grassland/herbaceous; 2% shrubland; 5% residential	
Project Drainage Area (acres)	671	Percentage of Impervious Area	0.9%	
RESTORATION TRIBUTARY SUMMARY INFORMATION				
Parameters	**UT1**	**UT2**	**UT3**	**Wyant Creek**
Pre-project length (feet)	458	2,137	647	4,286
Post-project (feet)	604	1,953	704	4,264
Valley confinement (Confined, moderately confined, unconfined)	Unconfined	Moderately Confined/ Confined	Moderately Confined/ Confined	Unconfined
Drainage area (acres)	54	126	84	671
Perennial, Intermittent, Ephemeral	Perennial	Perennial	Perennial	Perennial
Thermal regime	Warm	Warm	Warm	Warm
DWR Water Quality Classification	IV	IV	IV	IV
Dominant Stream Classification (existing)	C5/4	C4	G5	G5
Dominant Stream Classification (proposed)	C4b	Bc	C4b	C4
Dominant Evolutionary class (Simon) if applicable	III Degradation; IV Degradation and Widening	I Stable/ III Degradation	I Stable; II Incision; III Degradation	III Degradation

Table 3: Project Attributes

REGULATORY CONSIDERATIONS			
Parameters	**Applicable?**	**Resolved?**	**Supporting Documentation**
Water of the United States - Section 404	Yes	Yes	Approved 404/401 permit application
Water of the United States - Section 401	Yes	Yes	
Endangered Species Act	Yes	Yes	Categorical Exclusion in Mitigation Plan (Wildlands, 2019); Categorical Exclusion in Mitigation Plan (Wildlands, 2020)
Historic Preservation Act	Yes	Yes	
FEMA Floodplain Compliance	Yes	Yes	Lincoln County Floodplain Development; Permit No-Rise Certification (FLDD19-06199)
NPDES	Yes	Yes	NCG010000 Construction Stormwater General Permit
Coastal Zone Management Act (CZMA or CAMA)	No	N/A	N/A
Essential Fisheries Habitat	No	N/A	N/A

Wetland Summary Information				
Parameters	**Wetland A**	**Wetland B**	**Wetland C**	**Wetland D**
Pre-project area (acres)	2.67	0.22	0.29	0.35
Wetland Type	Bottomland Hardwood Forest	Bottomland Hardwood Forest	Bottomland Hardwood Forest	Bottomland Hardwood Forest
Mapped Soil Series	Chewacla	Chewacla	Chewacla	Chewacla
Drainage Class	Somewhat poorly drained	Somewhat poorly drained	Somewhat poorly drained	Somewhat poorly drained
Soil Hydric Status	No	No	No	No
Source of Hydrology	Groundwater Discharge	Groundwater Discharge	Groundwater Discharge	Groundwater Discharge
Restoration or enhancement method	Restoration	Restoration	Restoration	Restoration
Parameters	**Wetland E**	**Wetland F**	**Wetland G**	**Wetland H**
Pre-project area (acres)	<0.02	0.49	0.11	0.01
Wetland Type	Bottomland Hardwood Forest	Bottomland Hardwood Forest	Bottomland Hardwood Forest	Headwater Forest
Mapped Soil Series	Chewacla/ Pacolet	Chewacla	Chewacla	Worsham
Drainage Class	Somewhat poorly drained /Well drained	Somewhat poorly drained	Somewhat poorly drained	Poorly drained
Soil Hydric Status	No	No	No	Yes
Source of Hydrology	Groundwater Discharge	Groundwater Discharge	Groundwater Discharge	Groundwater Discharge
Restoration or enhancement method	Restoration	Restoration	N/A	N/A

Table 3: Project Attributes

Wetland Summary Information				
Parameters	**Wetland I**	**Wetland J**	**Wetland K**	**Wetland L**
Pre-project area (acres)	0.01	0.01	0.03	<0.01
Wetland Type	Headwater Forest	Headwater Forest	Headwater Forest	Headwater Forest
Mapped Soil Series	Worsham	Chewacla	Pacolet	Pacolet
Drainage Class	Poorly drained	Somewhat poorly drained	Well drained	Well drained
Soil Hydric Status	Yes	No	No	No
Source of Hydrology	Groundwater Discharge	Groundwater Discharge	Groundwater Discharge	Groundwater Discharge
Restoration or enhancement method	N/A	N/A	N/A	N/A
Parameters	**Wetland M**	**Wetland N**	**Wetland O**	**Wetland Q**
Pre-project area (acres)	0.01	0.04	0.04	0.32
Wetland Type	Headwater Forest	Headwater Forest	Headwater Forest	Bottomland Hardwood Forest
Mapped Soil Series	Pacolet	Pacolet	Pacolet	Chewacla/Pacolet
Drainage Class	Well Drained	Well Drained	Well Drained	Somewhat poorly drained/Well Drained
Soil Hydric Status	No	No	No	No
Source of Hydrology	Groundwater Discharge	Groundwater Discharge	Groundwater Discharge	Groundwater Discharge
Restoration or enhancement method	N/A	N/A	N/A	Restoration
Parameters	**Wetland R**	**Wetland S**	**Wetland T**	**Wetland AA**
Pre-project area (acres)	0.36	0.21	0.16	0.09
Wetland Type	Bottomland Hardwood Forest	Bottomland Hardwood Forest	Bottomland Hardwood Forest	Bottomland Hardwood Forest
Mapped Soil Series	Chewacla	Chewacla	Chewacla	Chewacla
Drainage Class	Somewhat poorly drained	Somewhat poorly drained	Somewhat poorly drained	Somewhat poorly drained
Soil Hydric Status	No	No	No	No
Source of Hydrology	Groundwater Discharge	Groundwater Discharge	Groundwater Discharge	Groundwater Discharge
Restoration or enhancement method	Restoration	Restoration	Restoration	Restoration
Parameters	**Open Water 1**	**Open Water 2**		
Pre-project area (acres)	1.76	0.31		
Wetland Type	N/A (Canal)	N/A (Canal)		
Mapped Soil Series	Chewacla	Chewcala		
Drainage Class	Somewhat poorly drained	Somewhat poorly drained		
Soil Hydric Status	No	No		
Source of Hydrology	Groundwater Discharge	Groundwater Discharge		
Restoration or enhancement method	N/A	Restoration		

Section 2: Monitoring Year 2 Data Assessment

Annual monitoring and site visits were conducted during monitoring year (MY) 2 to assess the condition of the project. The vegetation and stream success criteria for the Site follow the approved success criteria presented in the Mitigation Plan (Wildlands, 2019 and Wildlands, 2022). Performance criteria for vegetation, stream, and hydrologic assessments are located in Section 1.2 Table 3. Methodology for annual monitoring is presented in the As-Built Baseline Monitoring Reports (Wildlands, 2021 and Wildlands, 2022).

To facilitate project organization, monitoring reports for Wyant Lands Phase I and Wyant Lands Phase II have been combined into one submittal for the Site. It is proposed that if the Wyant Lands Phase II area has met monitoring performance standards three of the prior four monitoring years at closeout of the Phase I portion of the project (monitoring year 6 of Phase II), the addendum area will be closed as well. If monitoring performance criteria within the Phase II addendum area has not met monitoring standards three out of the prior four years, an additional seventh year of monitoring will be performed for Phase II and the closeout monitoring period will be seven years beyond completion of construction and/or until performance standards have been met.

2.1 Vegetative Assessment

The MY2 vegetative assessment for Phase I was completed in September 2022. Phase II vegetation plots (VP 13, VP24 – 28) were assessed in October 2022, six months from MY0. Vegetation monitoring resulted in a density range of 40 to 567 planted stems per acre with an overall average density of 396 stems per acre. Of the total 36 vegetation plots, 33 are meeting or exceeding the interim MY3 success criteria of 320 stems per acre. Three fixed vegetation plots (VP3, VP4, VP17) are not meeting the interim requirement. Both VP4 and VP17 have a density of 283 planted stems per acre while VP3 has a density of 40 planted stems per acre. VP3 and VP4 are both located on the north side of UT1 and are in areas subject to inundation. VP17 is located in a wetland re-establishment area. Within VP17, trees are an average height of three feet and recruitment of wetland tree species is evident, suggesting proper hydrology and soil conditions are present. Throughout the entirety of the Site, herbaceous cover is becoming well established and is stabilizing stream banks. Refer to Appendix A for Vegetation Plot Photographs and the Vegetation Condition Assessment Table, and Appendix B for Vegetation Plot Data.

2.2 Vegetation Areas of Concern and Management Activity

The MY1 assessment determined two areas of vegetation concern within the conservation easement. One of these areas was a 0.61-acre patch of Chinese privet (*Lingustrum sinense*) which was located on UT2 Reach 1. The privet was physically removed during the implementation of Wyant Lands: Phase II – Project Expansion (SAW# 2021-02449). The other area was a 0.16-acre bare area along UT2 Reach 3. This area now has dense vegetation and is no longer a concern due to supplemental seeding and fertilizing that were completed during the dormant season of 2022. Areas identified as having low stem density were replanted in April 2022. A total of 375 stems (Table 4) were planted throughout the Site covering a total of 1.92 acres (about 4% of the planted acreage). Only approved mitigation plan or addendum bareroots species were used for supplemental plantings (Table 4). Most of the replanted areas are performing well with only an approximate 0.49 acres identified as areas of low stem densities during the MY2 vegetation assessment. The low stem density areas represented by VP3, VP4, and VP17 will be supplementally planted with approved species during the dormant season. A small 0.03-acre area of limited vegetation cover was identified on the right floodplain of UT2 Reach 3. Despite this area's low cover, there is no evidence of sediment entering the stream. This area will be seeded and planted after installation of a sediment control structure along the conservation easement in MY3. In-stream native vegetation was also chemically treated in July 2022 on all reaches of Wyant Creek , UT2 Reach 3,

and UT3 Reach 1 and 2. In-stream vegetation densities were not determined to negatively impact stream function, and treatment was considered successful thus not identified on CCPV maps. Replanted areas and areas of concern are noted on the Current Condition Plan View (CCPV) Maps and will continue to be assessed in future monitoring years. Refer to Appendix A for the Vegetation Condition Assessment Table and Areas of Concern Photographs.

Table 4. Replanting Species and Quantities

Scientific Name	Common Name	Wetland Indicator Status	Quantity
Platanus occidentalis	Sycamore	FACW	60
Betula nigra	River Birch	FACW	60
Quercus phellos	Willow Oak	FAC	55
Quercus michauxii	Swamp Chestnut Oak	FACW	55
Carpinus caroliniana	American Hornbeam	FAC	25
Alnus serrulata	Tag Alder	OBL	40
Cephalanthus occidentalis	Buttonbush	OBL	40
Sambucus canadensis	Elderberry	---	40
TOTAL			**375**

2.3 Stream Assessment

Morphological surveys for MY2 were conducted in June 2022 for Phase I cross-sections. Phase II cross-sections 19 and 20 were completed in October 2022, six months from the as-built survey. All 20 cross-sections on the Site show little to no change in the bankfull area and width-to-depth ratio compared to as-built. Bank height ratios are less than 1.2 and entrenchment ratios are greater than 2.2. Refer to Appendix A for the Visual Stream Morphological Stability Assessment Table and Stream Photographs and Appendix C for Stream Geomorphology Data.

2.4 Stream Areas of Concern and Management Activity

A few isolated areas of concern were present during MY1. At the top of the project, there was approximately 241 linear feet (LF) of aggradation on Wyant Creek Reach 1 between stations 100+80 and 103+21. The sediment flushed through the system during MY2 and is no longer an area of concern. A small area of scour/erosion was noted on UT1 during MY1. This area has become vegetated and has stabilized in MY2. The disturbed areas along the banks of the Wyant Road culvert and ford that were caused by cattle were seeded during the dormant season and dense vegetation has since established. These areas will continue to be monitored annually.

During MY2 visual assessments, piping around a log sill along UT2 Reach 3 at station 322+00 was found to be still causing the structure to become separated from the streambank; however, the piping is isolated to the structure's tie-in and not affecting the stability of the channel. Wildlands will continue to monitor this structure but is not currently planning repairs. Two small beaver dams were removed on Wyant Reach 4 near station 136+00 and 141+00 in fall of 2021 and in spring of 2022. A gully, approximately 60-feet in length and 6 inches deep, has developed next to the BMP on the north facing slope of UT2 Reach 1. The gully begins at the easement boundary and terminates in the right floodplain before reaching the stream. The gully will be repaired in MY3 by redirecting overland flow towards the

BMP and filing the gully. Any disturbed areas will be revegetated through seeding and/or planting. These areas of concern are noted on the CCPV maps and will continue to be monitored for signs of instability. Refer to Appendix A for the Visual Stream Morphology Stability Assessment Table and Areas of Concern Photographs.

2.5 Hydrology Assessment

Continuous baseflow was recorded on UT1 for the entirety of the monitoring period (311 consecutive days so far in MY2). This exceeds the requirement criteria of 30 consecutive days. The crest gage on Wyant Creek Reach 2 recorded bankfull events on May 26, 2022, and July 31, 2022. The crest gage on UT2 Reach 3 recorded bankfull events on May 26, 2022, September 9, 2022, and November 6, 2022. No bankfull events were recorded on UT2 Reach 1 in 2022. Refer to Appendix D for hydrologic stream data.

2.6 Wetland Assessment

Of the 15 groundwater gages (GWG), 14 met or exceeded the performance criteria of free groundwater surface within 12 inches of ground surface for a minimum of 12% (27 consecutive days) of the growing season. For GWGs that met the performance criteria in MY2, the percentage of consecutive days of the growing season ranged from 14% to 100%. GWG 13, located in the Phase II wetland creation area, did not meet performance criteria with a measured maximum number of days 14 (6%) during the growing season. Wildlands expects the area that is represented by this well will continue to rehydrate throughout the monitoring period. Refer to Appendix D for the Wetland Gage Summary and Wetland Gage Plots.

2.7 Adaptive Management Plan

No adaptive management plan is needed at this time.

2.8 Monitoring Year 2 Summary

Overall, the Site has met the required stream, hydrology, and interim vegetation success criteria. 14 of the 15 groundwater gages installed on the Site met or exceeded the hydrologic success criteria for MY2. Two bankfull events were recorded on Wyant Creek Reach 2 and three were recorded on UT2 Reach 3. UT1 had consistent flow through the entirety of MY2. Of the 36 vegetation plots, 33 are exceeding the MY3 interim requirement of 320 planted stems per acre with an overall average planted stem density of 396 stems per acre. Cross-sections showed the channels are stable and functioning as designed with minor changes in dimensions.

Areas of concern on Site were minimal. An area of aggradation on the upper section of Wyant Creek Reach 1 has moved through the system during MY2. Vegetation areas of concern observed during MY1 are no longer an issue with the removal of Chinese Privet along UT2 Reach 1 and vegetation becoming established along UT2 Reach 3. The entirety of the Site's banks are stable with dense vegetation and no signs of erosion or scour. Minimal localized piping around a log sill is visible but the structure is still stable. New areas of concern in MY2 include a small bare area on UT2 R3, small areas of low stem density, and gullying next to linear BMP 3. The areas of low stem density represented by VP3, VP4, and VP 17 will be supplementally planted in the dormant season with mitigation plan approved species. The bare area along the right floodplain of UT2 R3 and the gullying next to BMP 3 will be addressed using best available methods and techniques to reduce erosion and establish approved native vegetation. Wildlands will continue to monitor these areas and adaptive management maintenance measures will be implemented as necessary to benefit the ecological health of the Site.

Section 3: METHODOLOGY

Geomorphic data was collected following the standards outlined in The Stream Channel Reference Site: An Illustrated Guide to Field Techniques (Harrelson et al., 1994) and in Stream Restoration: A Natural Channel Design Handbook (Doll et al., 2003). All Integrated Current Condition Mapping was recorded using handheld GPS units with sub-meter accuracy and processed using ArcGIS. Pressure transducers recording bankfull events and stream flow were installed in riffle cross-sections and monitored throughout the year. Hydrologic monitoring instrument installation and monitoring methods are in accordance with the United States Army Corps of Engineers standards (USACE, 2003). Monitoring protocols follow the Wilmington District Stream and Wetland Compensatory Mitigation Update (NCIRT, 2016). Vegetation monitoring protocols followed the Carolina Vegetation Survey-EEP Level 2 Protocol (Lee et al., 2008); however, vegetation data processing follows the NCDMS Vegetation Data Entry Tool and Vegetation Plot Data Table (NCDMS, 2020).

Section 4: REFERENCES

Doll, B.A., Grabow, G.L., Hall, K.A., Halley, J., Harman, W.A., Jennings, G.D., and Wise, D.E. 2003. Stream Restoration A Natural Channel Design Handbook.

Harrelson, C.C., Rawlins, C.L., Potyondy, J.P. 1994. *Stream Channel Reference Sites: An Illustrated Guide to Field Technique.* Gen. Tech. Rep. RM-245. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 61 p.

Lee, Michael T., Peet, Robert K., Steven D., Wentworth, Thomas R. 2008. CVS-EEP Protocol for Recording Vegetation Version 4.2. Retrieved from: http://cvs.bio.unc.edu/protocol/cvs-eep-protocol-v4.2-lev1-2.pdf.

North Carolina Division of Mitigation Services (NCDMS). 2020. Vegetation Data Entry Tool and Vegetation Plot Data Table. Raleigh, NC. https://ncdms.shinyapps.io/Veg_Table_Tool/

NCDMS. 2017. DMS Annual Monitoring Report Format, Data Requirements, and Content Guidance. June 2017, Raleigh, NC.

NCDMS (formerly Ecosystem Enhancement Program). 2007 (Amended 2013). Lower Catawba River Basin Restoration Priorities (RBRP) Raleigh, NC. https://files.nc.gov/ncdeq/Mitigation%20Services/Watershed_Planning/Catawba_River_Basin/RBRP_2007%20Lower%20CAT_032013%20Final.pdf

North Carolina Division of Water Quality (NCDWQ). 2011. Surface Water Classifications. Raleigh, NC. http://portal.ncdenr.org/web/wq/ps/csu/classifications

NCDWQ. 2010. Catawba River Basinwide Water Quality Plan (WQP), Raleigh, NC

North Carolina Wildlife Resources Commission (NCWRC). 2015. North Carolina Wildlife Action Plan. Raleigh, NC.

North Carolina Geological Survey (NCGS). 2018. NCGS Publications. https://deq.nc.gov/about/divisions/energy-mineral-land-resources/north-carolina-geological-survey/ncgs-maps/1985-geologic-map-of-nc

Rosgen, D. L. 1994. A classification of natural rivers. *Catena* 22:169-199.

Rosgen, D.L. 1996. Applied River Morphology. Pagosa Springs, CO: Wildland Hydrology Books.

Rosgen, D.L. 1997. A Geomorphological Approach to Restoration of Incised Rivers. Proceedings of the Conference on Management of Landscapes Disturbed by Channel Incision. Center For Computational Hydroscience and Bioengineering, Oxford Campus, University of Mississippi, Pages 12-22.

United States Army Corps of Engineers (USACE). October 2016. Stream Mitigation Guidelines. USACE, NCDENR-DWQ, USEPA, NCWRC.

Wildlands Engineering, Inc. (Wildlands). 2019. Wyant Lands Mitigation Site Mitigation Plan. DMS, Raleigh, NC.

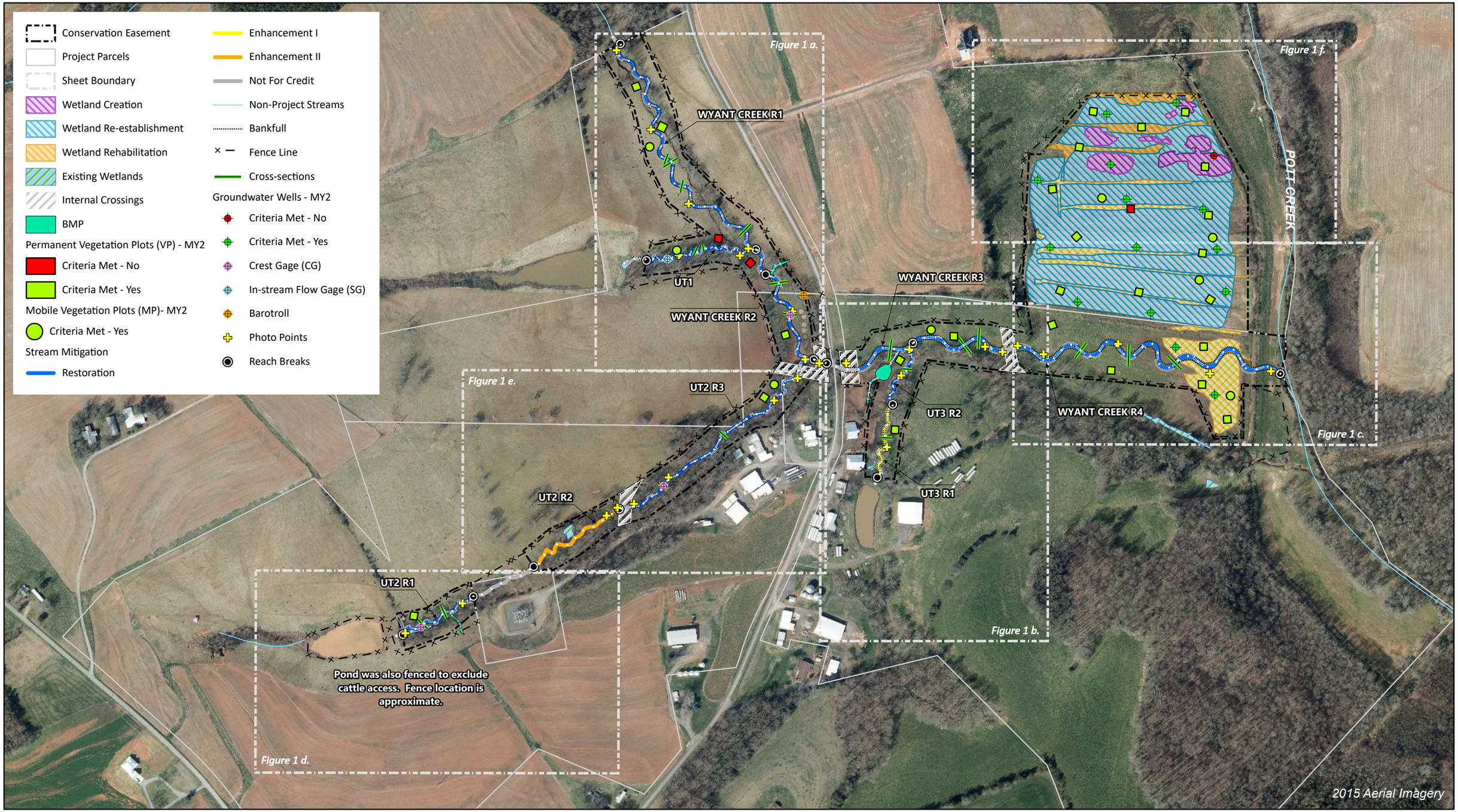
Wildlands. 2021. Wyant Lands Mitigation Site As-Built Baseline Monitoring Report. DMS, Raleigh, NC.

Wildlands. 2021. Wyant Lands Mitigation Site Monitoring Year 1 Annual Report. DMS, Raleigh, NC.

Wildlands. 2022. Wyant Lands Mitigation Site Phase II – Project Expansion Monitoring Year 0 Annual Report. DMS, Raleigh, NC.

Figures 1a-f

Current Condition Plan View Maps



WILDLANDS ENGINEERING

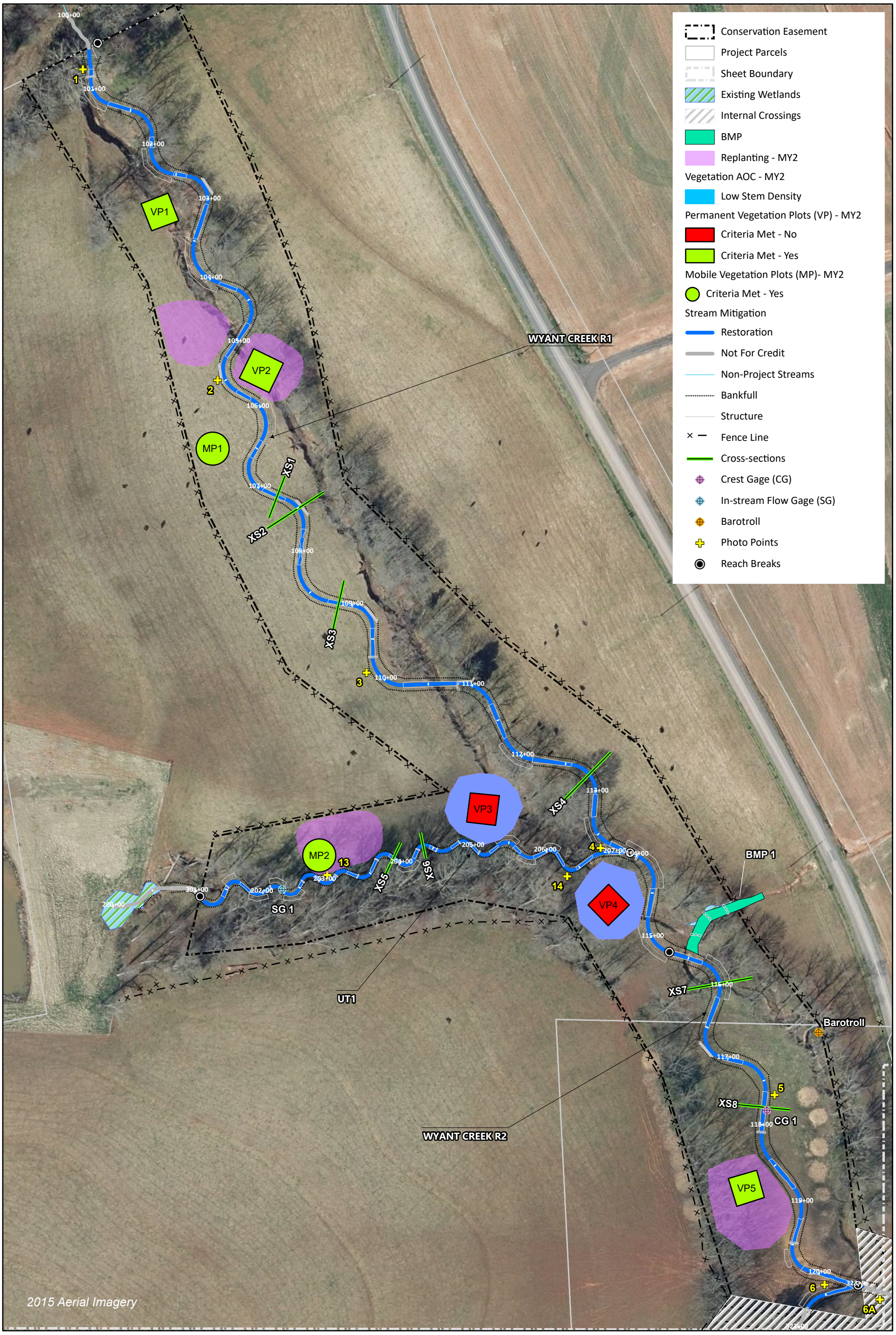
NC Environmental Quality

0 100 200 400 Feet

N

Figure 1. Current Condition Plan View Key
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
Monitoring Year 2 - 2022

Lincoln County, NC



WILDLANDS ENGINEERING

Environmental Quality

0 25 50 100 Feet

Figure 1a. Current Condition Plan View
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
Monitoring Year 2 - 2022
Lincoln County, NC

WILDLANDS ENGINEERING

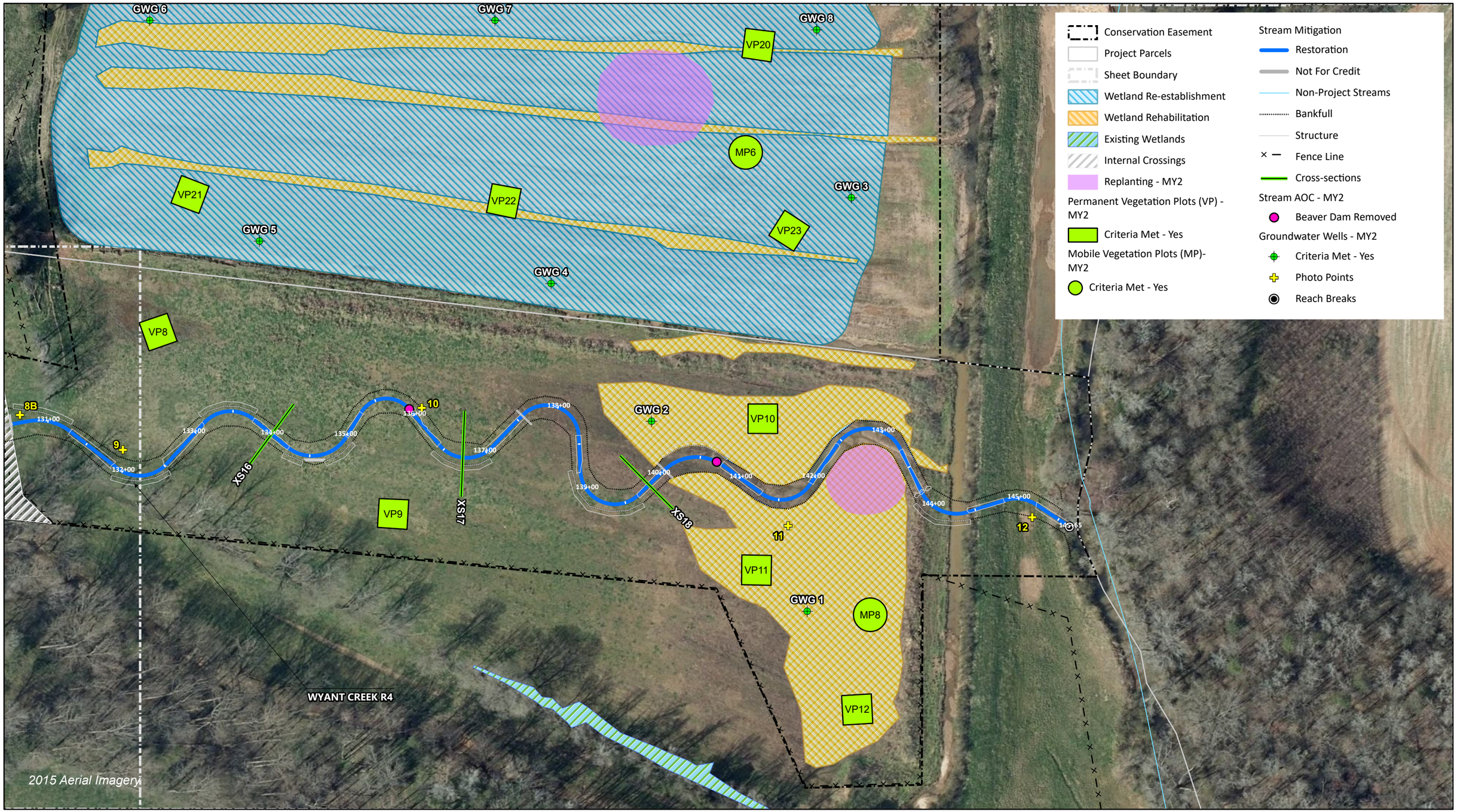
Environmental Quality

0 25 50 100 Feet

N

Figure 1b. Current Condition Plan View
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
Monitoring Year 2 - 2022

Lincoln County, NC



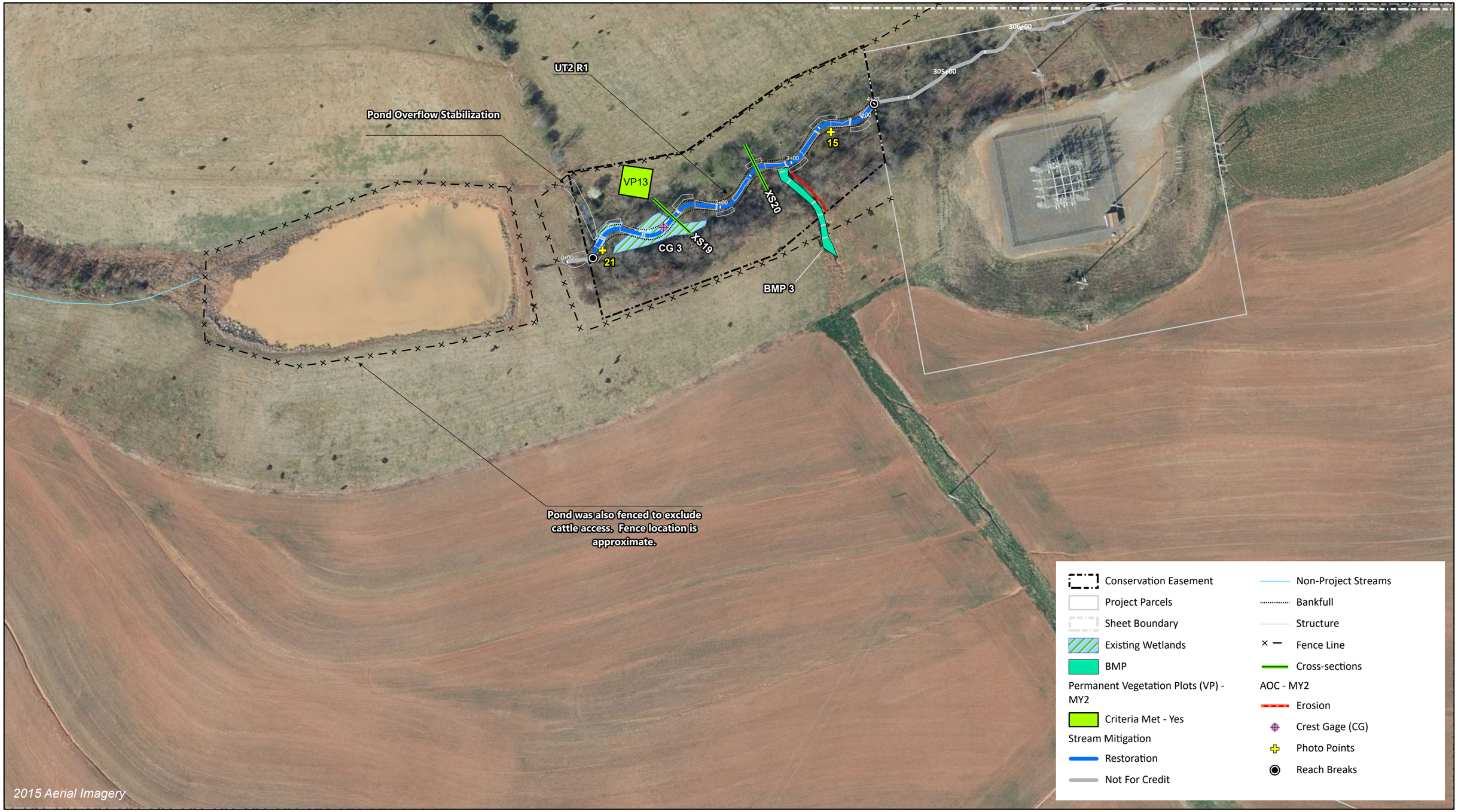
WILDLANDS ENGINEERING

Environmental Quality

0 25 50 100 Feet

N

Figure 1c. Current Condition Plan View
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
Monitoring Year 2 - 2022
Lincoln County, NC



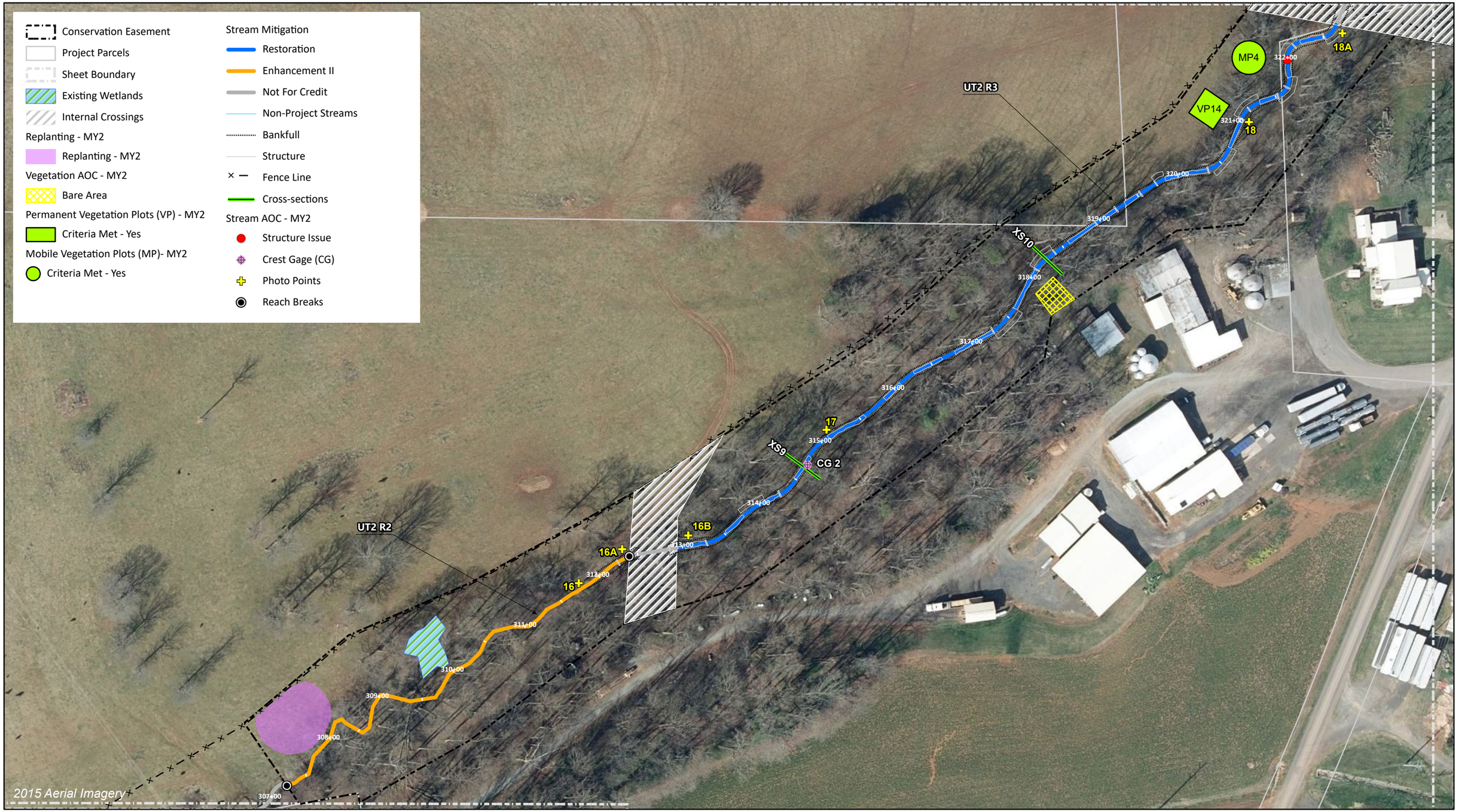
WILDLANDS ENGINEERING

Environmental Quality

0 25 50 100 Feet

N

Figure 1d. Current Condition Plan View
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
Monitoring Year 2 - 2022
Lincoln County, NC

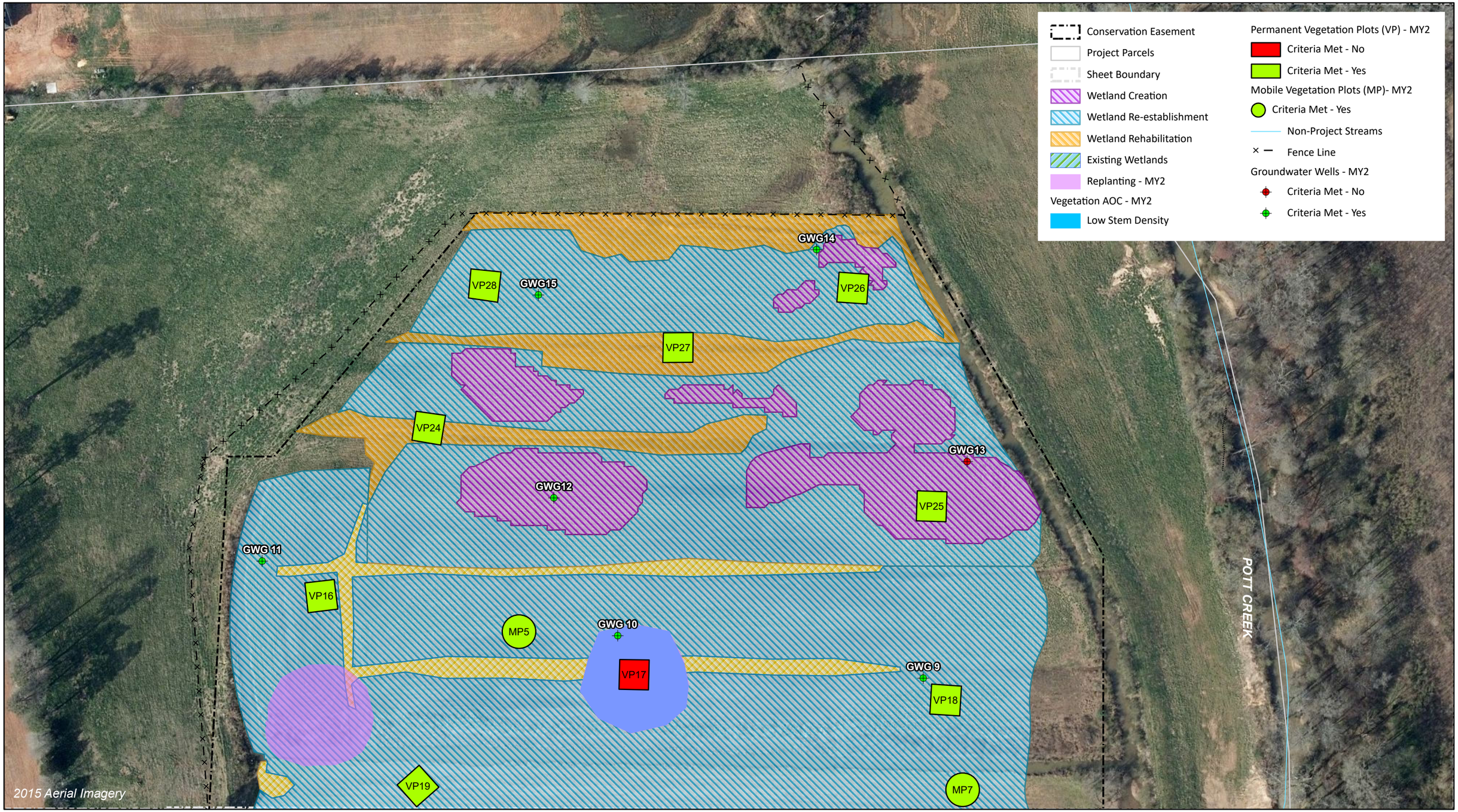


WILDLANDS ENGINEERING

Environmental Quality

0 25 50 100 Feet

Figure 1e. Current Condition Plan View
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
Monitoring Year 2 - 2022
Lincoln County, NC



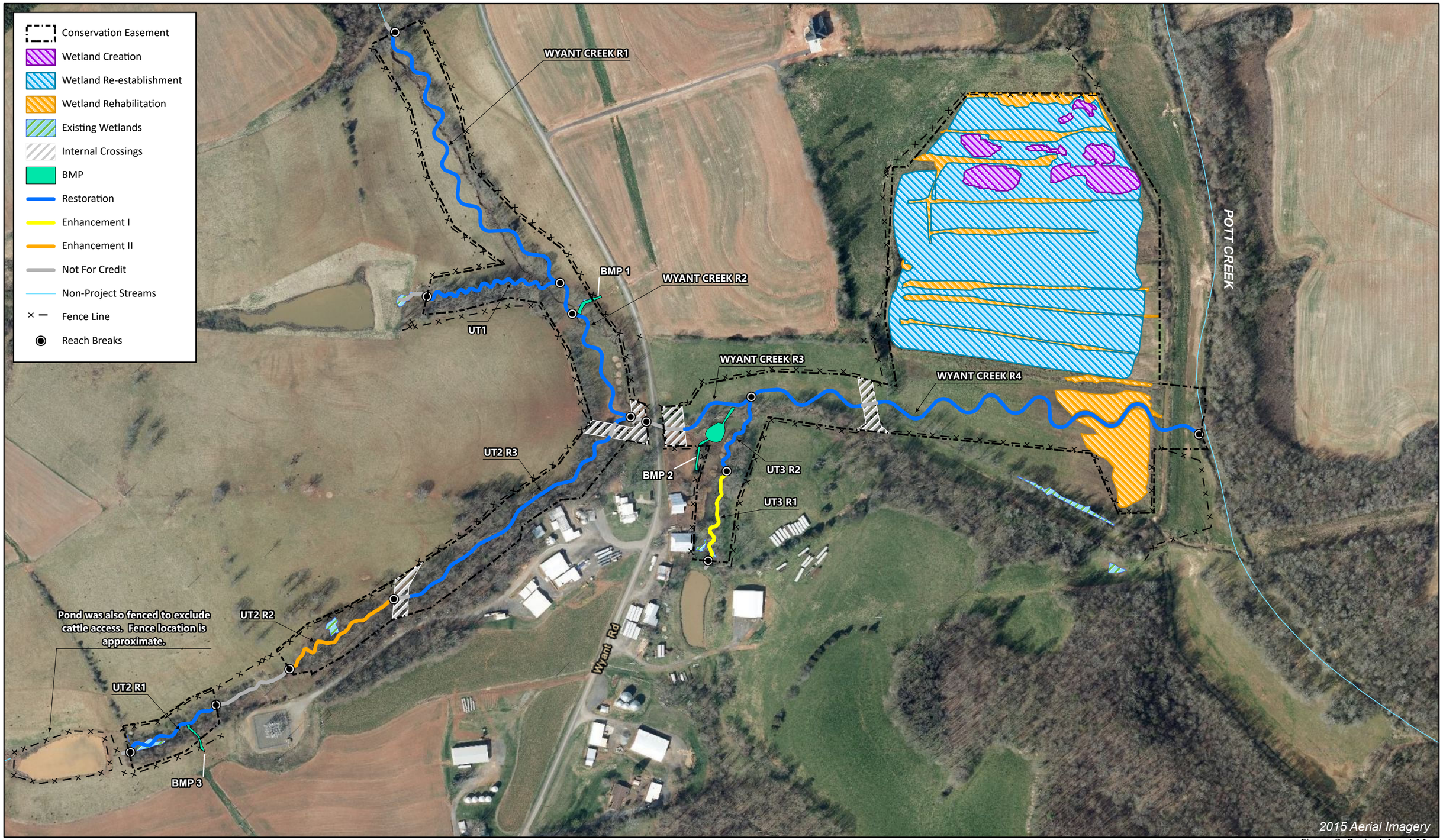
WILDLANDS ENGINEERING

NC Environmental Quality

0 25 50 100 Feet

N

Figure 1f. Current Condition Plan View
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
Monitoring Year 2 - 2022
Lincoln County, NC



WILDLANDS ENGINEERING

Environmental Quality

0 160 320 Feet

N

Figure 2. Project Asset Map
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
Monitoring Year 2 - 2022

Lincoln County, NC

Appendix A

Visual Assessment Data

Table 4a. Visual Stream Morphology Stability Assessment Table

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Stream **Wyant Creek (Reaches 1 - 4)**

Major Channel Category		Metric	Number Stable, Performing as Intended	Total Number in As-Built	Amount of Unstable Footage	% Stable, Performing as Intended
				Assessed Stream Length		4,264
				Assessed Bank Length		8,528
Bank	**Surface Scour/ Bare Bank**	Bank lacking vegetative cover resulting simply from poor growth and/or surface scour.			0	100%
	Toe Erosion	Bank toe eroding to the extent that bank failure appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	100%
	Bank Failure	Fluvial and geotechnical - rotational, slumping, calving, or collapse.			0	100%
				Totals:	**0**	**100%**
Structure	**Grade Control**	Grade control structures exhibiting maintenance of grade across the sill.	17	17		100%
	Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	29	29		100%

Assessment Date: 10/03/2022

Stream **UT1**

Major Channel Category		Metric	Number Stable, Performing as Intended	Total Number in As-Built	Amount of Unstable Footage	% Stable, Performing as Intended
				Assessed Stream Length		604
				Assessed Bank Length		1,208
Bank	**Surface Scour/ Bare Bank**	Bank lacking vegetative cover resulting simply from poor growth and/or surface scour.			0	100%
	Toe Erosion	Bank toe eroding to the extent that bank failure appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	100%
	Bank Failure	Fluvial and geotechnical - rotational, slumping, calving, or collapse.			0	100%
				Totals:	**0**	**100%**
Structure	**Grade Control**	Grade control structures exhibiting maintenance of grade across the sill.	15	15		100%
	Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	8	8		100%

Assessment Date: 10/03/2022

Table 4b. Visual Stream Morphology Stability Assessment Table

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Stream **UT2 Reach 1 and Reach 3**

Major Channel Category		Metric	Number Stable, Performing as Intended	Total Number in As-Built	Amount of Unstable Footage	% Stable, Performing as Intended
					Assessed Stream Length	1,438
					Assessed Bank Length	2,876
Bank	**Surface Scour/ Bare Bank**	Bank lacking vegetative cover resulting simply from poor growth and/or surface scour.			0	100%
	Toe Erosion	Bank toe eroding to the extent that bank failure appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	100%
	Bank Failure	Fluvial and geotechnical - rotational, slumping, calving, or collapse.			0	100%
				Totals:	**0**	**100%**
Structure	**Grade Control**	Grade control structures exhibiting maintenance of grade across the sill.	26	27		96%
	Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	17	17		100%

Assessment Date: 10/03/2022

Stream **UT3 Reach 1 and Reach 2**

Major Channel Category		Metric	Number Stable, Performing as Intended	Total Number in As-Built	Amount of Unstable Footage	% Stable, Performing as Intended
					Assessed Stream Length	704
					Assessed Bank Length	1,408
Bank	**Surface Scour/ Bare Bank**	Bank lacking vegetative cover resulting simply from poor growth and/or surface scour.			0	100%
	Toe Erosion	Bank toe eroding to the extent that bank failure appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	100%
	Bank Failure	Fluvial and geotechnical - rotational, slumping, calving, or collapse.			0	100%
				Totals:	**0**	**100%**
Structure	**Grade Control**	Grade control structures exhibiting maintenance of grade across the sill.	15	15		100%
	Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	9	9		100%

Assessment Date: 10/03/2022

Table 5. Vegetation Condition Assessment Table
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Planted Acreage **45.00**

Vegetation Category	Definitions	Mapping Threshold (ac)	Combined Acreage	% of Planted Acreage
Bare Areas	Very limited cover of both woody and herbaceous material.	0.10	0.03	0.07%
Low Stem Density Areas	Woody stem densities clearly below target levels based on current MY stem count criteria.	0.10	0.49	1.09%
		Total	**0.52**	**1.16%**
Areas of Poor Growth Rates	Planted areas where average height is not meeting current MY Performance Standard.	0.10	0	0%
		Cumulative Total	**0.52**	**1.16%**

Assessment Date: 10/03/2022

Easement Acreage **47.27**

Vegetation Category	Definitions	Mapping Threshold (ac)	Combined Acreage	% of Easement Acreage
Invasive Areas of Concern	Invasives may occur outside of planted areas and within the easement and will therefore be calculated against the total easement acreage. Include species with the potential to directly outcompete native, young, woody stems in the short-term or community structure for existing communities. Invasive species included in summation above should be identified in report summary.	0.10	0	0.00%
Easement Encroachment Areas	Encroachment may be point, line, or polygon. Encroachment to be mapped consists of any violation of restrictions specified in the conservation easement. Common encroachments are mowing, cattle access, vehicular access. Encroachment has no threshold value as will need to be addressed regardless of impact area.	none	0 Encroachments Noted / 0 ac	

Assessment Date: 10/03/2022

Stream Photographs

	
Wyant R1 – Photo Point 1 looking upstream *(3/8/2022)*	**Wyant R1** – Photo Point 1 looking downstream *(3/8/2022)*
	
Wyant R1 – Photo Point 2 looking upstream *(3/8/2022)*	**Wyant R1** – Photo Point 2 looking downstream *(3/8/2022)*
	
Wyant R1 – Photo Point 3 looking upstream *(3/8/2022)*	**Wyant R1** – Photo Point 3 looking downstream *(3/8/2022)*

Wyant R1 – Photo Point 4 looking upstream *(3/8/2022)*

Wyant R1 – Photo Point 4 looking downstream *(3/8/2022)*

Wyant R2 – Photo Point 5 looking upstream *(3/8/2022)*

Wyant R2 – Photo Point 5 looking downstream *(3/8/2022)*

Wyant R2 – Photo Point 6 looking upstream *(3/8/2022)*

Wyant R2 – Photo Point 6 looking downstream *(3/8/2022)*

Wyant R3 – Photo Point 7 looking upstream *(3/8/2022)*

Wyant R3 – Photo Point 7 looking downstream *(3/8/2022)*

Wyant R4 – Photo Point 8 looking upstream *(3/8/2022)*

Wyant R4 – Photo Point 8 looking downstream *(3/8/2022)*

Wyant R4 – Photo Point 9 looking upstream *(3/8/2022)*

Wyant R4 – Photo Point 9 looking downstream *(3/8/2022)*

Wyant R4 – Photo Point 10 looking upstream *(3/8/2022)*

Wyant R4 – Photo Point 10 looking downstream *(3/8/2022)*

Wyant R4 – Photo Point 11 looking upstream *(3/8/2022)*

Wyant R4 – Photo Point 11 looking downstream *(3/8/2022)*

Wyant R4 – Photo Point 12 looking upstream *(3/8/2022)*

Wyant R4 – Photo Point 12 looking downstream *(3/8/2022)*

	
UT1 – Photo Point 13 looking upstream *(3/8/2022)*	**UT1** – Photo Point 13 looking downstream *(3/8/2022)*
	
UT1 – Photo Point 14 looking upstream *(3/8/2022)*	**UT1** – Photo Point 14 looking downstream *(3/8/2022)*
	
UT2 R1 – Photo Point 15 looking upstream *(10/3/2022)*	**UT2 R1** – Photo Point 15 looking downstream *(10/3/2022)*

	
UT2 R2 – Photo Point 16 looking upstream *(3/8/2022)*	**UT2 R2** – Photo Point 16 looking downstream *(3/8/2022)*
	
UT2 R3 – Photo Point 17 looking upstream *(3/8/2022)*	**UT2 R3** – Photo Point 17 looking downstream *(3/8/2022)*
	
UT2 R3 – Photo Point 18 looking upstream *(3/8/2022)*	**UT2 R3** – Photo Point 18 looking downstream *(3/8/2022)*

	
UT3 R1 – Photo Point 19 looking upstream *(3/8/2022)*	**UT3 R1** – Photo Point 19 looking downstream *(3/8/2022)*
	
UT3 R2 – Photo Point 20 looking upstream *(3/8/2022)*	**UT3 R2** – Photo Point 20 looking downstream *(3/8/2022)*
	
UT2 R1 – Photo Point 21 looking upstream *(10/3/2022)*	**UT2 R1** – Photo Point 21 looking downstream *(10/3/2022)*

Culvert Photographs

Wyant R2 – Photo Point 6A downstream inlet *(3/8/2022)*

Wyant R2 – Photo Point 6B upstream outlet *(3/8/2022)*

Wyant R3 – Photo Point 8A downstream inlet *(3/8/2022)*

Wyant R3 – Photo Point 8B upstream outlet *(3/8/2022)*

UT2 R2 – Photo Point 16A downstream inlet *(3/8/2022)*

UT2 R2– Photo Point 16B upstream outlet *(3/8/2022)*

	
UT2 R3– Photo Point 18A crossing *(3/8/2022)*	**UT2 R1**– upstream outlet *(10/3/2022)*

BMP Photographs

BMP 1 - looking up from bottom *(11/30/2022)*

BMP 1 - looking down from top *(11/30/2022)*

BMP 2 - looking up across containment *(10/3/2022)*

BMP 2 - looking down from top *(11/30/2022)*

BMP 3 - looking up from bottom *(11/30/2022)*

BMP 3 - looking down from top outside fence *(11/30/2022)*

BMP 3 - looking up from outside fence *(11/30/2022)*

Groundwater Gage Photographs

	
Groundwater Gage 1 - *(3/8/2022)*	**Groundwater Gage 2** - *(3/8/2022)*
	
Groundwater Gage 3 - *(3/8/2022)*	**Groundwater Gage 4** - *(3/8/2022)*
	
Groundwater Gage 5 - *(3/8/2022)*	**Groundwater Gage 6** - *(3/8/2022)*

Groundwater Gage 7 - *(3/8/2022)*

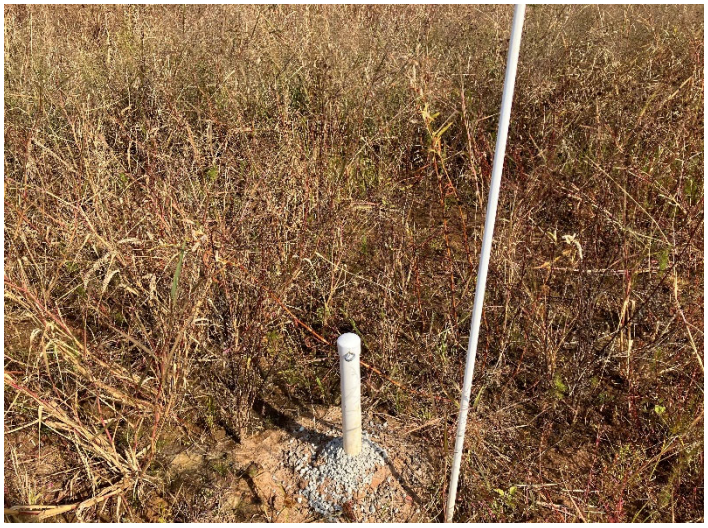
Groundwater Gage 8 - *(3/8/2022)*

Groundwater Gage 9 - *(3/8/2022)*

Groundwater Gage 10 - *(3/8/2022)*

Groundwater Gage 11 - *(3/8/2022)*

Groundwater Gage 12 - *(10/11/2022)*



Groundwater Gage 13 - *(10/11/2022)*

Groundwater Gage 14 - *(10/11/2022)*

Groundwater Gage 15 - *(10/11/2022)*

Vegetation Plot Photographs

PERMANENT VEGETATION PLOT 1 *(9/12/2022)*

PERMANENT VEGETATION PLOT 2 *(9/12/2022)*

PERMANENT VEGETATION PLOT 3 *(9/12/2022)*

PERMANENT VEGETATION PLOT 4 *(9/12/2022)*

PERMANENT VEGETATION PLOT 5 *(9/8/2022)*

PERMANET VEGETATION PLOT 6 *(9/8/2022)*

PERMANENT VEGETATION PLOT 7 *(9/8/2022)*

PERMANENT VEGETATION PLOT 8 *(9/8/2021)*

PERMANENT VEGETATION PLOT 9 *(9/8/2022)*

PERMANENT VEGETATION PLOT 10 *(9/8/2022)*

PERMANENT VEGETATION PLOT 11 *(9/8/2022)*

PERMANENT VEGETATION PLOT 12 *(9/8/2022)*

PERMANENT VEGETATION PLOT 13 *(10/11/2022)*

PERMANET VEGETATION PLOT 14 *(9/8/2022)*

PERMANENT VEGETATION PLOT 15 *(9/8/2022)*

PERMANENT VEGETATION PLOT 16 *(9/8/2022)*

PERMANENT VEGETATION PLOT 17 *(9/8/2022)*

PERMANENT VEGETATION PLOT 18 *(9/8/2022)*

PERMANENT VEGETATION PLOT 19 *(9/7/2022)*

PERMANENT VEGETATION PLOT 20 *(9/7/2022)*

PERMANENT VEGETATION PLOT 21 *(9/7/2022)*

PERMANET VEGETATION PLOT 22 *(9/7/2022)*

PERMANENT VEGETATION PLOT 23 *(9/7/2022)*

PERMANENT VEGETATION PLOT 24 *(10/11/2022)*

PERMANENT VEGETATION PLOT 25 *(10/11/2022)*

PERMANET VEGETATION PLOT 26 *(10/11/2022)*

PERMANENT VEGETATION PLOT 27 *(10/11/2022)*

PERMANENT VEGETATION PLOT 28 *(10/11/2022)*

MOBILE VEGETATION PLOT 1 *(9/12/2022)*

MOBILE VEGETATION PLOT 2 *(9/12/2022)*

MOBILE VEGETATION PLOT 3 *(9/8/2022)*

MOBILE VEGETATION PLOT 4 *(9/8/2022)*

MOBILE VEGETATION PLOT 5 *(9/8/2022)*

MOBILE VEGETATION PLOT 6 *(9/7/2022)*

MOBILE VEGETATION PLOT 7 *(9/7/2022)*

MOBILE VEGETATION PLOT 8 *(9/7/2022)*

Resolved Areas of Concern Photographs

Wyant UT2 R3 – Improved Bare Area *(10/3/2022)*

Wyant Road Culvert – Improved Erosion Mitigation *(10/3/2022)*

Wyant Road Ford – Improved Erosion Mitigation *(10/3/2022*

Wyant Creek R4 – Removed Beaver Dam 136+00 *(10/3/2022)*

Wyant Creek R4 – Removed Beaver Dam 141+00 *(10/3/2022)*

UT2 R1 – Treated Chinese Privet *(10/3/2022)*

	
UT1 – Improved Bank Erosion 202+00 *(10/3/2022)*	**Wyant Creek R1** – Improved Aggradation 102+25 *(10/3/2022)*

Existing Areas of Concern Photographs

Wyant UT2 R3 – Structure Issue 322+00 *(10/3/2022)*

UT2 R1 – Erosion Gully next to BMP 3 *(10/3/2022)*

UT2 R3 – Bare Area *(11/8/2022)*

Appendix B

Vegetation Plot Data

Table 6a. Vegetation Plot Data
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Planted Acreage	45
Date of Initial Plant	2021-04-04
Date(s) of Supplemental Plant(s)	2022-04-19
Date(s) Mowing	NA
Date of Current Survey	2022-10-11
Plot size (ACRES)	0.0247

	Scientific Name	Common Name	Tree/Shrub	Indicator Status	Veg Plot 1 F		Veg Plot 2 F		Veg Plot 3 F		Veg Plot 4 F	
					Planted	Total	Planted	Total	Planted	Total	Planted	Total
Species Included in Approved Mitigation Plan	Alnus serrulata	hazel alder	Tree	OBL								
	Aronia arbutifolia	red chokeberry	Shrub	FACW								
	Betula nigra	river birch	Tree	FACW	1	1	1	1			1	1
	Carpinus caroliniana	American hornbeam	Tree	FAC								
	Cephalanthus occidentalis	common buttonbush	Shrub	OBL								
	Diospyros virginiana	common persimmon	Tree	FAC	2	2	1	1			1	1
	Fraxinus pennsylvanica	green ash	Tree	FACW	1	1	1	1				
	Liriodendron tulipifera	tuliptree	Tree	FACU								
	Morus rubra	red mulberry	Tree	FACU								
	Platanus occidentalis	American sycamore	Tree	FACW	2	2	2	2	1	1	2	2
	Populus deltoides	eastern cottonwood	Tree	FAC	1	1	1	1				
	Quercus michauxii	swamp chestnut oak	Tree	FACW	2	2	1	1			1	1
	Quercus nigra	water oak	Tree	FAC			1	1			1	1
	Quercus phellos	willow oak	Tree	FAC	1	1					1	1
	Salix nigra	black willow	Tree	OBL								
	Salix sericea	silky willow	Shrub	OBL								
	Sambucus canadensis	American black elderberry	Tree									
Sum	Performance Standard				10	10	8	8	1	1	7	7
Post Mitigation Plan Species	Acer negundo	boxelder	Tree	FAC								
	Nyssa sylvatica	blackgum	Tree	FAC								
	Oxydendrum arboreum	sourwood	Shrub	UPL								
Sum	Proposed Standard				10	10	8	8	1	1	7	7
Mitigation Plan Performance Standard	Current Year Stem Count					10		8		1		7
	Stems/Acre					405		324		40		283
	Species Count					7		7		1		6
	Dominant Species Composition (%)					20		25		100		29
	Average Plot Height (ft.)					4		4		4		3
	% Invasives					0		0		0		0
Post Mitigation Plan Performance Standard	Current Year Stem Count					10		8		1		7
	Stems/Acre					405		324		40		283
	Species Count					7		7		1		6
	Dominant Species Composition (%)					20		25		100		29
	Average Plot Height (ft.)					4		4		4		3
	% Invasives					0		0		0		0

1). Bolded species are proposed for the current monitoring year, italicized species are not approved, and a regular font indicates that the species has been approved.
2). The "Species Included in Approved Mitigation Plan" section contains only those species that were included in the original approved mitigation plan. The "Post Mitigation Plan Species" section includes species that are being proposed through a mitigation plan addendum for the current monitoring year (bolded) , species that have been approved in prior monitoring years through a mitigation plan addendum (regular font), and species that are not approved (italicized).
3). The "Mitigation Plan Performance Standard" section is derived only from stems included in the original mitigation plan, whereas the "Post Mitigation Plan Performance Standard" includes data from mitigation plan approved, post mitigation plan approved, and proposed stems.

Table 6b. Vegetation Plot Data
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Planted Acreage	45
Date of Initial Plant	2021-04-04
Date(s) of Supplemental Plant(s)	2022-04-19
Date(s) Mowing	NA
Date of Current Survey	2022-10-11
Plot size (ACRES)	0.0247

	Scientific Name	Common Name	Tree/Shrub	Indicator Status	Veg Plot 5 F		Veg Plot 6 F		Veg Plot 7 F		Veg Plot 8 F	
					Planted	Total	Planted	Total	Planted	Total	Planted	Total
Species Included in Approved Mitigation Plan	Alnus serrulata	hazel alder	Tree	OBL								
	Aronia arbutifolia	red chokeberry	Shrub	FACW								
	Betula nigra	river birch	Tree	FACW	1	1	2	2				
	Carpinus caroliniana	American hornbeam	Tree	FAC			1	1				
	Cephalanthus occidentalis	common buttonbush	Shrub	OBL							3	3
	Diospyros virginiana	common persimmon	Tree	FAC	1	1	1	1	2	2		
	Fraxinus pennsylvanica	green ash	Tree	FACW			2	2				
	Liriodendron tulipifera	tuliptree	Tree	FACU								
	Morus rubra	red mulberry	Tree	FACU								
	Platanus occidentalis	American sycamore	Tree	FACW	3	3	2	2	3	3	2	2
	Populus deltoides	eastern cottonwood	Tree	FAC	2	2	1	1	2	2		
	Quercus michauxii	swamp chestnut oak	Tree	FACW					2	2		
	Quercus nigra	water oak	Tree	FAC	1	1	1	1				
	Quercus phellos	willow oak	Tree	FAC			1	1	3	3	1	1
	Salix nigra	black willow	Tree	OBL								
	Salix sericea	silky willow	Shrub	OBL								
	Sambucus canadensis	American black elderberry	Tree								2	2
Sum	Performance Standard				8	8	11	11	12	12	8	8
Post Mitigation Plan Species	Acer negundo	boxelder	Tree	FAC								
	Nyssa sylvatica	blackgum	Tree	FAC								
	Oxydendrum arboreum	sourwood	Shrub	UPL								
Sum	Proposed Standard				8	8	11	11	12	12	8	8
Mitigation Plan Performance Standard	Current Year Stem Count					8		11		12		8
	Stems/Acre					324		445		486		324
	Species Count					5		8		5		4
	Dominant Species Composition (%)					38		18		25		38
	Average Plot Height (ft.)					9		6		4		5
	% Invasives					0		0		0		0
Post Mitigation Plan Performance Standard	Current Year Stem Count					8		11		12		8
	Stems/Acre					324		445		486		324
	Species Count					5		8		5		4
	Dominant Species Composition (%)					38		18		25		38
	Average Plot Height (ft.)					9		6		4		5
	% Invasives					0		0		0		0

1). Bolded species are proposed for the current monitoring year, italicized species are not approved, and a regular font indicates that the species has been approved.
2). The "Species Included in Approved Mitigation Plan" section contains only those species that were included in the original approved mitigation plan. The "Post Mitigation Plan Species" section includes species that are being proposed through a mitigation plan addendum for the current monitoring year (bolded) , species that have been approved in prior monitoring years through a mitigation plan addendum (regular font), and species that are not approved (italicized).
3). The "Mitigation Plan Performance Standard" section is derived only from stems included in the original mitigation plan, whereas the "Post Mitigation Plan Performance Standard" includes data from mitigation plan approved, post mitigation plan approved, and proposed stems.

Table 6c. Vegetation Plot Data
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Planted Acreage	45
Date of Initial Plant	2021-04-04
Date(s) of Supplemental Plant(s)	2022-04-19
Date(s) Mowing	NA
Date of Current Survey	2022-10-11
Plot size (ACRES)	0.0247

	Scientific Name	Common Name	Tree/Shrub	Indicator Status	Veg Plot 9 F		Veg Plot 10 F		Veg Plot 11 F		Veg Plot 12 F	
					Planted	Total	Planted	Total	Planted	Total	Planted	Total
Species Included in Approved Mitigation Plan	Alnus serrulata	hazel alder	Tree	OBL								
	Aronia arbutifolia	red chokeberry	Shrub	FACW								
	Betula nigra	river birch	Tree	FACW	1	1	1	1	4	4	2	2
	Carpinus caroliniana	American hornbeam	Tree	FAC	1	1						
	Cephalanthus occidentalis	common buttonbush	Shrub	OBL			1	1	2	2	2	2
	Diospyros virginiana	common persimmon	Tree	FAC	1	1						
	Fraxinus pennsylvanica	green ash	Tree	FACW								
	Liriodendron tulipifera	tuliptree	Tree	FACU	2	2						
	Morus rubra	red mulberry	Tree	FACU								
	Platanus occidentalis	American sycamore	Tree	FACW	4	4	2	2	2	2	3	3
	Populus deltoides	eastern cottonwood	Tree	FAC	1	1						
	Quercus michauxii	swamp chestnut oak	Tree	FACW	1	1	4	4	4	4		
	Quercus nigra	water oak	Tree	FAC	1	1						
	Quercus phellos	willow oak	Tree	FAC	1	1			1	1	1	1
	Salix nigra	black willow	Tree	OBL								
	Salix sericea	silky willow	Shrub	OBL								
	Sambucus canadensis	American black elderberry	Tree						1	1	1	1
Sum	Performance Standard				13	13	8	8	14	14	9	9
Post Mitigation Plan Species	Acer negundo	boxelder	Tree	FAC								
	Nyssa sylvatica	blackgum	Tree	FAC								
	Oxydendrum arboreum	sourwood	Shrub	UPL								
Sum	Proposed Standard				13	13	8	8	14	14	9	9
Mitigation Plan Performance Standard	Current Year Stem Count					13		8		14		9
	Stems/Acre					526		324		567		364
	Species Count					9		4		6		5
	Dominant Species Composition (%)					31		50		29		33
	Average Plot Height (ft.)					4		3		5		5
	% Invasives					0		0		0		0
Post Mitigation Plan Performance Standard	Current Year Stem Count					13		8		14		9
	Stems/Acre					526		324		567		364
	Species Count					9		4		6		5
	Dominant Species Composition (%)					31		50		29		33
	Average Plot Height (ft.)					4		3		5		5
	% Invasives					0		0		0		0

1). Bolded species are proposed for the current monitoring year, italicized species are not approved, and a regular font indicates that the species has been approved.
2). The "Species Included in Approved Mitigation Plan" section contains only those species that were included in the original approved mitigation plan. The "Post Mitigation Plan Species" section includes species that are being proposed through a mitigation plan addendum for the current monitoring year (bolded) , species that have been approved in prior monitoring years through a mitigation plan addendum (regular font), and species that are not approved (italicized).
3). The "Mitigation Plan Performance Standard" section is derived only from stems included in the original mitigation plan, whereas the "Post Mitigation Plan Performance Standard" includes data from mitigation plan approved, post mitigation plan approved, and proposed stems.

Table 6d. Vegetation Plot Data
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Planted Acreage	45
Date of Initial Plant	2021-04-04
Date(s) of Supplemental Plant(s)	2022-04-19
Date(s) Mowing	NA
Date of Current Survey	2022-10-11
Plot size (ACRES)	0.0247

	Scientific Name	Common Name	Tree/Shrub	Indicator Status	Veg Plot 13 F		Veg Plot 14 F		Veg Plot 15 F		Veg Plot 16 F	
					Planted	Total	Planted	Total	Planted	Total	Planted	Total
Species Included in Approved Mitigation Plan	Alnus serrulata	hazel alder	Tree	OBL								
	Aronia arbutifolia	red chokeberry	Shrub	FACW	2	2						
	Betula nigra	river birch	Tree	FACW	3	3	2	2	2	2	2	2
	Carpinus caroliniana	American hornbeam	Tree	FAC			1	1				
	Cephalanthus occidentalis	common buttonbush	Shrub	OBL							1	1
	Diospyros virginiana	common persimmon	Tree	FAC			1	1	1	1		
	Fraxinus pennsylvanica	green ash	Tree	FACW			2	2	2	2		
	Liriodendron tulipifera	tuliptree	Tree	FACU			1	1				
	Morus rubra	red mulberry	Tree	FACU	1	1						
	Platanus occidentalis	American sycamore	Tree	FACW	2	2	2	2	2	2	2	2
	Populus deltoides	eastern cottonwood	Tree	FAC			1	1	1	1		
	Quercus michauxii	swamp chestnut oak	Tree	FACW			2	2			2	2
	Quercus nigra	water oak	Tree	FAC	1	1	1	1				
	Quercus phellos	willow oak	Tree	FAC					2	2	2	2
	Salix nigra	black willow	Tree	OBL								
	Salix sericea	silky willow	Shrub	OBL								
	Sambucus canadensis	American black elderberry	Tree									
Sum	Performance Standard				9	9	13	13	10	10	9	9
Post Mitigation Plan Species	Acer negundo	boxelder	Tree	FAC								
	Nyssa sylvatica	blackgum	Tree	FAC								
	Oxydendrum arboreum	sourwood	Shrub	UPL	2	2						
Sum	Proposed Standard				11	11	13	13	10	10	9	9
Mitigation Plan Performance Standard	Current Year Stem Count					9		13		10		9
	Stems/Acre					364		526		405		364
	Species Count					5		9		6		5
	Dominant Species Composition (%)					27		15		20		22
	Average Plot Height (ft.)					4		4		4		4
	% Invasives					0		0		0		0
Post Mitigation Plan Performance Standard	Current Year Stem Count					11		13		10		9
	Stems/Acre					445		526		405		364
	Species Count					6		9		6		5
	Dominant Species Composition (%)					27		15		20		22
	Average Plot Height (ft.)					4		4		4		4
	% Invasives					0		0		0		0

1). Bolded species are proposed for the current monitoring year, italicized species are not approved, and a regular font indicates that the species has been approved.
2). The "Species Included in Approved Mitigation Plan" section contains only those species that were included in the original approved mitigation plan. The "Post Mitigation Plan Species" section includes species that are being proposed through a mitigation plan addendum for the current monitoring year (bolded) , species that have been approved in prior monitoring years through a mitigation plan addendum (regular font), and species that are not approved (italicized).
3). The "Mitigation Plan Performance Standard" section is derived only from stems included in the original mitigation plan, whereas the "Post Mitigation Plan Performance Standard" includes data from mitigation plan approved, post mitigation plan approved, and proposed stems.

Table 6e. Vegetation Plot Data
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Planted Acreage	45
Date of Initial Plant	2021-04-04
Date(s) of Supplemental Plant(s)	2022-04-19
Date(s) Mowing	NA
Date of Current Survey	2022-10-11
Plot size (ACRES)	0.0247

	Scientific Name	Common Name	Tree/Shrub	Indicator Status	Veg Plot 17 F		Veg Plot 18 F		Veg Plot 19 F		Veg Plot 20 F	
					Planted	Total	Planted	Total	Planted	Total	Planted	Total
Species Included in Approved Mitigation Plan	Alnus serrulata	hazel alder	Tree	OBL								
	Aronia arbutifolia	red chokeberry	Shrub	FACW								
	Betula nigra	river birch	Tree	FACW	2	2	1	1	3	3	1	1
	Carpinus caroliniana	American hornbeam	Tree	FAC								
	Cephalanthus occidentalis	common buttonbush	Shrub	OBL	1	1	2	2	1	1	1	1
	Diospyros virginiana	common persimmon	Tree	FAC								
	Fraxinus pennsylvanica	green ash	Tree	FACW								
	Liriodendron tulipifera	tuliptree	Tree	FACU								
	Morus rubra	red mulberry	Tree	FACU								
	Platanus occidentalis	American sycamore	Tree	FACW	1	1	1	1	1	1	4	4
	Populus deltoides	eastern cottonwood	Tree	FAC								
	Quercus michauxii	swamp chestnut oak	Tree	FACW	1	1	3	3	2	2	2	2
	Quercus nigra	water oak	Tree	FAC								
	Quercus phellos	willow oak	Tree	FAC	1	1	2	2	2	2	1	1
	Salix nigra	black willow	Tree	OBL								
	Salix sericea	silky willow	Shrub	OBL								
	Sambucus canadensis	American black elderberry	Tree		1	1			1	1	1	1
Sum	Performance Standard				7	7	9	9	10	10	10	10
Post Mitigation Plan Species	Acer negundo	boxelder	Tree	FAC								
	Nyssa sylvatica	blackgum	Tree	FAC								
	Oxydendrum arboreum	sourwood	Shrub	UPL								
Sum	Proposed Standard				7	7	9	9	10	10	10	10
Mitigation Plan Performance Standard	Current Year Stem Count					7		9		10		10
	Stems/Acre					283		364		405		405
	Species Count					6		5		6		6
	Dominant Species Composition (%)					29		33		30		40
	Average Plot Height (ft.)					3		2		2		3
	% Invasives					0		0		0		0
Post Mitigation Plan Performance Standard	Current Year Stem Count					7		9		10		10
	Stems/Acre					283		364		405		405
	Species Count					6		5		6		6
	Dominant Species Composition (%)					29		33		30		40
	Average Plot Height (ft.)					3		2		2		3
	% Invasives					0		0		0		0

1). Bolded species are proposed for the current monitoring year, italicized species are not approved, and a regular font indicates that the species has been approved.
2). The "Species Included in Approved Mitigation Plan" section contains only those species that were included in the original approved mitigation plan. The "Post Mitigation Plan Species" section includes species that are being proposed through a mitigation plan addendum for the current monitoring year (bolded) , species that have been approved in prior monitoring years through a mitigation plan addendum (regular font), and species that are not approved (italicized).
3). The "Mitigation Plan Performance Standard" section is derived only from stems included in the original mitigation plan, whereas the "Post Mitigation Plan Performance Standard" includes data from mitigation plan approved, post mitigation plan approved, and proposed stems.

Table 6f. Vegetation Plot Data
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Planted Acreage	45
Date of Initial Plant	2021-04-04
Date(s) of Supplemental Plant(s)	2022-04-19
Date(s) Mowing	NA
Date of Current Survey	2022-10-11
Plot size (ACRES)	0.0247

	Scientific Name	Common Name	Tree/Shrub	Indicator Status	Veg Plot 21 F		Veg Plot 22 F		Veg Plot 23 F		Veg Plot 24 F	
					Planted	Total	Planted	Total	Planted	Total	Planted	Total
Species Included in Approved Mitigation Plan	Alnus serrulata	hazel alder	Tree	OBL							1	1
	Aronia arbutifolia	red chokeberry	Shrub	FACW								
	Betula nigra	river birch	Tree	FACW	2	2	3	3	2	2	1	1
	Carpinus caroliniana	American hornbeam	Tree	FAC								
	Cephalanthus occidentalis	common buttonbush	Shrub	OBL	2	2	1	1	3	3		
	Diospyros virginiana	common persimmon	Tree	FAC								
	Fraxinus pennsylvanica	green ash	Tree	FACW								
	Liriodendron tulipifera	tuliptree	Tree	FACU								
	Morus rubra	red mulberry	Tree	FACU								
	Platanus occidentalis	American sycamore	Tree	FACW	2	2	1	1	3	3	4	4
	Populus deltoides	eastern cottonwood	Tree	FAC								
	Quercus michauxii	swamp chestnut oak	Tree	FACW	1	1			1	1		
	Quercus nigra	water oak	Tree	FAC								
	Quercus phellos	willow oak	Tree	FAC	1	1	4	4	2	2		
	Salix nigra	black willow	Tree	OBL							5	5
	Salix sericea	silky willow	Shrub	OBL								
	Sambucus canadensis	American black elderberry	Tree		1	1						
Sum	Performance Standard				9	9	9	9	11	11	11	11
Post Mitigation Plan Species	Acer negundo	boxelder	Tree	FAC								
	Nyssa sylvatica	blackgum	Tree	FAC								
	Oxydendrum arboreum	sourwood	Shrub	UPL								
Sum	Proposed Standard				9	9	9	9	11	11	11	11
Mitigation Plan Performance Standard	Current Year Stem Count					9		9		11		11
	Stems/Acre					364		364		445		445
	Species Count					6		4		5		4
	Dominant Species Composition (%)					22		44		27		45
	Average Plot Height (ft.)					2		3		4		4
	% Invasives					0		0		0		0
Post Mitigation Plan Performance Standard	Current Year Stem Count					9		9		11		11
	Stems/Acre					364		364		445		445
	Species Count					6		4		5		4
	Dominant Species Composition (%)					22		44		27		45
	Average Plot Height (ft.)					2		3		4		4
	% Invasives					0		0		0		0

1). Bolded species are proposed for the current monitoring year, italicized species are not approved, and a regular font indicates that the species has been approved.
2). The "Species Included in Approved Mitigation Plan" section contains only those species that were included in the original approved mitigation plan. The "Post Mitigation Plan Species" section includes species that are being proposed through a mitigation plan addendum for the current monitoring year (bolded) , species that have been approved in prior monitoring years through a mitigation plan addendum (regular font), and species that are not approved (italicized).
3). The "Mitigation Plan Performance Standard" section is derived only from stems included in the original mitigation plan, whereas the "Post Mitigation Plan Performance Standard" includes data from mitigation plan approved, post mitigation plan approved, and proposed stems.

Table 6g. Vegetation Plot Data
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Planted Acreage	45
Date of Initial Plant	2021-04-04
Date(s) of Supplemental Plant(s)	2022-04-19
Date(s) Mowing	NA
Date of Current Survey	2022-10-11
Plot size (ACRES)	0.0247

	Scientific Name	Common Name	Tree/Shrub	Indicator Status	Veg Plot 25 F		Veg Plot 26 F		Veg Plot 27 F		Veg Plot 28 F	
					Planted	Total	Planted	Total	Planted	Total	Planted	Total
Species Included in Approved Mitigation Plan	Alnus serrulata	hazel alder	Tree	OBL	2	2						
	Aronia arbutifolia	red chokeberry	Shrub	FACW								
	Betula nigra	river birch	Tree	FACW	2	2	3	3	2	2	3	3
	Carpinus caroliniana	American hornbeam	Tree	FAC								
	Cephalanthus occidentalis	common buttonbush	Shrub	OBL			2	2			1	1
	Diospyros virginiana	common persimmon	Tree	FAC								
	Fraxinus pennsylvanica	green ash	Tree	FACW								
	Liriodendron tulipifera	tuliptree	Tree	FACU								
	Morus rubra	red mulberry	Tree	FACU								
	Platanus occidentalis	American sycamore	Tree	FACW	4	4	3	3	1	1	2	2
	Populus deltoides	eastern cottonwood	Tree	FAC								
	Quercus michauxii	swamp chestnut oak	Tree	FACW	1	1	1	1	3	3	2	2
	Quercus nigra	water oak	Tree	FAC								
	Quercus phellos	willow oak	Tree	FAC								
	Salix nigra	black willow	Tree	OBL	3	3	1	1	3	3	1	1
	Salix sericea	silky willow	Shrub	OBL							1	1
	Sambucus canadensis	American black elderberry	Tree									
Sum	Performance Standard				12	12	10	10	9	9	10	10
Post Mitigation Plan Species	Acer negundo	boxelder	Tree	FAC	2	2	2	2				
	Nyssa sylvatica	blackgum	Tree	FAC			1	1	1	1		
	Oxydendrum arboreum	sourwood	Shrub	UPL								
Sum	Proposed Standard				14	14	13	13	10	10	10	10
Mitigation Plan Performance Standard	Current Year Stem Count					12		10		9		10
	Stems/Acre					486		405		364		405
	Species Count					5		5		4		6
	Dominant Species Composition (%)					29		23		30		30
	Average Plot Height (ft.)					3		3		4		3
	% Invasives					0		0		0		0
Post Mitigation Plan Performance Standard	Current Year Stem Count					14		13		10		10
	Stems/Acre					567		526		405		405
	Species Count					6		7		5		6
	Dominant Species Composition (%)					29		23		30		30
	Average Plot Height (ft.)					3		3		4		3
	% Invasives					0		0		0		0

1). Bolded species are proposed for the current monitoring year, italicized species are not approved, and a regular font indicates that the species has been approved.
2). The "Species Included in Approved Mitigation Plan" section contains only those species that were included in the original approved mitigation plan. The "Post Mitigation Plan Species" section includes species that are being proposed through a mitigation plan addendum for the current monitoring year (bolded) , species that have been approved in prior monitoring years through a mitigation plan addendum (regular font), and species that are not approved (italicized).
3). The "Mitigation Plan Performance Standard" section is derived only from stems included in the original mitigation plan, whereas the "Post Mitigation Plan Performance Standard" includes data from mitigation plan approved, post mitigation plan approved, and proposed stems.

Table 6h. Vegetation Plot Data
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Planted Acreage	45
Date of Initial Plant	2021-04-04
Date(s) of Supplemental Plant(s)	2022-04-19
Date(s) Mowing	NA
Date of Current Survey	2022-10-11
Plot size (ACRES)	0.0247

	Scientific Name	Common Name	Tree/Shrub	Indicator Status	Veg Plot 1 R Total	Veg Plot 2 R Total	Veg Plot 3 R Total	Veg Plot 4 R Total	Veg Plot 5 R Total	Veg Plot 6 R Total	Veg Plot 7 R Total	Veg Plot 8 R Total
Species Included in Approved Mitigation Plan	Alnus serrulata	hazel alder	Tree	OBL								
	Aronia arbutifolia	red chokeberry	Shrub	FACW								
	Betula nigra	river birch	Tree	FACW		4			3	5	3	2
	Carpinus caroliniana	American hornbeam	Tree	FAC								
	Cephalanthus occidentalis	common buttonbush	Shrub	OBL		3				2	1	3
	Diospyros virginiana	common persimmon	Tree	FAC	2			2				
	Fraxinus pennsylvanica	green ash	Tree	FACW				3				1
	Liriodendron tulipifera	tuliptree	Tree	FACU			1					
	Morus rubra	red mulberry	Tree	FACU								
	Platanus occidentalis	American sycamore	Tree	FACW	4	1	2	2	2	1	4	4
	Populus deltoides	eastern cottonwood	Tree	FAC	3		2	1	1			
	Quercus michauxii	swamp chestnut oak	Tree	FACW	2		3			1	2	2
	Quercus nigra	water oak	Tree	FAC								
	Quercus phellos	willow oak	Tree	FAC				1		2		
	Salix nigra	black willow	Tree	OBL								
	Salix sericea	silky willow	Shrub	OBL								
	Sambucus canadensis	American black elderberry	Tree						2			
Sum	Performance Standard				11	8	8	9	8	11	10	12
Post Mitigation Plan Species	Acer negundo	boxelder	Tree	FAC								
	Nyssa sylvatica	blackgum	Tree	FAC								
	Oxydendrum arboreum	sourwood	Shrub	UPL								
Sum	Proposed Standard				11	8	8	9	8	11	10	12
Mitigation Plan Performance Standard	Current Year Stem Count				11	8	8	9	8	11	10	12
	Stems/Acre				445	324	324	364	324	445	405	486
	Species Count				4	3	4	5	4	5	4	5
	Dominant Species Composition (%)				36	50	38	33	38	45	40	33
	Average Plot Height (ft.)				6	5	3	6	4	4	3	6
	% Invasives				0	0	0	0	0	0	0	0
Post Mitigation Plan Performance Standard	Current Year Stem Count				11	8	8	9	8	11	10	12
	Stems/Acre				445	324	324	364	324	445	405	486
	Species Count				4	3	4	5	4	5	4	5
	Dominant Species Composition (%)				36	50	38	33	38	45	40	33
	Average Plot Height (ft.)				6	5	3	6	4	4	3	6
	% Invasives				0	0	0	0	0	0	0	0

1). Bolded species are proposed for the current monitoring year, italicized species are not approved, and a regular font indicates that the species has been approved.
2). The "Species Included in Approved Mitigation Plan" section contains only those species that were included in the original approved mitigation plan. The "Post Mitigation Plan Species" section includes species that are being proposed through a mitigation plan addendum for the current monitoring year (bolded) , species that have been approved in prior monitoring years through a mitigation plan addendum (regular font), and species that are not approved (italicized).
3). The "Mitigation Plan Performance Standard" section is derived only from stems included in the original mitigation plan, whereas the "Post Mitigation Plan Performance Standard" includes data from mitigation plan approved, post mitigation plan approved, and proposed stems.

Table 7a. Vegetation Plot Data
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Vegetation Performance Standards Summary Table												
	Veg Plot 1 F				Veg Plot 2 F				Veg Plot 3 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2	405	4	7	0	324	4	7	0	40	4	1	0
Monitoring Year 1	445	3	8	0	324	2	7	0	202	3	4	0
Monitoring Year 0	607	2	10	0	526	3	9	0	526	3	7	0
	Veg Plot 4 F				Veg Plot 5 F				Veg Plot 6 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2	283	3	6	0	324	9	5	0	445	6	8	0
Monitoring Year 1	364	3	6	0	324	4	5	0	526	3	10	0
Monitoring Year 0	486	2	8	0	526	2	8	0	567	3	10	0
	Veg Plot 7 F				Veg Plot 8 F				Veg Plot 9 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2	486	4	5	0	324	5	4	0	526	4	9	0
Monitoring Year 1	486	2	6	0	405	3	5	0	486	3	8	0
Monitoring Year 0	526	2	7	0	526	2	6	0	567	2	9	0
	Veg Plot 10 F				Veg Plot 11 F				Veg Plot 12 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2	324	3	4	0	567	5	6	0	364	5	5	0
Monitoring Year 1	405	2	5	0	607	3	6	0	405	3	6	0
Monitoring Year 0	526	2	5	0	607	2	6	0	607	2	6	0

*After MY1, each monitoring year represents a different plot for the random vegetation plot "groups". Random plots are denoted with an R, and fixed plots with an F.

Table 7b. Vegetation Plot Data
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Vegetation Performance Standards Summary Table												
	Veg Plot 13 F				Veg Plot 14 F				Veg Plot 15 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2	364	4	5	0	526	4	9	0	405	4	6	0
Monitoring Year 1					567	2	9	0	202	3	3	0
Monitoring Year 0	567	3	9	0	607	3	10	0	486	2	8	0
	Veg Plot 16 F				Veg Plot 17 F				Veg Plot 18 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2	364	4	5	0	283	3	6	0	364	2	5	0
Monitoring Year 1	405	3	5	0	364	2	6	0	445	2	6	0
Monitoring Year 0	526	2	6	0	486	2	6	0	526	2	6	0
	Veg Plot 19 F				Veg Plot 20 F				Veg Plot 21 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2	405	2	6	0	405	3	6	0	364	2	6	0
Monitoring Year 1	405	2	6	0	445	2	6	0	405	2	6	0
Monitoring Year 0	486	2	6	0	445	2	6	0	526	2	6	0
	Veg Plot 22 F				Veg Plot 23 F				Veg Plot 24 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2	364	3	4	0	445	4	5	0	445	4	4	0
Monitoring Year 1	445	3	6	0	526	3	6	0				
Monitoring Year 0	486	2	6	0	526	2	6	0	486	2	4	0

*After MY1, each monitoring year represents a different plot for the random vegetation plot "groups". Random plots are denoted with an R, and fixed plots with an F.

Table 7c. Vegetation Plot Data
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Vegetation Performance Standards Summary Table												
	Veg Plot 25 F				Veg Plot 26 F				Veg Plot 27 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2	486	3	5	0	405	3	5	0	364	4	4	0
Monitoring Year 1												
Monitoring Year 0	486	2	5	0	486	3	6	0	364	2	4	0
	Veg Plot 28 F				Veg Plot Group 1 R				Veg Plot Group 2 R			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2	405	3	6	0	445	6	4	0	324	5	3	0
Monitoring Year 1					324	3	6	0	283	3	5	0
Monitoring Year 0	486	2	7	0	486	2	6	0	526	2	8	0
	Veg Plot Group 3 R				Veg Plot Group 4 R				Veg Plot Group 5 R			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2	324	3	4	0	364	6	5	0	324	4	4	0
Monitoring Year 1	364	2	5	0	324	2	4	0	324	3	3	0
Monitoring Year 0	607	2	9	0	567	2	6	0	526	2	6	0
	Veg Plot Group 6 R				Veg Plot Group 7 R				Veg Plot Group 8 R			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2	445	4	5	0	405	3	4	0	486	6	5	0
Monitoring Year 1	486	2	5	0	364	2	4	0	324	3	5	0
Monitoring Year 0	445	3	7	0	486	2	4	0	526	2	6	0

*After MY1, each monitoring year represents a different plot for the random vegetation plot "groups". Random plots are denoted with an R, and fixed plots with an F.

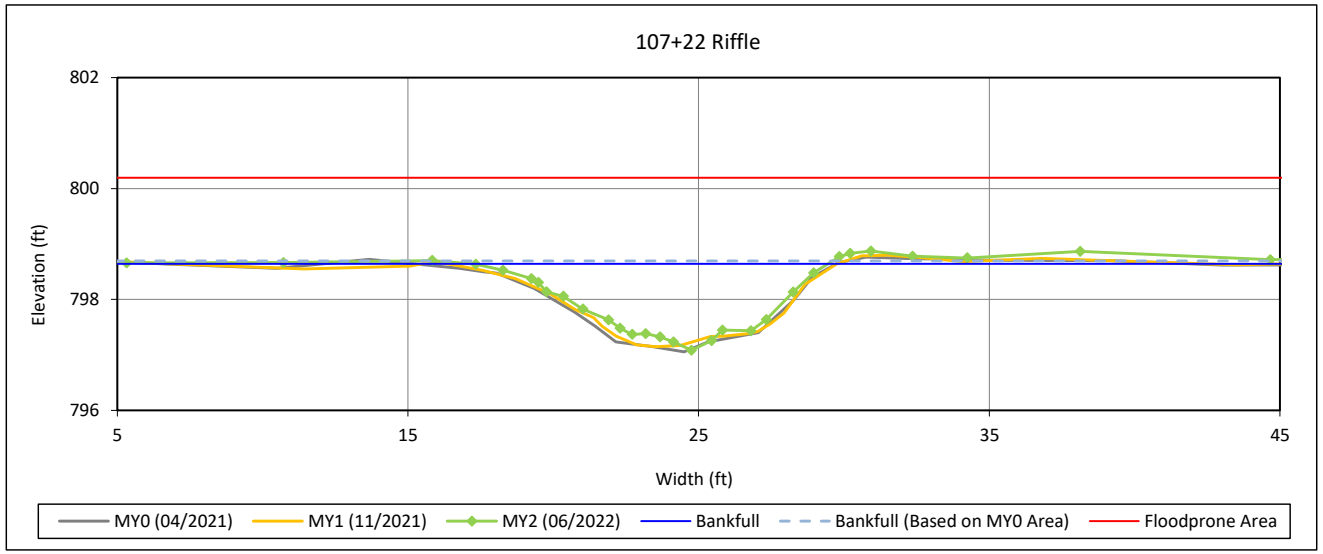
Appendix C

Stream Geomorphology Data

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 1-Wyant Creek R1



Bankfull Dimensions	
9.9	x-section area (ft.sq.)
12.1	width (ft)
0.8	mean depth (ft)
1.6	max depth (ft)
12.7	wetted perimeter (ft)
0.8	hydraulic radius (ft)
14.8	width-depth ratio
50.7	W flood prone area (ft)
4.2	entrenchment ratio
1.0	low bank height ratio

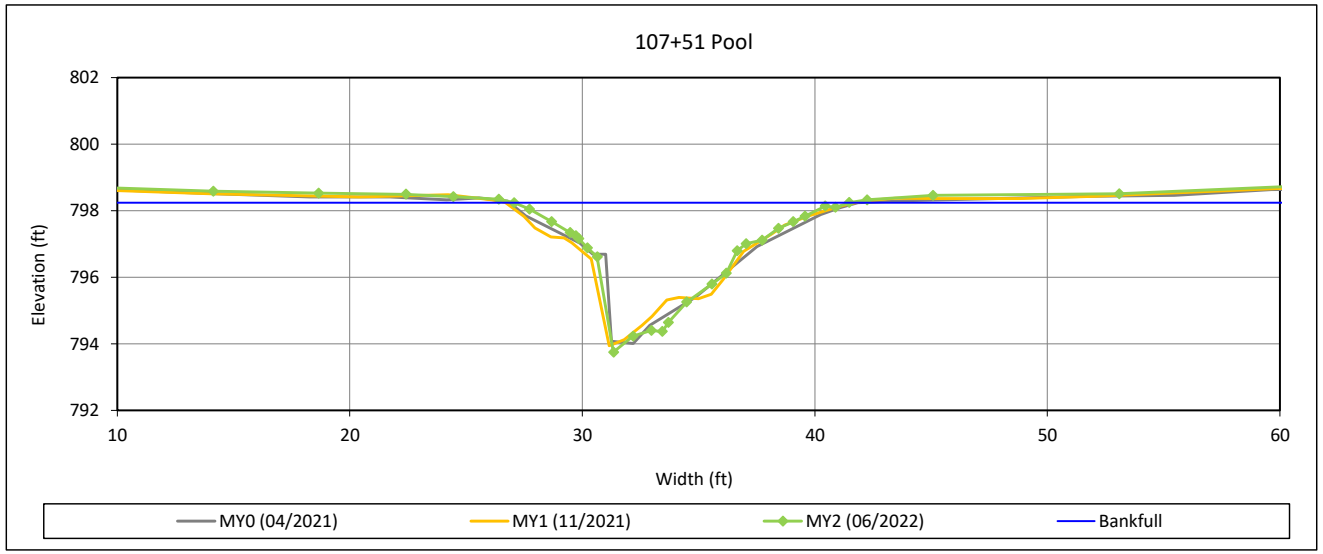
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 2-Wyant Creek R1



Bankfull Dimensions	
24.8	x-section area (ft.sq.)
14.4	width (ft)
1.7	mean depth (ft)
4.5	max depth (ft)
18.3	wetted perimeter (ft)
1.4	hydraulic radius (ft)
8.3	width-depth ratio

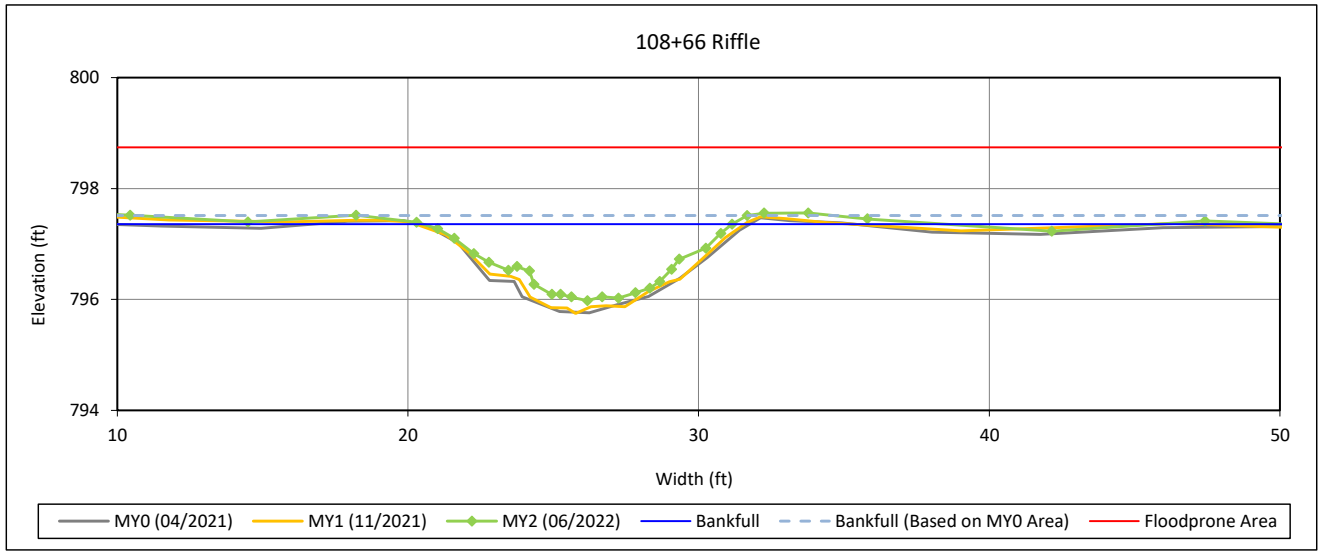
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 3-Wyant Creek R1



Bankfull Dimensions	
8.6	x-section area (ft.sq.)
10.6	width (ft)
0.8	mean depth (ft)
1.4	max depth (ft)
11.2	wetted perimeter (ft)
0.8	hydraulic radius (ft)
13.1	width-depth ratio
55.9	W flood prone area (ft)
5.3	entrenchment ratio
< 1.0	low bank height ratio

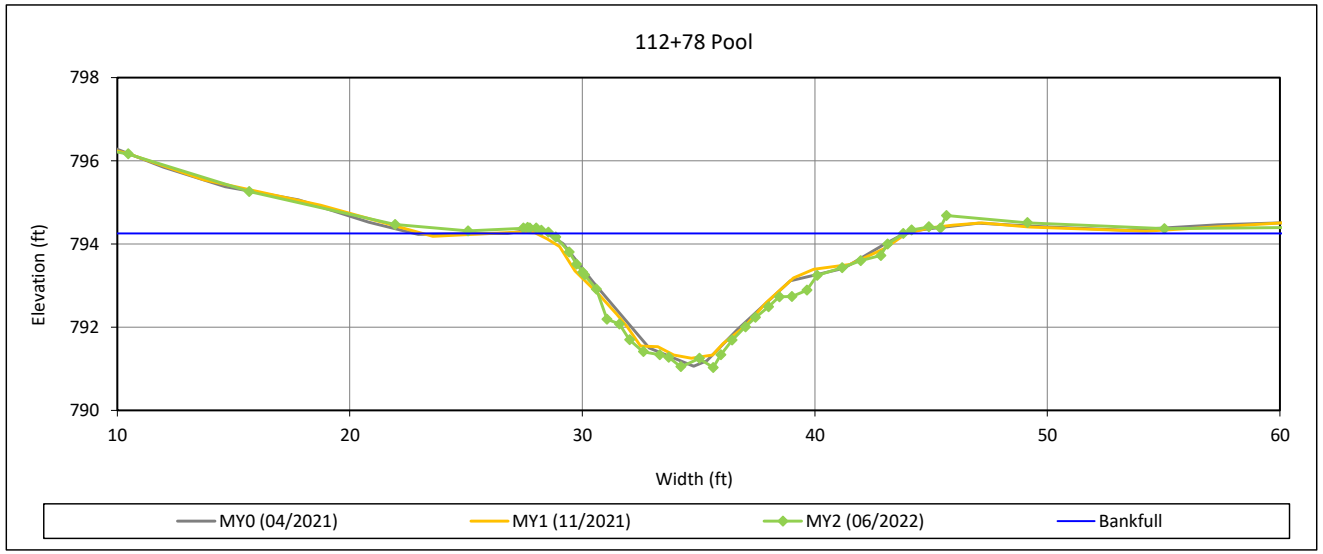
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 4-Wyant Creek R1



Bankfull Dimensions	
25.9	x-section area (ft.sq.)
15.2	width (ft)
1.7	mean depth (ft)
3.2	max depth (ft)
17.1	wetted perimeter (ft)
1.5	hydraulic radius (ft)
8.9	width-depth ratio

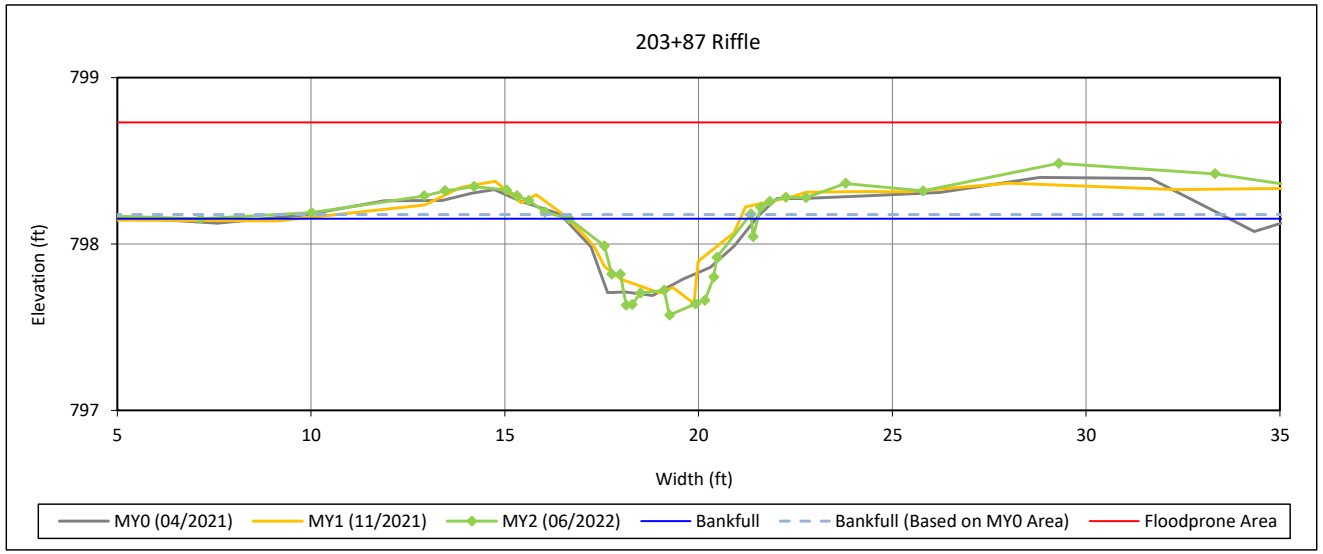
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 5 - UT1



Bankfull Dimensions	
1.5	x-section area (ft.sq.)
4.7	width (ft)
0.3	mean depth (ft)
0.6	max depth (ft)
5.2	wetted perimeter (ft)
0.3	hydraulic radius (ft)
15.2	width-depth ratio
38.9	W flood prone area (ft)
8.2	entrenchment ratio
1.0	low bank height ratio

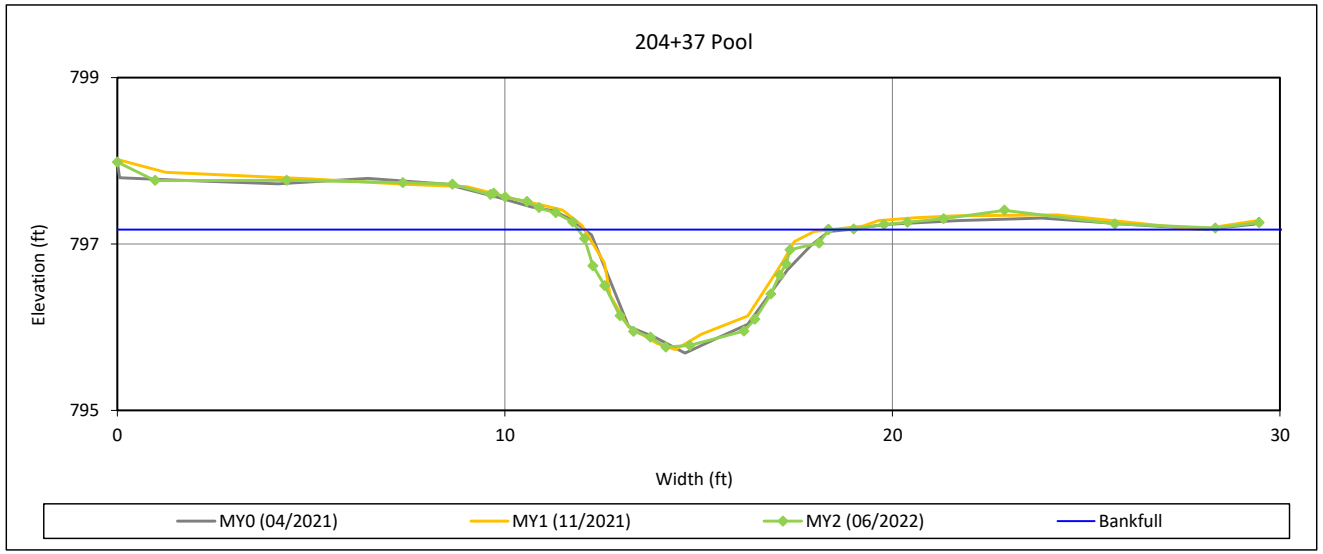
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 6 - UT1



Bankfull Dimensions	
5.9	x-section area (ft.sq.)
6.5	width (ft)
0.9	mean depth (ft)
1.4	max depth (ft)
7.4	wetted perimeter (ft)
0.8	hydraulic radius (ft)
7.1	width-depth ratio

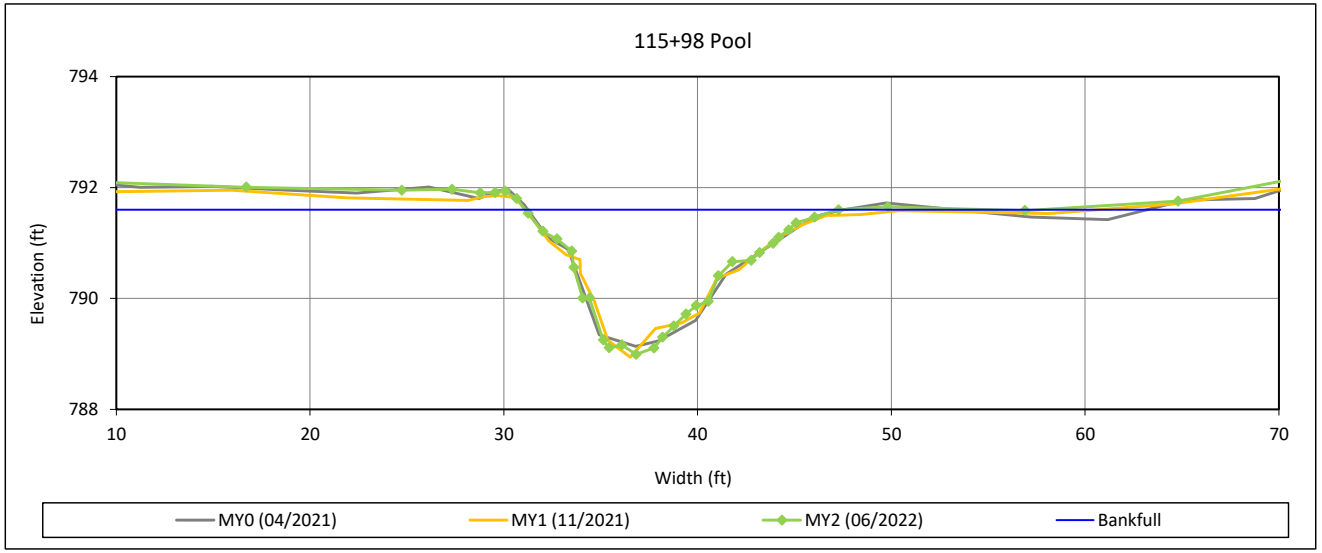
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 7 - Wyant Creek R2



Bankfull Dimensions	
19.8	x-section area (ft.sq.)
16.2	width (ft)
1.2	mean depth (ft)
2.6	max depth (ft)
17.6	wetted perimeter (ft)
1.1	hydraulic radius (ft)
13.2	width-depth ratio

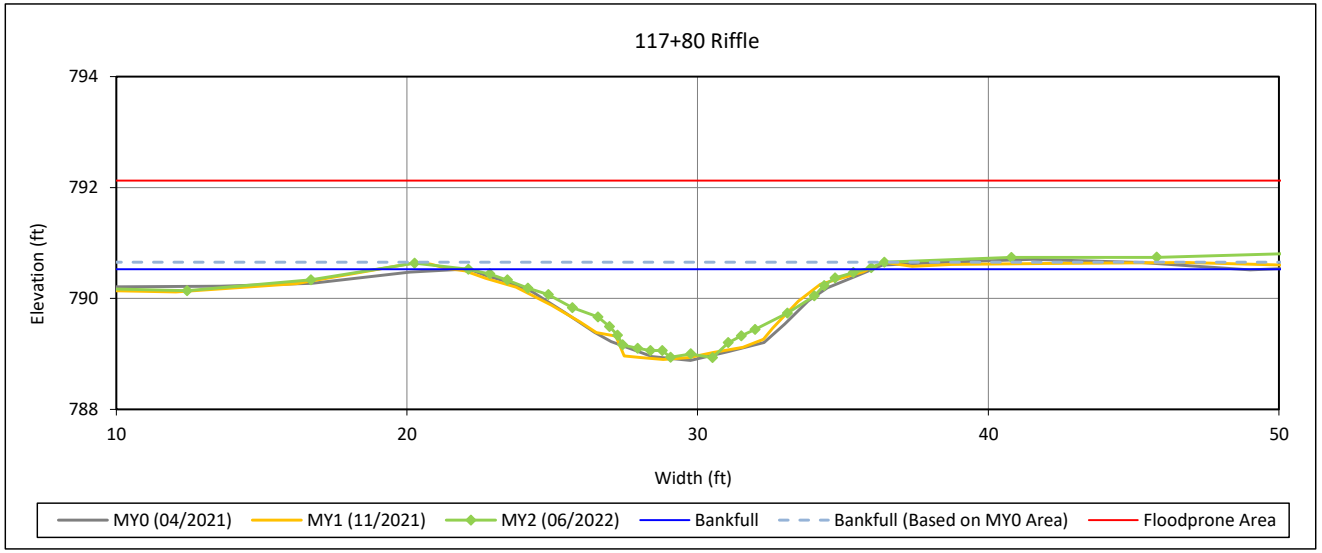
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 8 - Wyant Creek R2



Bankfull Dimensions	
11.1	x-section area (ft.sq.)
13.7	width (ft)
0.8	mean depth (ft)
1.6	max depth (ft)
14.2	wetted perimeter (ft)
0.8	hydraulic radius (ft)
16.8	width-depth ratio
59.0	W flood prone area (ft)
4.3	entrenchment ratio
< 1.0	low bank height ratio

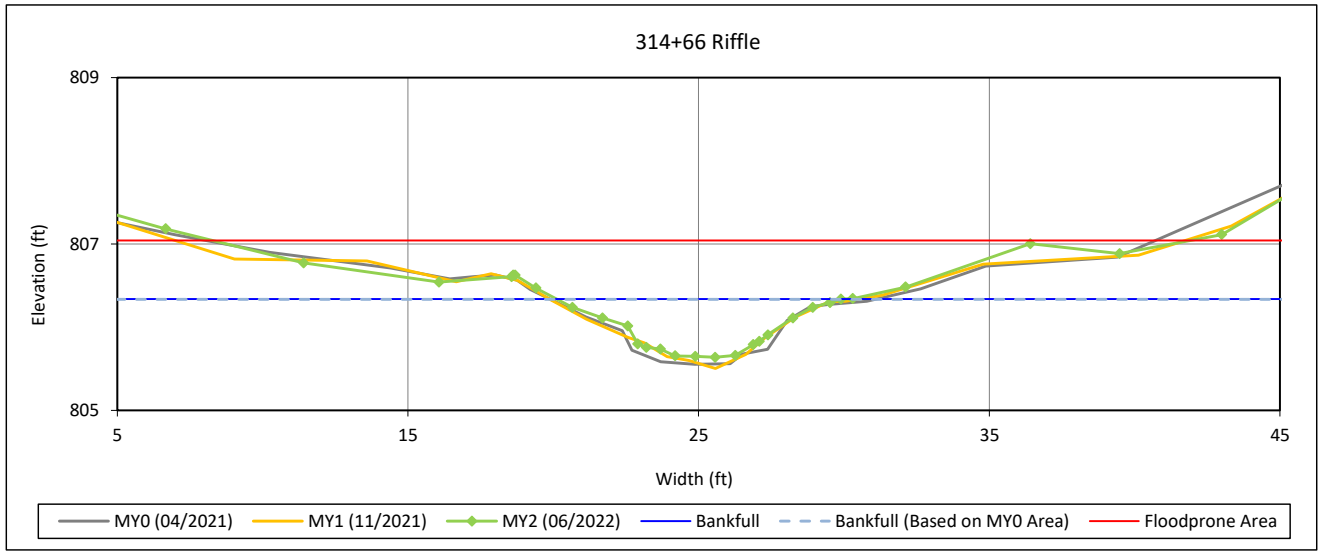
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 9 - UT2 R3



Bankfull Dimensions	
3.9	x-section area (ft.sq.)
9.8	width (ft)
0.4	mean depth (ft)
0.7	max depth (ft)
9.9	wetted perimeter (ft)
0.4	hydraulic radius (ft)
24.7	width-depth ratio
33.6	W flood prone area (ft)
3.4	entrenchment ratio
1.0	low bank height ratio

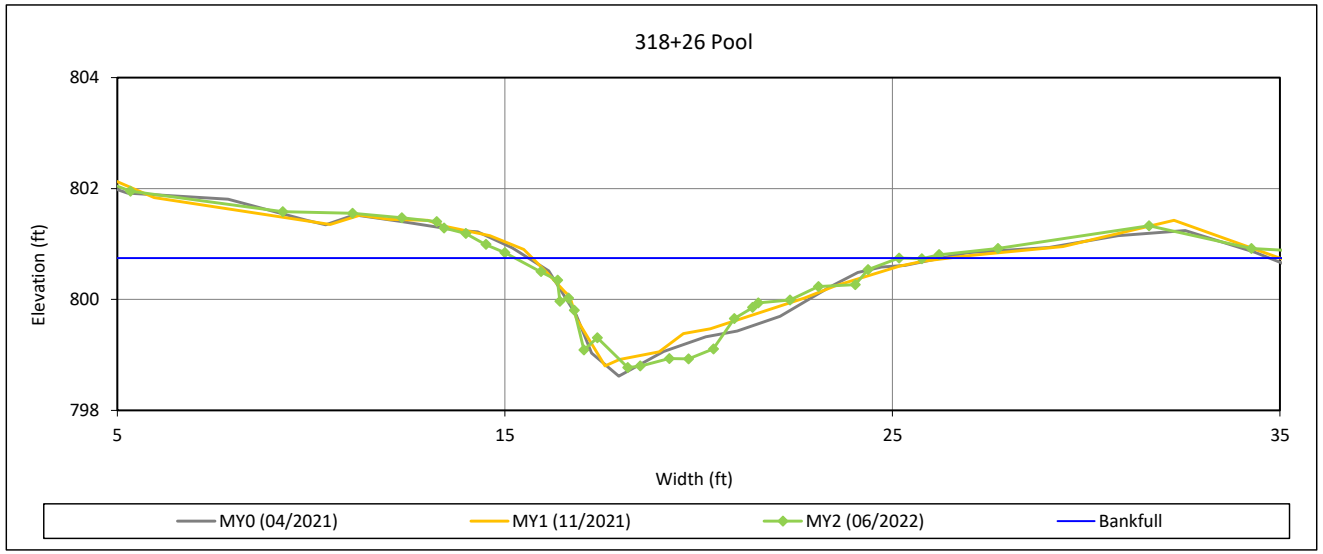
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 10-UT2 R2



Bankfull Dimensions	
9.9	x-section area (ft.sq.)
9.9	width (ft)
1.0	mean depth (ft)
2.0	max depth (ft)
11.7	wetted perimeter (ft)
0.8	hydraulic radius (ft)
9.9	width-depth ratio

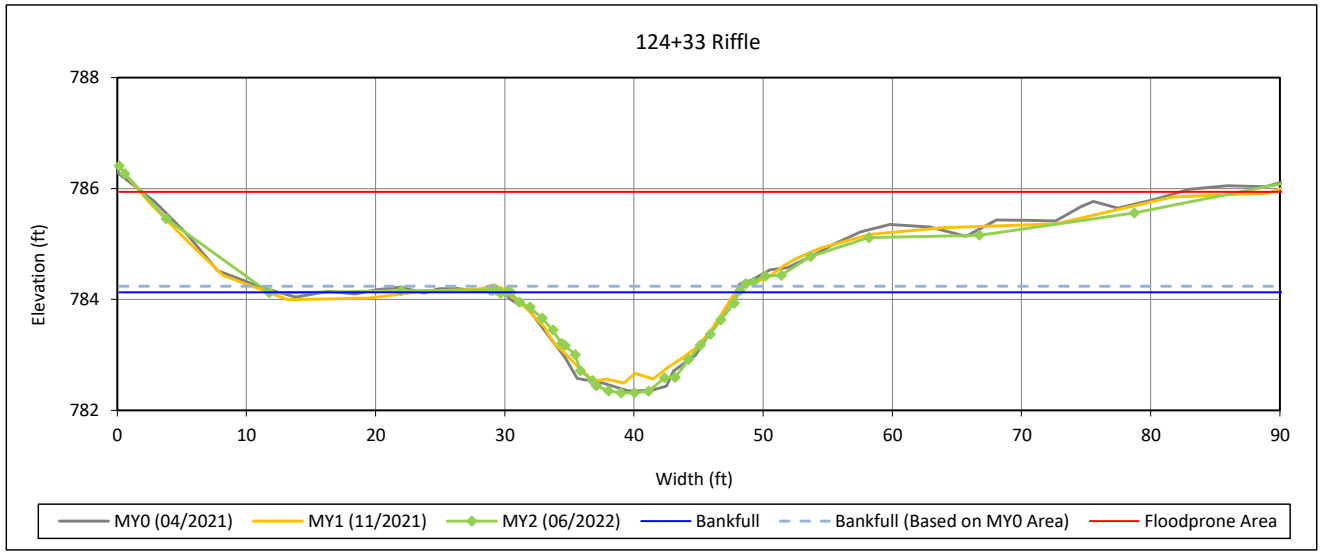
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 11-Wyant Creek R3



Bankfull Dimensions	
19.5	x-section area (ft.sq.)
17.7	width (ft)
1.1	mean depth (ft)
1.8	max depth (ft)
18.2	wetted perimeter (ft)
1.1	hydraulic radius (ft)
16.0	width-depth ratio
85.0	W flood prone area (ft)
4.8	entrenchment ratio
< 1.0	low bank height ratio

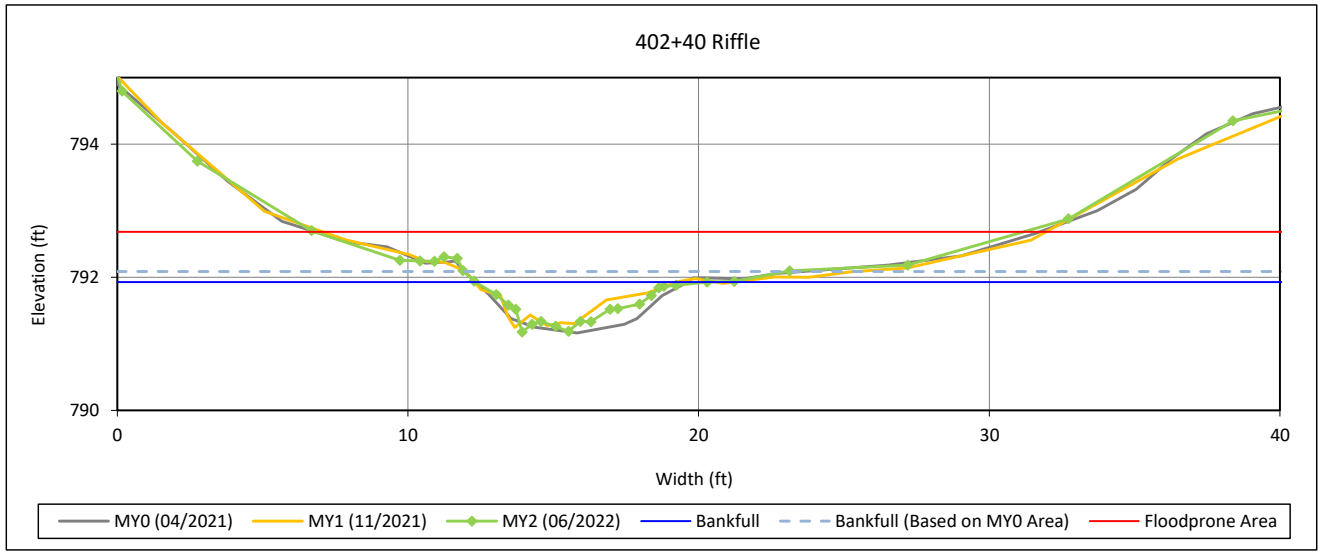
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 12-UT3 R1



Bankfull Dimensions	
2.9	x-section area (ft.sq.)
8.0	width (ft)
0.4	mean depth (ft)
0.8	max depth (ft)
8.4	wetted perimeter (ft)
0.3	hydraulic radius (ft)
22.2	width-depth ratio
24.3	W flood prone area (ft)
3.1	entrenchment ratio
< 1.0	low bank height ratio

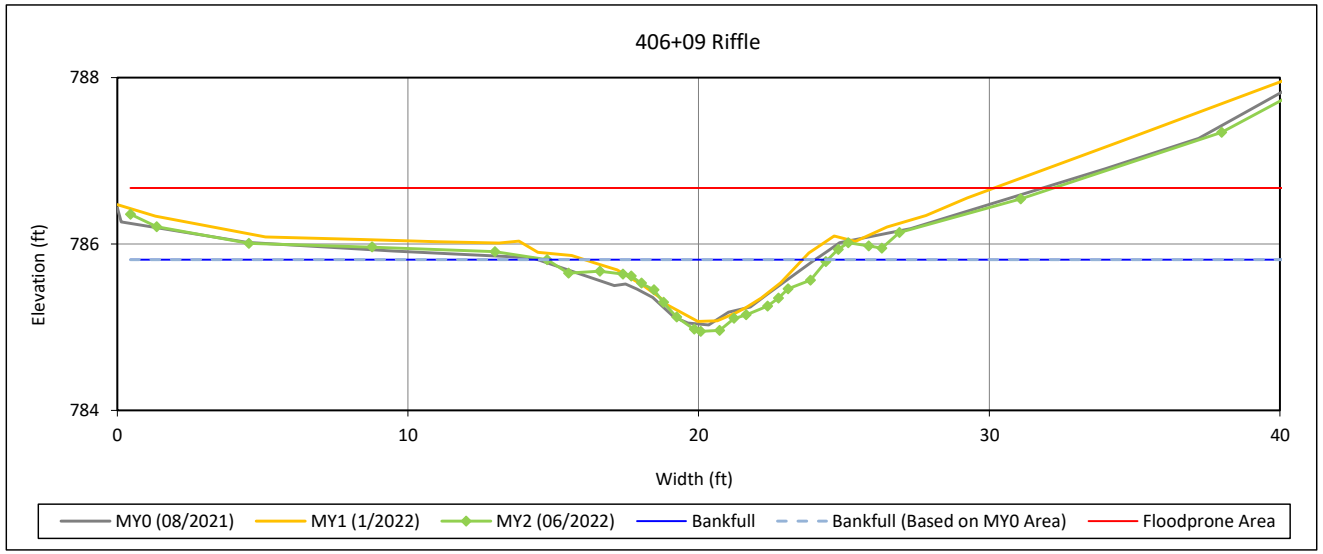
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 13-UT3 R2



Bankfull Dimensions	
4.0	x-section area (ft.sq.)
9.7	width (ft)
0.4	mean depth (ft)
0.9	max depth (ft)
9.9	wetted perimeter (ft)
0.4	hydraulic radius (ft)
23.4	width-depth ratio
31.8	W flood prone area (ft)
3.3	entrenchment ratio
1.0	low bank height ratio

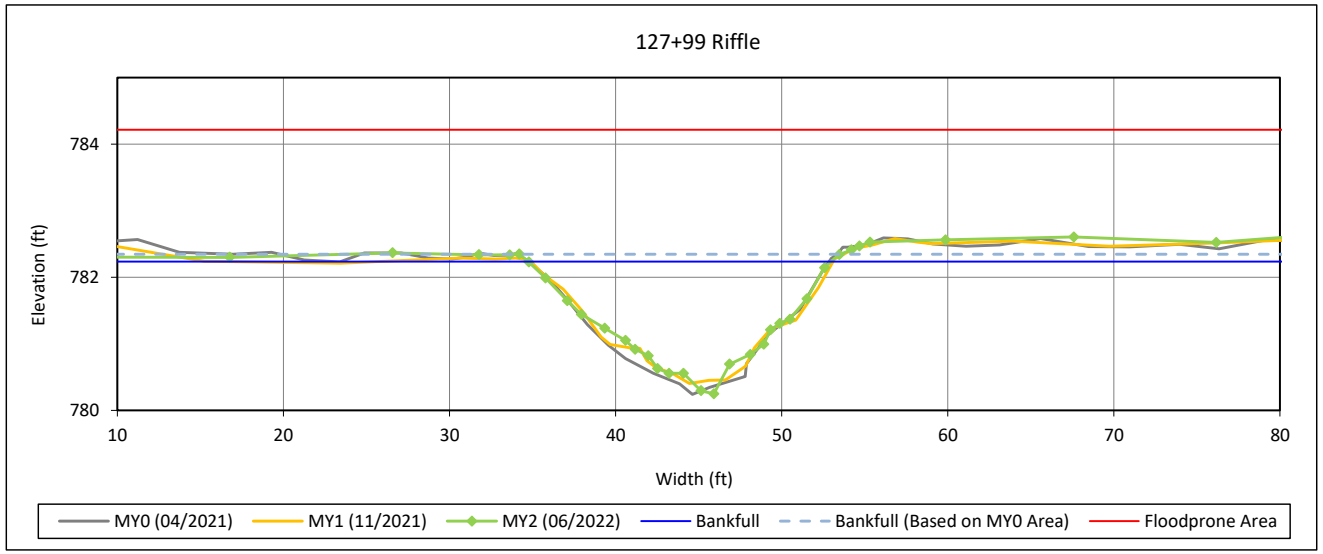
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 14-Wyant Creek R4



Bankfull Dimensions	
19.7	x-section area (ft.sq.)
18.2	width (ft)
1.1	mean depth (ft)
2.0	max depth (ft)
18.8	wetted perimeter (ft)
1.1	hydraulic radius (ft)
16.8	width-depth ratio
93.8	W flood prone area (ft)
5.2	entrenchment ratio
< 1.0	low bank height ratio

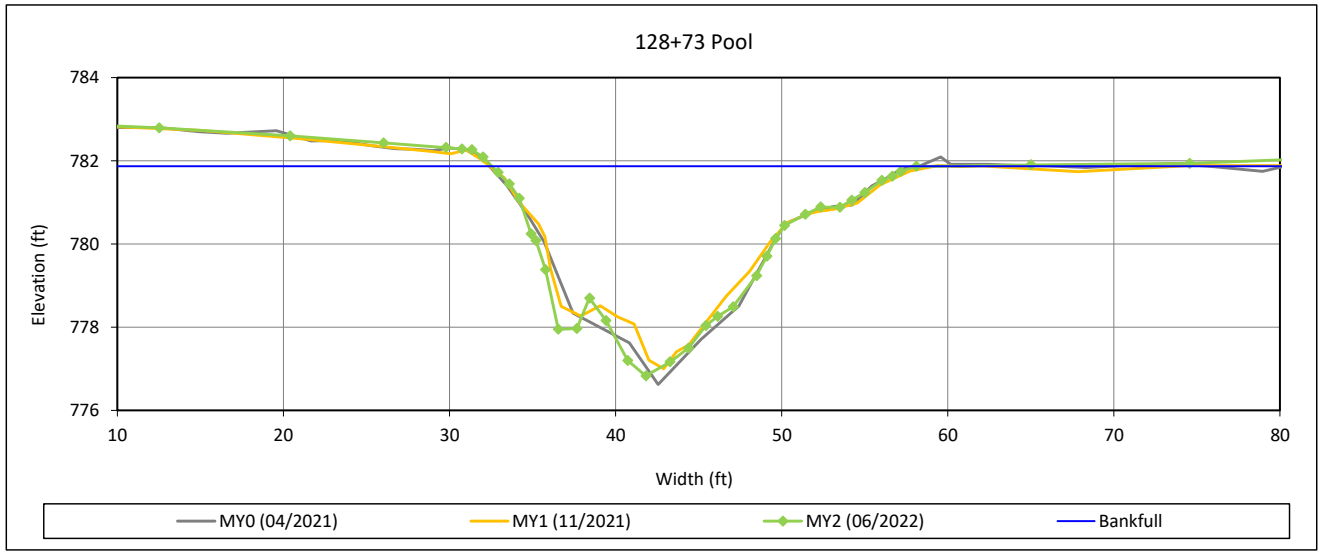
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 15-Wyant Creek R4



Bankfull Dimensions	
62.5	x-section area (ft.sq.)
25.5	width (ft)
2.4	mean depth (ft)
5.0	max depth (ft)
29.2	wetted perimeter (ft)
2.1	hydraulic radius (ft)
10.4	width-depth ratio

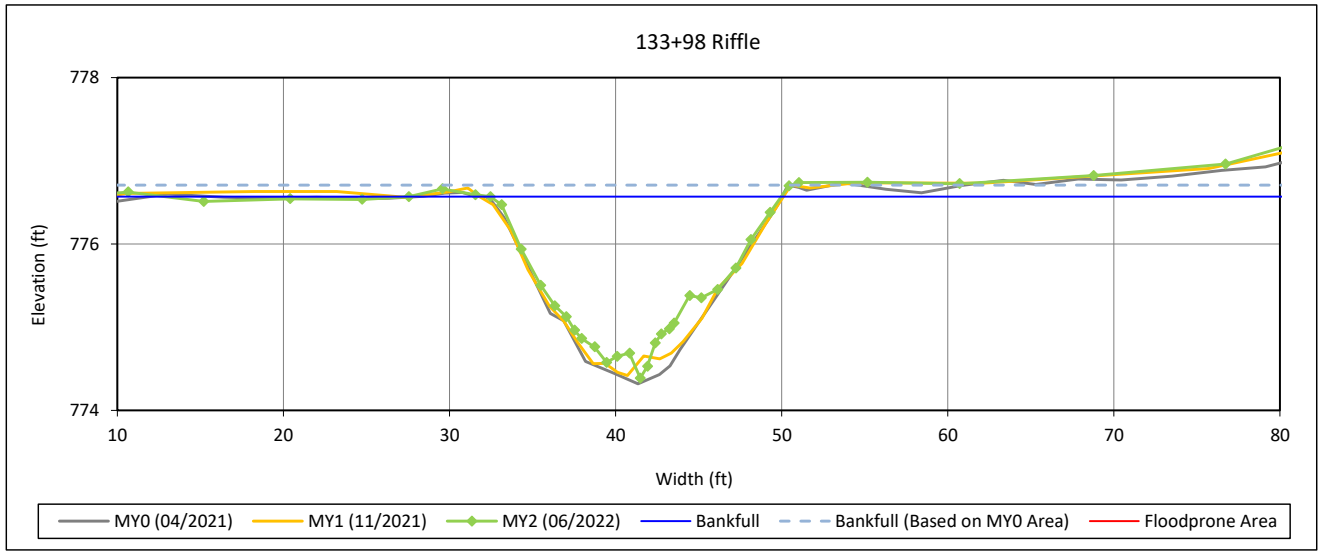
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 16 - Wyant Creek R4



Bankfull Dimensions	
20.7	x-section area (ft.sq.)
17.5	width (ft)
1.2	mean depth (ft)
2.2	max depth (ft)
18.2	wetted perimeter (ft)
1.1	hydraulic radius (ft)
14.8	width-depth ratio
81.7	W flood prone area (ft)
4.7	entrenchment ratio
< 1.0	low bank height ratio

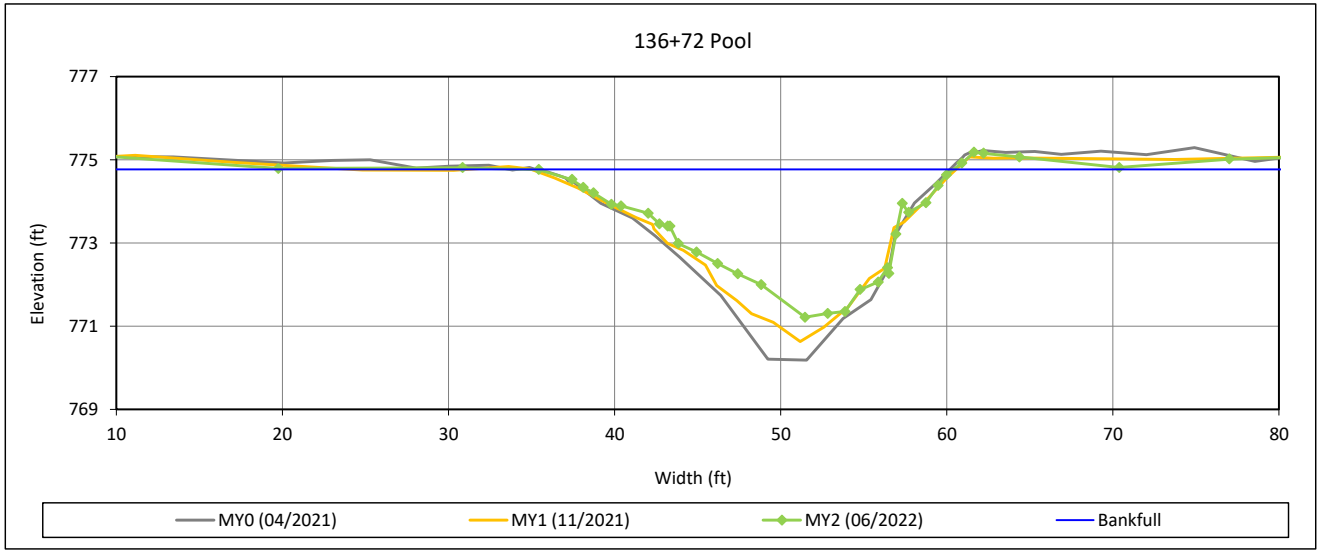
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 17 - Wyant Creek R4



Bankfull Dimensions	
44.8	x-section area (ft.sq.)
25.0	width (ft)
1.8	mean depth (ft)
3.5	max depth (ft)
27.1	wetted perimeter (ft)
1.6	hydraulic radius (ft)
13.9	width-depth ratio

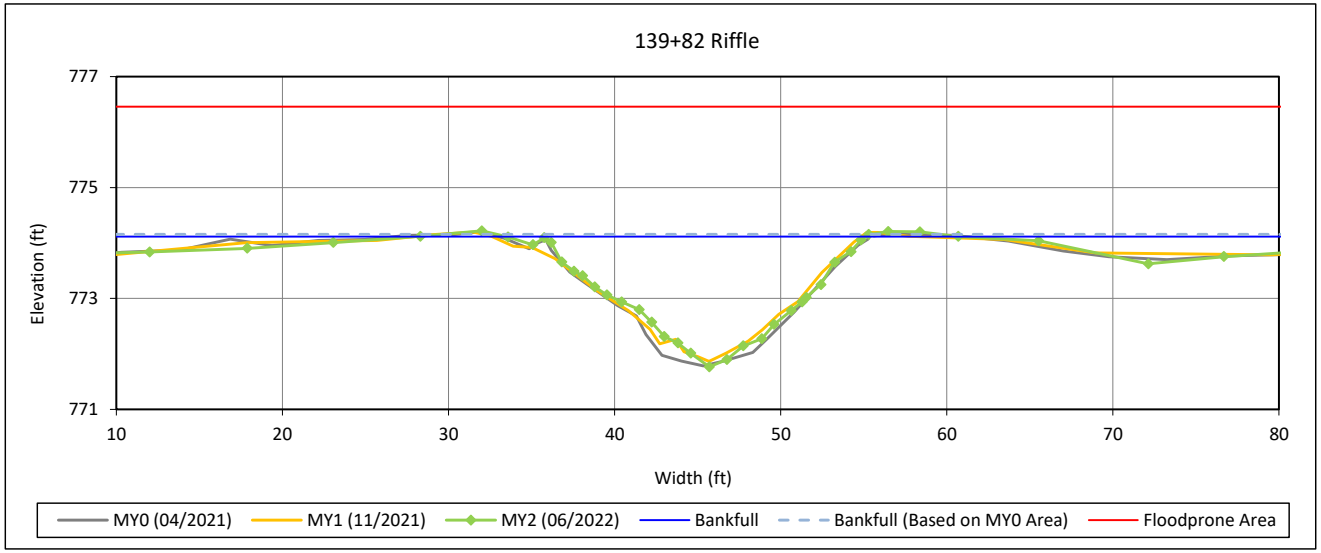
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 18 - Wyant Creek R4



Bankfull Dimensions	
24.9	x-section area (ft.sq.)
21.5	width (ft)
1.2	mean depth (ft)
2.3	max depth (ft)
22.2	wetted perimeter (ft)
1.1	hydraulic radius (ft)
18.6	width-depth ratio
82.8	W flood prone area (ft)
3.8	entrenchment ratio
1.0	low bank height ratio

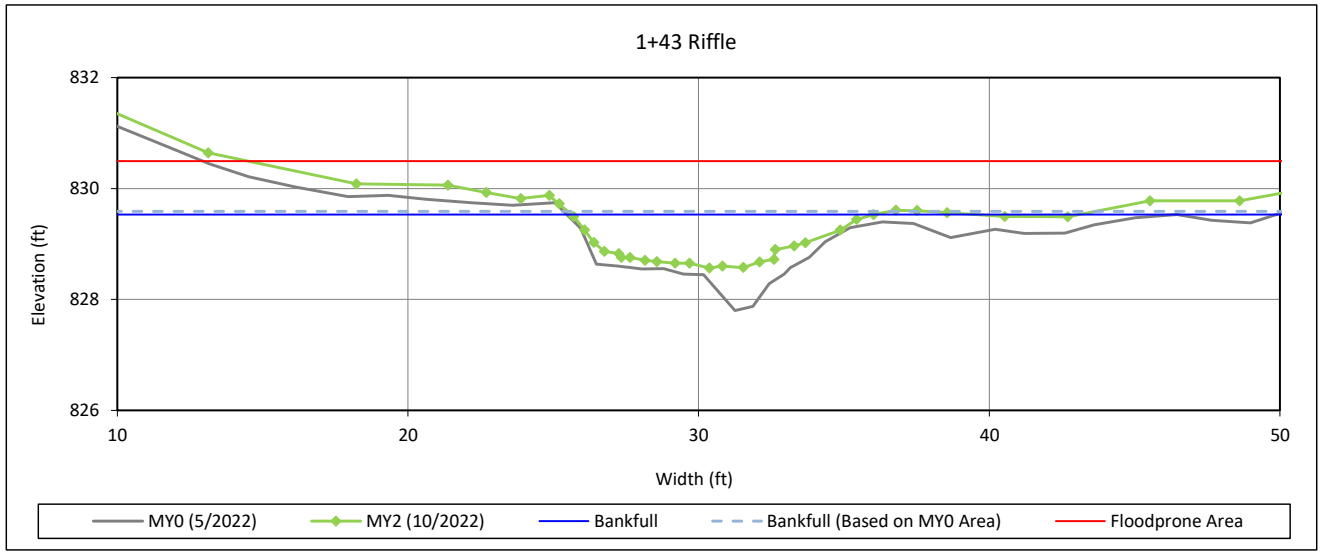
Survey Date: 06/2022
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 19 - UT2 R1



Bankfull Dimensions	
6.6	x-section area (ft.sq.)
10.4	width (ft)
0.6	mean depth (ft)
1.0	max depth (ft)
10.8	wetted perimeter (ft)
0.6	hydraulic radius (ft)
16.3	width-depth ratio
40.9	W flood prone area (ft)
3.9	entrenchment ratio
< 1.0	low bank height ratio

Survey Date: 10/2022
Field Crew: Wildlands Engineering

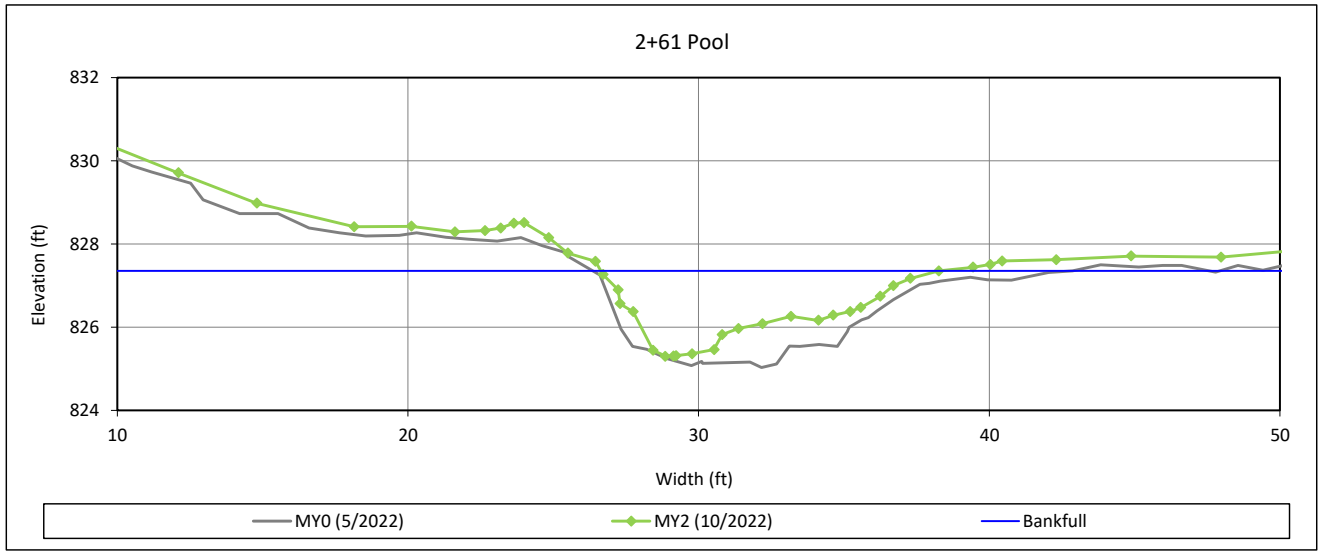
View Downstream

*Phase II monitoring components have been combined with Phase I to coincide with Phase I timeline.

Cross-Section Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Cross-Section 20 - UT2 R1



Bankfull Dimensions	
12.9	x-section area (ft.sq.)
11.6	width (ft)
1.1	mean depth (ft)
2.1	max depth (ft)
13.0	wetted perimeter (ft)
1.0	hydraulic radius (ft)
10.5	width-depth ratio

Survey Date: 10/2022
Field Crew: Wildlands Engineering

View Downstream

*Phase II monitoring components have been combined with Phase I to coincide with Phase I timeline.

Table 8. Baseline Stream Data Summary
Wyant Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

	Pre-Existing Condition																											
Parameter	**Wyant Creek R1**			**Wyant Creek R2**			**Wyant Creek R3**			**Wyant Creek R4**			**UT1**			**UT2 R1**			**UT2 R3**			**UT3 R1**			**UT3 R2**		
	Min	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**
Dimension and Substrate - Riffle																												
Bankfull Width (ft)	11.1		1	10.8		1	17.9		1	17.1		1	1.5		1	8.3		1	5.9		1	-		N/A	6.1		1
Floodprone Width (ft)	18.9		1	15.4		1	15.6		1	-		1	8.1		1	19.6		1	11.0		1	-		N/A	18.8		1
Bankfull Mean Depth (ft)	1.1		1	0.9		1	1.5		1	1.2		1	0.4		1	0.6		1	0.7		1	-		N/A	0.7		1
Bankfull Max Depth (ft)	1.7		1	1.3		1	1.9		1	1.5		1	0.3		1	0.9		1	0.9		1	-		N/A	1.2		1
Bankfull Cross-sectional Area (ft^2)	11.1		1	10.8		1	17.9		1	17.1		1	1.5		1	5.0		1	5.9		1	-		N/A	6.1		1
Width/Depth Ratio	9.3		1	12.5		1	7.8		1	12.6		1	13.4		1	13.8		1	12.8		1	-		N/A	12.9		1
Entrenchment Ratio[1]	1.9		1	1.3		1	1.3		1	-		1	1.8		1	2.4		1	1.3		1	-		N/A	2.1		1
Bank Height Ratio	2.7		1	3.2		1	3.0		1	2.4		1	6.0		1	2.0		1	4.7		1	-		N/A	3.3		1
Max part size (mm) mobilized at bankfull	-		N/A	-		N/A	-		N/A	-		N/A	-		N/A	-		N/A	-		N/A	-		N/A	-		N/A
Rosgen Classification	G5		1	G5		1	G5		1	G5		1	C5/4		1	C4b		1	G4		1	-		N/A	G5		1
Bankfull Discharge (cfs)	3.8		1	3.0		1	3.3		1	4.1		1	2.6		1	16.8		1	3.7		1	-		N/A	4.0		1
Sinuosity	1.2		1	1.2		1	1.1		1	1.1		1	1.0		1	1.2		1	1.2		1	-		N/A	1.1		1
Bankfull/Channel Slope (ft/ft)[2]	0.0110		1	0.0075		1	0.0057		1	0.0048		1	0.0100		1	0.0167		1	0.0190		1	-		N/A	0.0210		1
	Design																											
Parameter	**Wyant Creek R1**			**Wyant Creek R2**			**Wyant Creek R3**			**Wyant Creek R4**			**UT1**			**UT2 R1**			**UT2 R3**			**UT3 R1**			**UT3 R2**		
	Min	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**
Dimension and Substrate - Riffle																												
Bankfull Width (ft)	12.9		1	13.8		1	17.7		1	19.6		1	4.9		1	9.3		1	9.3		1	7.7		1	7.7		1
Floodprone Width (ft)	39.0	65.0	2	30.0	69.0	2	39.0	89.0	2	43.0	98.0	2	11.0	25.0	2	-		-	13.0	47.0	2	17.0	39.0	2	17.0	39.0	2
Bankfull Mean Depth (ft)	1.0		1	1.0		1	1.3		1	1.4		1	0.3		1	0.7		1	0.7		1	0.6		1	0.6		1
Bankfull Max Depth (ft)	1.2	1.6	2	1.3	1.7	2	1.5	2.0	2	1.7	2.2	2	0.4	0.6	2	1.0		1	0.8	1.1	2	0.7	1.0	2	0.7	1.0	2
Bankfull Cross-sectional Area (ft^2)	12.6		1	14.4		1	22.2		1	27.2		1	1.7		1	6.8		1	6.6		1	4.7		1	4.7		1
Width/Depth Ratio	13.0		1	13.0		1	14.0		1	14.0		1	14.0		1	13.0		1	13.0		1	12.0		1	12.0		1
Entrenchment Ratio[1]	3.0	5.0	2	2.2	5.0	2	2.2	5.0+	2	2.2	5.0+	2	2.2	5.0	2	>1.4	5.0	2	1.4	5.0	2	2.2	5.0	2	2.2	5.0	2
Bank Height Ratio	1.0	1.1	2	1.0	1.1	2	1.0	1.1	2	1.0	1.1	2	1.0	1.1	2	1.0	1.1	2	1.0	1.1	2	1.0	1.1	2	1.0	1.1	2
Max part size (mm) mobilized at bankfull	36	88	2	27	72	2	25	69	2	17	52	2	27	73	2	-		-	25	69	2	-		N/A	48	108	2
Rosgen Classification	C4		1	C4		1	C4		1	C4		1	C4b		1	Bc		1	B4		1	C4b		1	C4b		1
Bankfull Discharge (cfs)	43.0		1	45.0		1	70.0		1	72.0		1	4.0		1	26.0		1	26.0		1	17.0		1	17.0		1
Sinuosity	1.2		1	1.2		1	1.2		1	1.3		1	1.2		1	1.1		1	1.1		N/A	1.2		N/A	1.2		N/A
Bankfull/Channel Slope (ft/ft)[2]	0.0088	0.0095	2	0.0059	0.0064	2	0.0050	0.0117	2	0.0029	0.0031	2	0.0188	0.0225	2	0.0190		1	0.0182	0.0200	2	0.0206	0.0247	2	0.0207	0.0248	2
	As-Built/ Baseline																											
Parameter	**Wyant Creek R1**			**Wyant Creek R2**			**Wyant Creek R3**			**Wyant Creek R4**			**UT1**			**UT2 R1**			**UT2 R3**			**UT3 R1**			**UT3 R2**		
	Min	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**	**Min**	**Max**	**n**
Dimension and Substrate - Riffle																												
Bankfull Width (ft)	10.8	12.7	2	14.0		1	18.0		1	17.5	19.3	3	5.2		1	9.3		1	8.8		1	7.6		1	9.8		1
Floodprone Width (ft)	50.7	55.9	2	59.1		1	87.8		1	81.8	93.8	3	39.2		1	43.9		1	31.0		1	26.8		1	31.5		1
Bankfull Mean Depth (ft)	0.8	1.0	2	0.9		1	1.2		1	1.2	1.3	3	0.3		1	0.8		1	0.4		1	0.5		1	0.4		1
Bankfull Max Depth (ft)	1.5		2	1.7		1	1.9		1	2.0	2.3	3	0.5		1	1.5		1	0.7		1	0.8		1	0.8		1
Bankfull Cross-sectional Area (ft^2)[1]	10.3	10.6	2	12.9		1	21.5		1	21.7	25.9	3	1.6		1	7.2		1	3.8		1	4.2		1	4.0		1
Width/Depth Ratio	11.3	15.2	2	15.1		1	15.0		1	13.3	15.3	3	16.8		1	12.0		1	20.4		1	14.0		1	24.4		1
Entrenchment Ratio[1]	4.0	5.2	2	4.2		1	4.9		1	4.3	5.1	3	7.6		1	4.7		1	3.5		1	3.5		1	3.2		1
Bank Height Ratio	1.0		2	1.0		1	1.0		1	1.0		3	1.0		1	1.0		1	1.0		1	1.0		1	1.0		1
Max part size (mm) mobilized at bankfull	1.1		1	2.0		1	13.3		1	0.9		1	1.0		1	-		-	37.9		1	19.0		1	35.9		1
Rosgen Classification	C4			C4			C4			C4			C4b			Bc			B4			C4b			C4b		
Bankfull Discharge (cfs)	25.8	28.7	2	51.1		1	49.5		1	70.7	84.4	2	3.27		1	25.1		1	11.1		1	14.3		1	9.9		1
Sinuosity	1.24		1	1.19		1	1.12		1	1.25		1	1.21		1	1.10		1	1.09		1	1.20		1	1.20		1
Bankfull/Channel Slope (ft/ft)[2]	0.0061		1	0.013		1	0.003		1	0.006		1	0.015		1	0.0180		1	0.021		1	0.021		1	0.015		1

1. ER for the baseline/monitoring parameters are based on the width of the cross-section, in lieu of assuming the width across the floodplain.
(---): Data was not provided, N/A: Not Applicable

Table 9a. Cross-Section Morphology Monitoring Summary

Wyant Lands Mitigation Site

DMS Project No. 100067

Monitoring Year 2 - 2022

	Wyant Creek R1 Cross Section 1 Riffle								Wyant Creek R1 Cross Section 2 Pool								Wyant Creek R1 Cross Section 3 Riffle							
Dimension and Substrate	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**
Bankfull Elevation (ft) - Based on AB-Bankfull[1] Area	798.56	798.60	798.69						798.24	N/A	N/A						797.30	797.34	797.51					
Bank Height Ratio - Based on AB Bankfull[1] Area	1.0	1.0	1.0						N/A	N/A	N/A						1.0	1.0	<1.0					
Thalweg Elevation (ft)	797.05	797.15	797.08						794.01	793.94	794.23						795.76	795.75	795.98					
LTOB[2] Elevation (ft)	798.56	798.63	798.64						798.24	798.25	798.24						797.30	797.39	797.36					
LTOB[2] Max Depth (ft)	1.5	1.5	1.6						4.2	4.3	4.5						1.5	1.6	1.4					
LTOB[2] Cross Sectional Area (ft^2)	10.6	11.0	9.9						25.5	26.2	24.8						10.3	10.8	8.6					
	Wyant Creek R1 Cross Section 4 Pool								**UT1 Cross Section 5 Riffle**								**UT1 Cross Section 6 Pool**							
Dimension and Substrate	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**
Bankfull Elevation (ft) - Based on AB-Bankfull[1] Area	794.30	N/A	N/A						798.18	798.22	798.18						797.15	N/A	N/A					
Bank Height Ratio - Based on AB Bankfull[1] Area	N/A	N/A	N/A						1.0	1.0	1.0						N/A	N/A	N/A					
Thalweg Elevation (ft)	791.06	791.25	791.03						797.69	797.64	797.57						795.69	795.73	795.76					
LTOB[2] Elevation (ft)	794.30	794.25	794.25						798.18	798.22	798.15						797.15	797.15	797.17					
LTOB[2] Max Depth (ft)	3.2	3.0	3.2						0.5	0.6	0.6						1.5	1.4	1.4					
LTOB[2] Cross Sectional Area (ft^2)	24.7	24.6	25.9						1.6	1.6	1.5						5.6	5.2	5.9					
	Wyant Creek R2 Cross Section 7 Pool								**Wyant Creek R2 Cross Section 8 Riffle**								**UT2 R3 Cross Section 9 Riffle**							
Dimension and Substrate	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**
Bankfull Elevation (ft) - Based on AB-Bankfull[1] Area	791.51	N/A	N/A						790.54	790.56	790.65						806.26	806.28	806.33					
Bank Height Ratio - Based on AB Bankfull[1] Area	N/A	N/A	N/A						1.0	1.0	<1.0						1.0	1.0	1.0					
Thalweg Elevation (ft)	789.13	788.94	788.99						788.88	788.90	788.93						805.55	805.50	805.64					
LTOB[2] Elevation (ft)	791.51	791.50	791.60						790.54	790.54	790.53						806.26	806.31	806.34					
LTOB[2] Max Depth (ft)	2.4	2.6	2.6						1.7	1.6	1.6						0.7	0.8	0.7					
LTOB[2] Cross Sectional Area (ft^2)	18.9	18.1	19.8						12.9	12.6	11.1						3.8	4.0	3.9					
	UT2 R3 Cross Section 10 Pool								**Wyant Creek R3 Cross Section 11 Riffle**															
Dimension and Substrate	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**								
Bankfull Elevation (ft) - Based on AB-Bankfull[1] Area	800.58	N/A	N/A						784.20	784.30	784.24													
Bank Height Ratio - Based on AB Bankfull[1] Area	N/A	N/A	N/A						1.0	< 1.0	<1.0													
Thalweg Elevation (ft)	798.62	798.80	798.77						782.35	782.49	782.31													
LTOB[2] Elevation (ft)	800.58	800.60	800.75						784.20	784.19	784.13													
LTOB[2] Max Depth (ft)	2.0	1.8	2.0						1.9	1.7	1.8													
LTOB[2] Cross Sectional Area (ft^2)	8.6	8.1	9.9						21.5	19.4	19.5													

[1]Bank Height Ratio (BHR) takes the As-built bankful area as the basis for adjusting each subsequent years bankfull elevation.

[2]LTOB Area and Max depth - These are based on the LTOB elevation for each years survey (The same elevation used for the LTOB in the BHR calculation). Area below the LTOB elevation will be used and tracked for each year as above. The difference between the LTOB elevation and the thalweg elevation (same as in the BHR calculation) will be recorded and tracked above as LTOB max depth.

Table 9b. Cross-Section Morphology Monitoring Summary

Wyant Lands Mitigation Site

DMS Project No. 100067

Monitoring Year 2 - 2022

	UT3 R1 Cross Section 12 Riffle								UT3 R2 Cross Section 13 Riffle								Wyant Creek R4 Cross Section 14 Riffle							
Dimension and Substrate	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**
Bankfull Elevation (ft) - Based on AB-Bankfull[1] Area	791.99	792.15	792.09						785.83	785.92	785.81						782.26	782.32	782.34					
Bank Height Ratio - Based on AB Bankfull[1] Area	1.0	<1.0	<1.0						1.0	1.0	1.0						1.0	1.0	<1.0					
Thalweg Elevation (ft)	791.16	791.24	791.18						785.03	785.07	784.95						780.24	780.40	780.25					
LTOB[2] Elevation (ft)	791.99	791.98	791.93						785.83	785.90	785.81						782.26	782.26	782.23					
LTOB[2] Max Depth (ft)	0.8	0.7	0.8						0.8	0.8	0.9						2.0	1.9	2.0					
LTOB[2] Cross Sectional Area (ft^2)	4.2	2.9	2.9						4.0	3.8	4.0						21.7	20.7	19.7					
	Wyant Creek R4 Cross Section 15 Pool								**Wyant Creek R4 Cross Section 16 Riffle**								**Wyant Creek R4 Cross Section 17 Pool**							
Dimension and Substrate	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**
Bankfull Elevation (ft) - Based on AB-Bankfull[1] Area	782.09	N/A	N/A						776.54	776.58	776.70						774.81	N/A	N/A					
Bank Height Ratio - Based on AB Bankfull[1] Area	N/A	N/A	N/A						1.0	1.0	<1.0						N/A	N/A	N/A					
Thalweg Elevation (ft)	776.62	777.00	776.83						774.30	774.42	774.39						770.18	770.63	771.21					
LTOB[2] Elevation (ft)	782.09	781.89	781.87						776.54	776.58	776.57						774.81	774.78	774.76					
LTOB[2] Max Depth (ft)	5.5	4.9	5.0						2.2	2.2	2.2						4.6	4.2	3.5					
LTOB[2] Cross Sectional Area (ft^2)	67.8	58.7	62.5						23.1	23.1	20.7						57.2	51.0	44.8					
	Wyant Creek R4 Cross Section 18 Riffle								**UT2 R1 Cross Section 19 Riffle**								**UT2 R1 Cross Section 20 Pool**							
Dimension and Substrate	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**
Bankfull Elevation (ft) - Based on AB-Bankfull[1] Area	774.06	774.15	774.16						829.30	---	829.58						827.03	---	N/A					
Bank Height Ratio - Based on AB Bankfull[1] Area	1.0	1.0	1.0						1.0	---	<1.0						N/A	---	N/A					
Thalweg Elevation (ft)	771.78	771.86	771.77						827.80	---	828.57						825.03	---	825.30					
LTOB[2] Elevation (ft)	774.06	774.12	774.11						829.30	---	829.53						827.03	---	827.35					
LTOB[2] Max Depth (ft)	2.3	2.3	2.3						1.5	---	1.0						2.0	---	2.1					
LTOB[2] Cross Sectional Area (ft^2)	25.9	25.3	24.9						7.2	---	6.6						14.8	---	12.9					

[1]Bank Height Ratio (BHR) takes the As-built bankful area as the basis for adjusting each subsequent years bankfull elevation.

[2]LTOB Area and Max depth - These are based on the LTOB elevation for each years survey (The same elevation used for the LTOB in the BHR calculation). Area below the LTOB elevation will be used and tracked for each year as above. The difference between the LTOB elevation and the thalweg elevation (same as in the BHR calculation) will be recroded and tracked above as LTOB max depth.

Appendix D

Hydrology Data

Table 10. Bankfull Events

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Reach	MY1 (2021)	MY2 (2022)	MY3 (2023)	MY4 (2024)	MY5 (2025)	MY6 (2026)	MY7 (2027)
Wyant Creek R2	---	5/26/2022, 7/31/2022					
UT2 R1	---	---					
UT2 R3	---	5/26/2022, 9/30/2022, 11/6/2022					

Table 11. Rainfall Summary

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

	MY1 (2021)*	MY2 (2022)‡	MY3 (2023)	MY4 (2024)	MY5 (2025)	MY6 (2026)	MY7 (2027)
Annual Preciptation Total (in)	37.20†	43.85§					
WETS 30th Percentile (in)	44.35	43.15					
WETS 70th Percentile (in)	51.57	52.92					
Normal	Below Normal	Normal					

* 30th and 70th percentile rainfall data collected from WETS Station NC4997: LINCOLNTON 4 W, NC for years 1971-2000.
† Updated to include entire calendar year.
‡ 30th and 70th percentile rainfall data collected from WETS Station NC4997: LINCOLNTON 4 W, NC for years 1971-prior year.
§ January - October 2022 rainfall data. Will be updated in MY3.

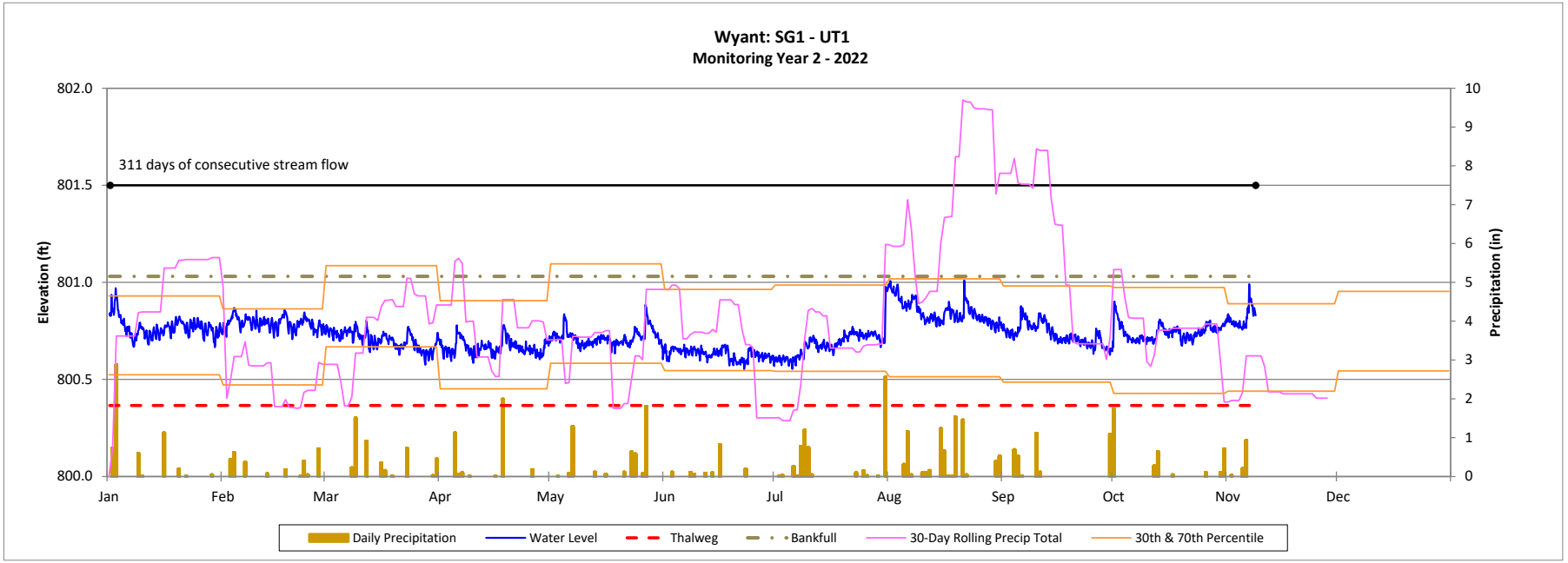
Table 12. Recorded In-Stream Flow Events Summary

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

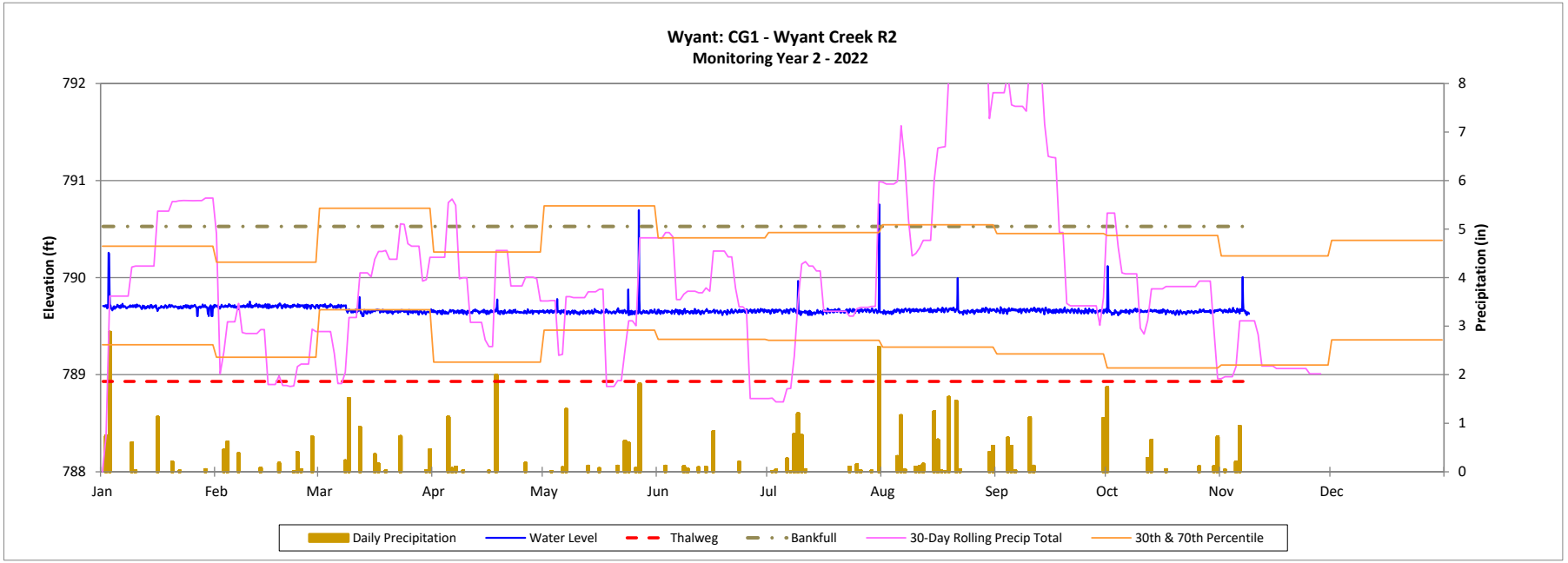
Reach	Max Consecutive Days/Total Days Meeting Success Criteria*						
	MY1 (2021)	MY2 (2022)†	MY3 (2023)	MY5 (2024)	MY5 (2025)	MY6 (2026)	MY7 (2027)
UT1	**222 Days/ 222 Days**	**311 Days/ 311 Days**					

*Success criteria is 30 consecutive days of flow.
†Data collected from January 1,2022 through November 8, 2022.

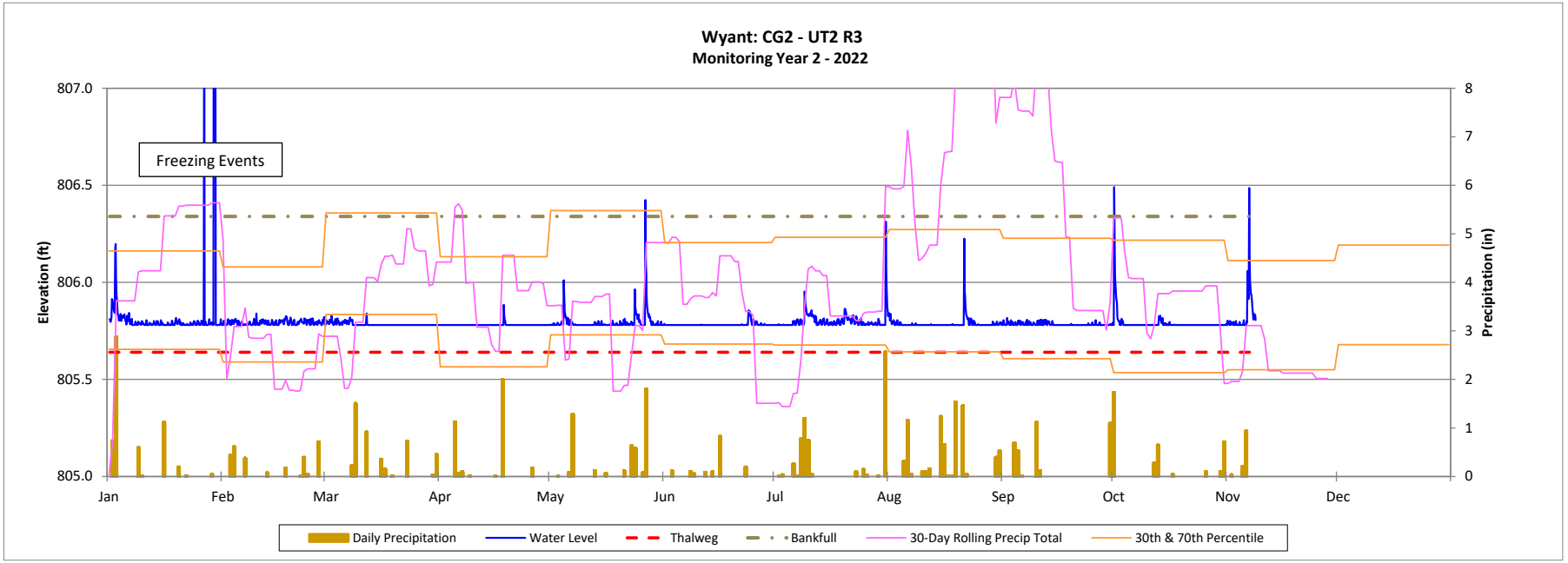
Recorded In-Stream Flow Events Plot
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022



Recorded In-Stream Flow Events Plot
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022



Recorded In-Stream Flow Events Plot
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022



Recorded In-Stream Flow Events Plot
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

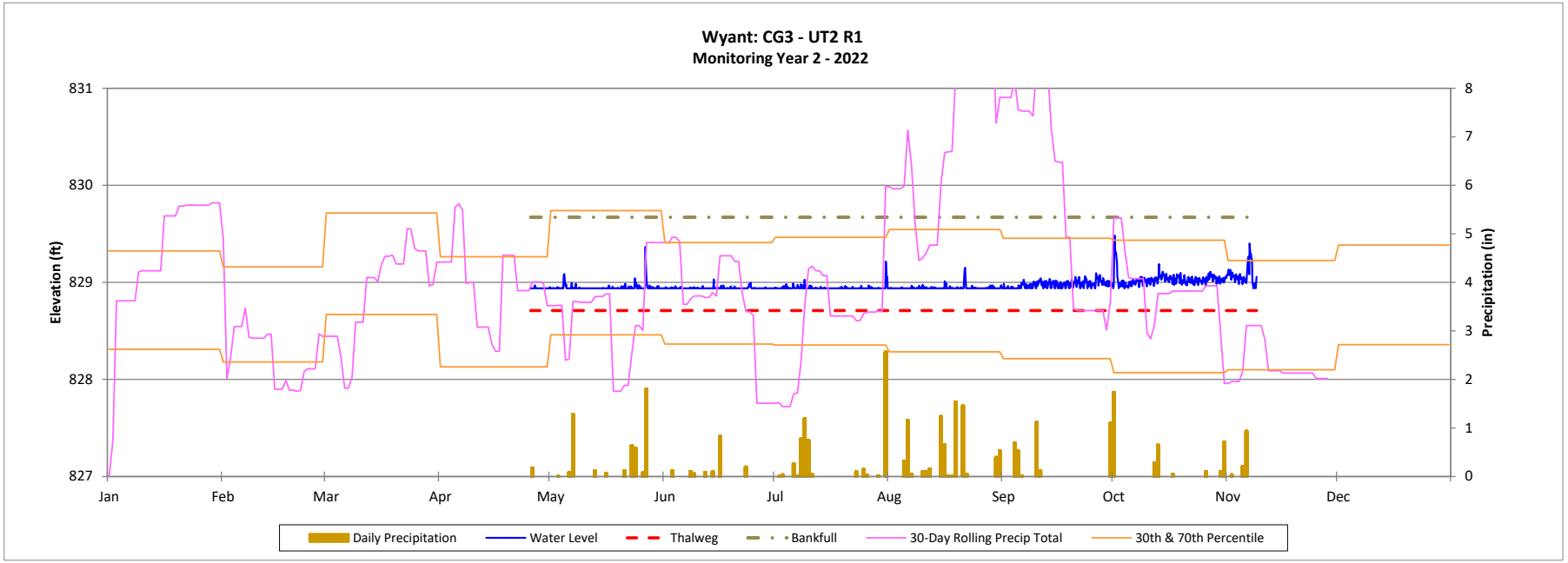


Table 13. Wetland Gage Summary

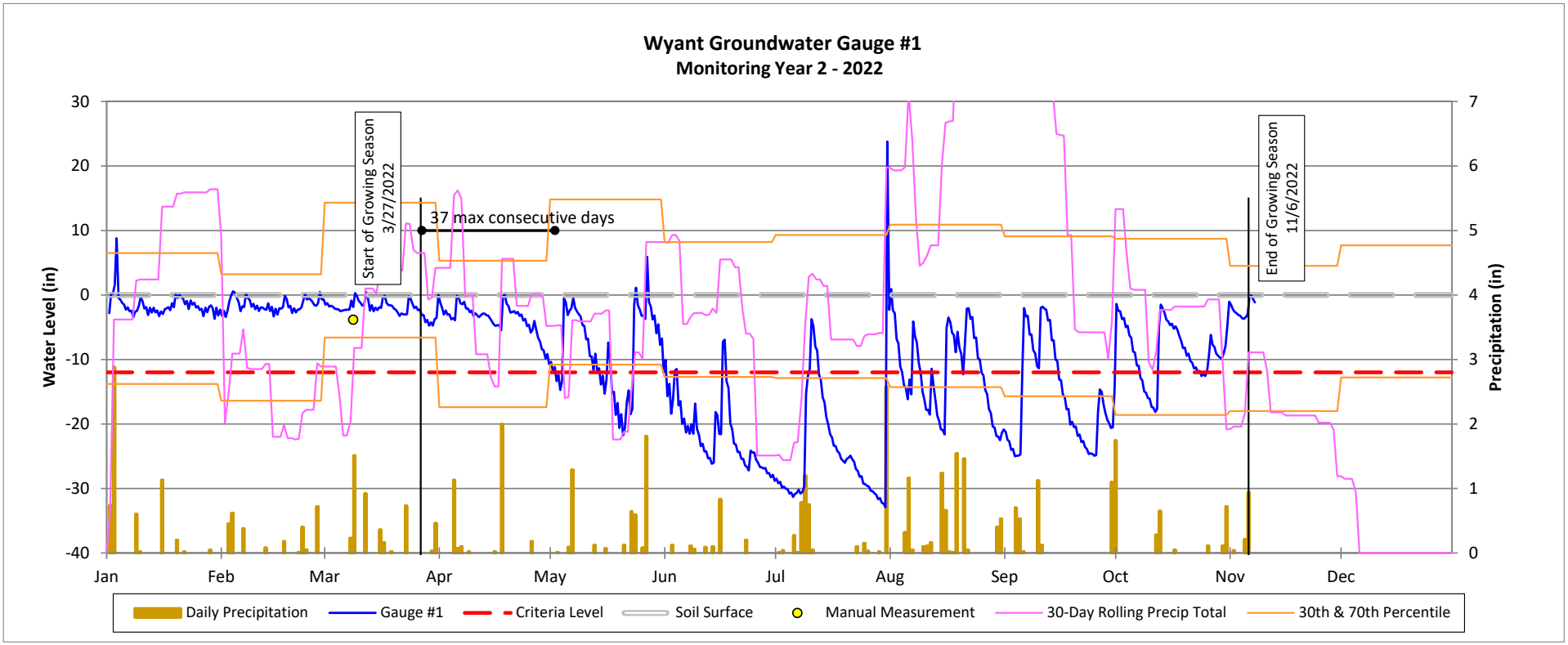
Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Gage	Max. Consecutive Hydroperiod (Percentage)						
	MY1 (2021)	MY2 (2022)	MY3 (2023)	MY4 (2024)	MY5 (2025)	MY6 (2026)	MY7 (2027)
1	13%	16%					
2	3%	14%					
3	8%	19%					
4	23%	34%					
5	34%	44%					
6	97%	100%					
7	23%	44%					
8	2%	15%					
9	21%	17%					
10	22%	24%					
11	97%	100%					
12	---	17%					
13	---	6%					
14	---	16%					
15	---	14%					

Performance Standard: 12.0% or 27 consecutive days.
WETS Station: NC 4997 Lincolnton 4W
Growing Season: 3/27/2022 to 11/6/2022 (225 Days)

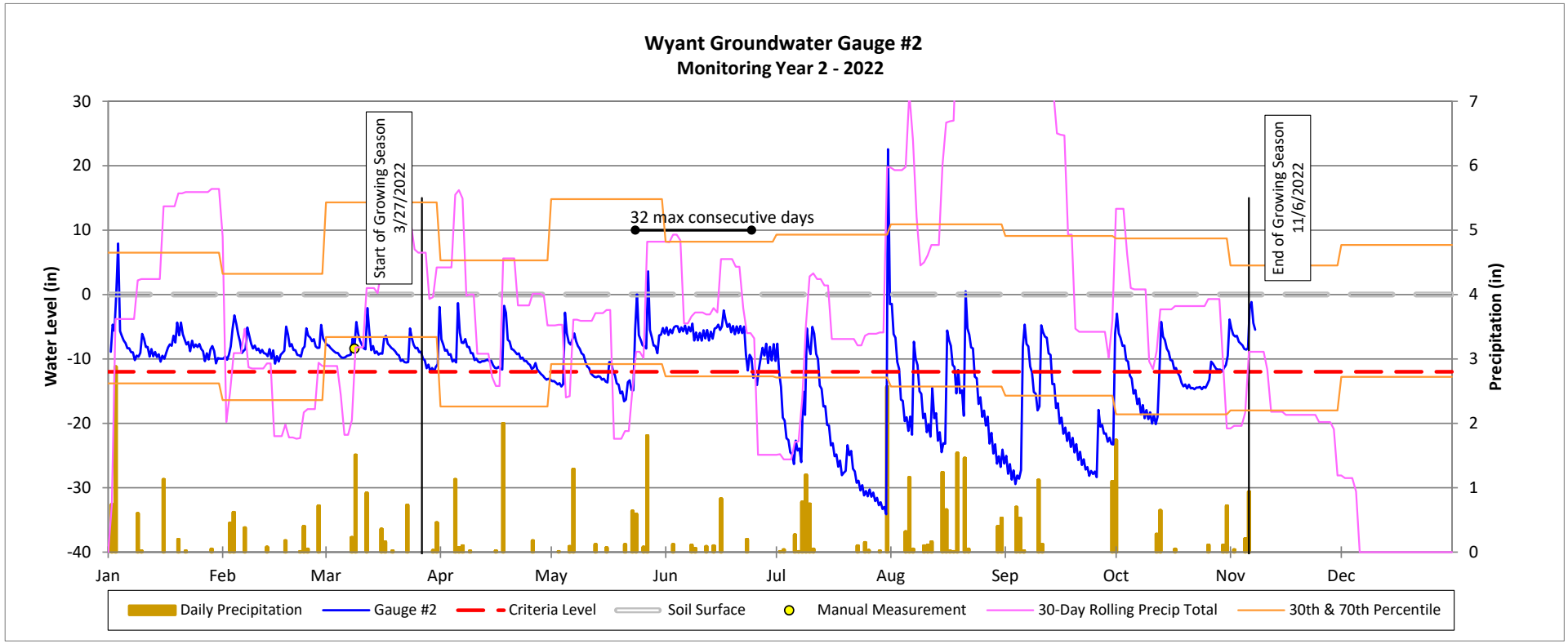
Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG1



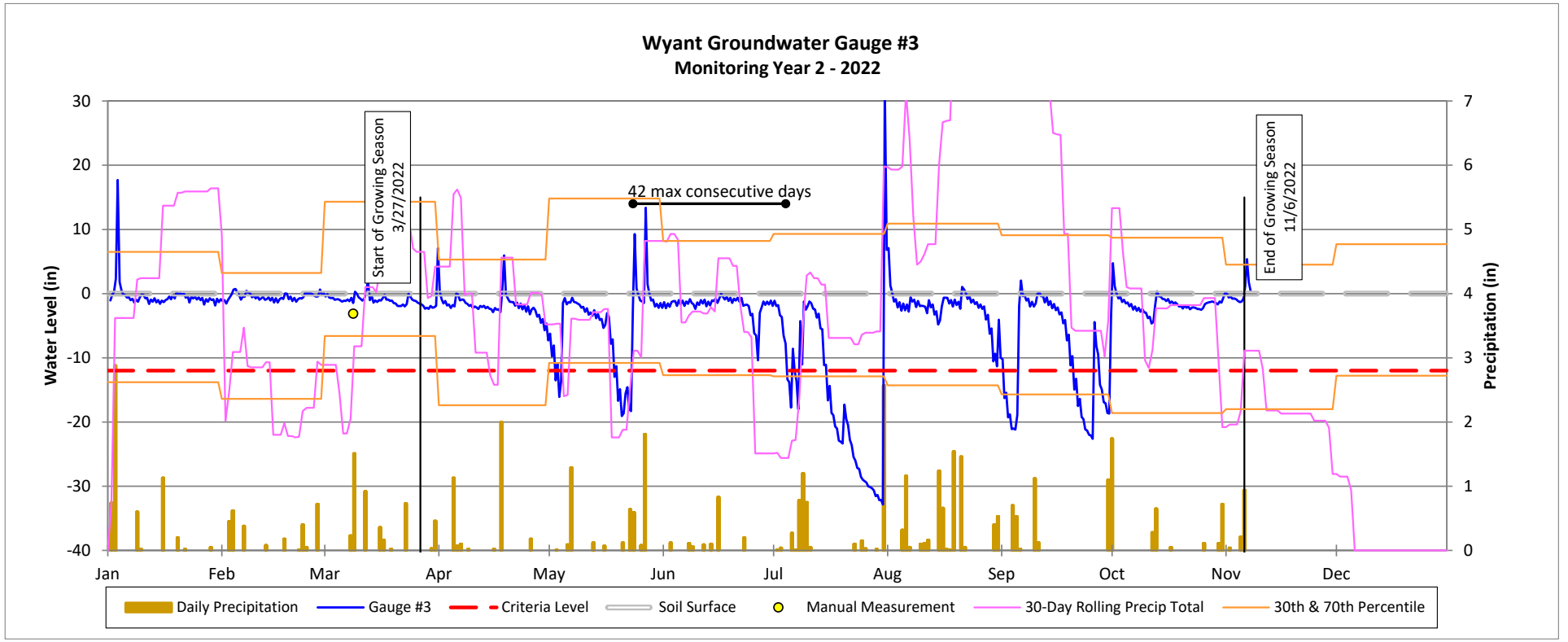
Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG2



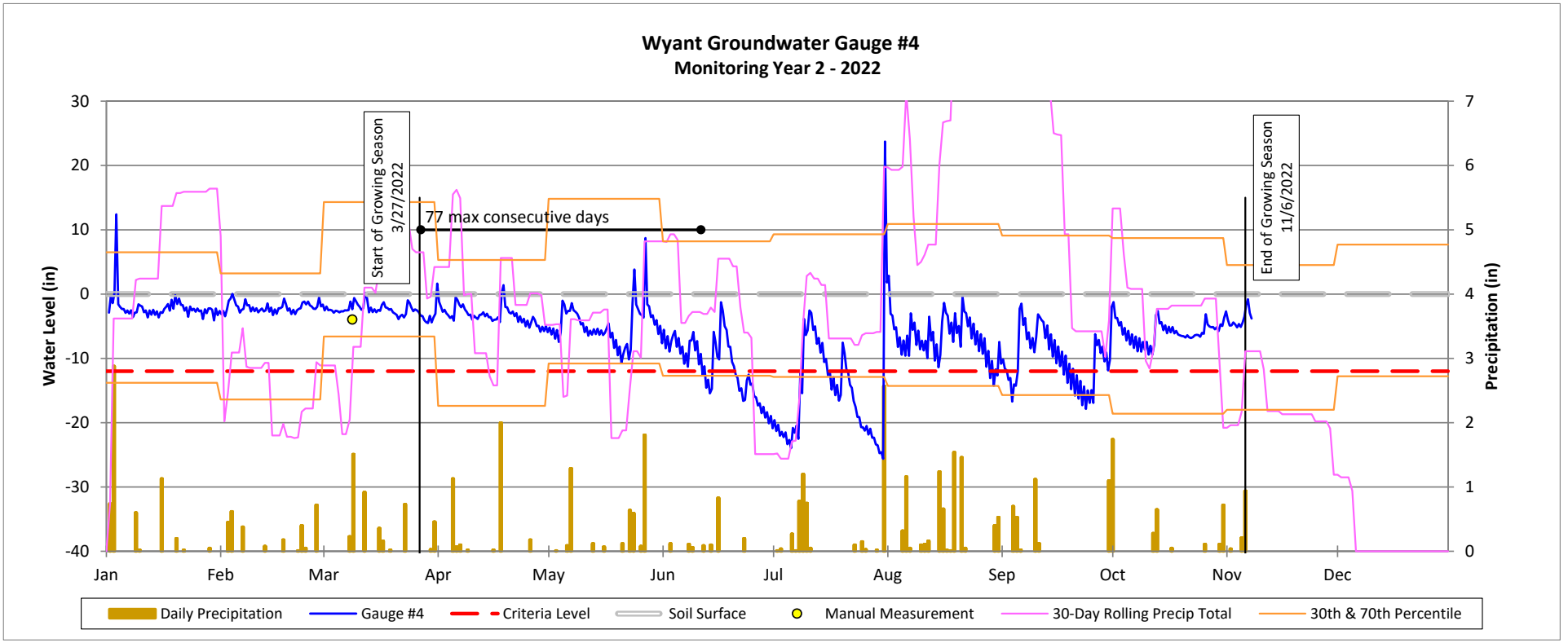
Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG3



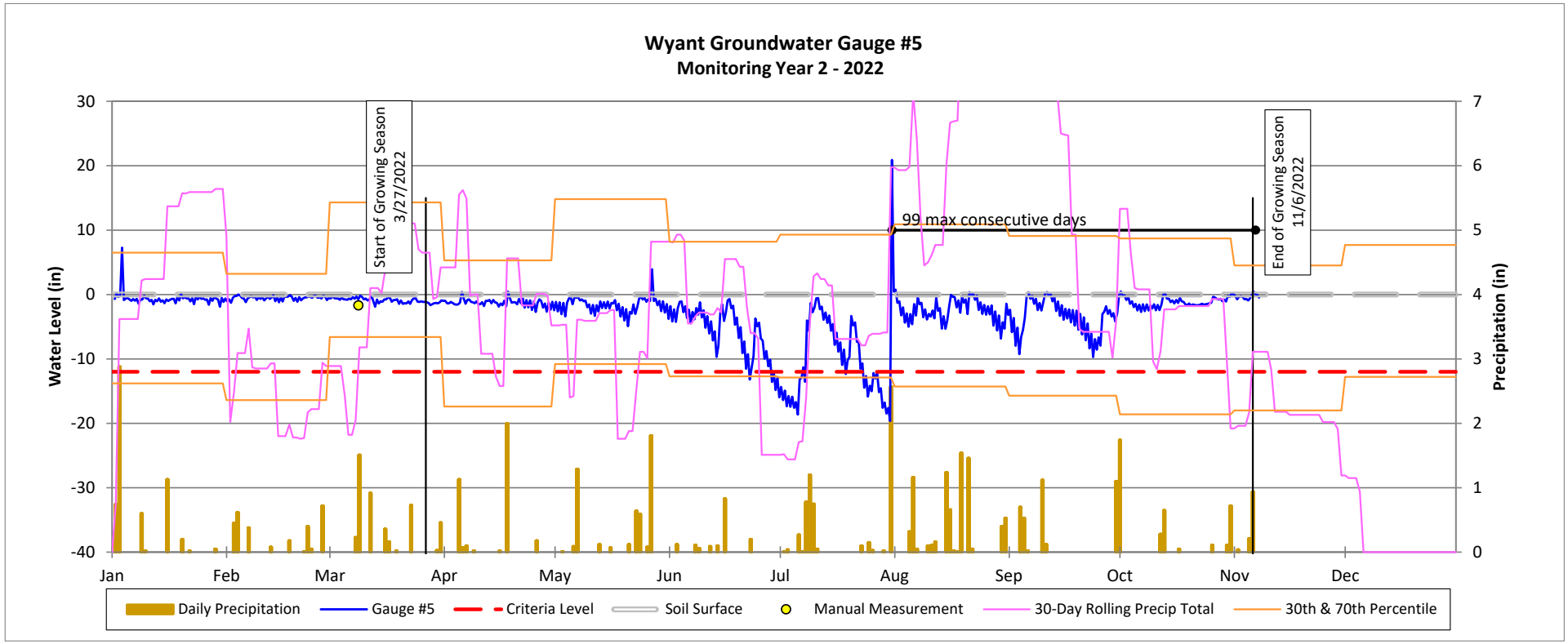
Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG4



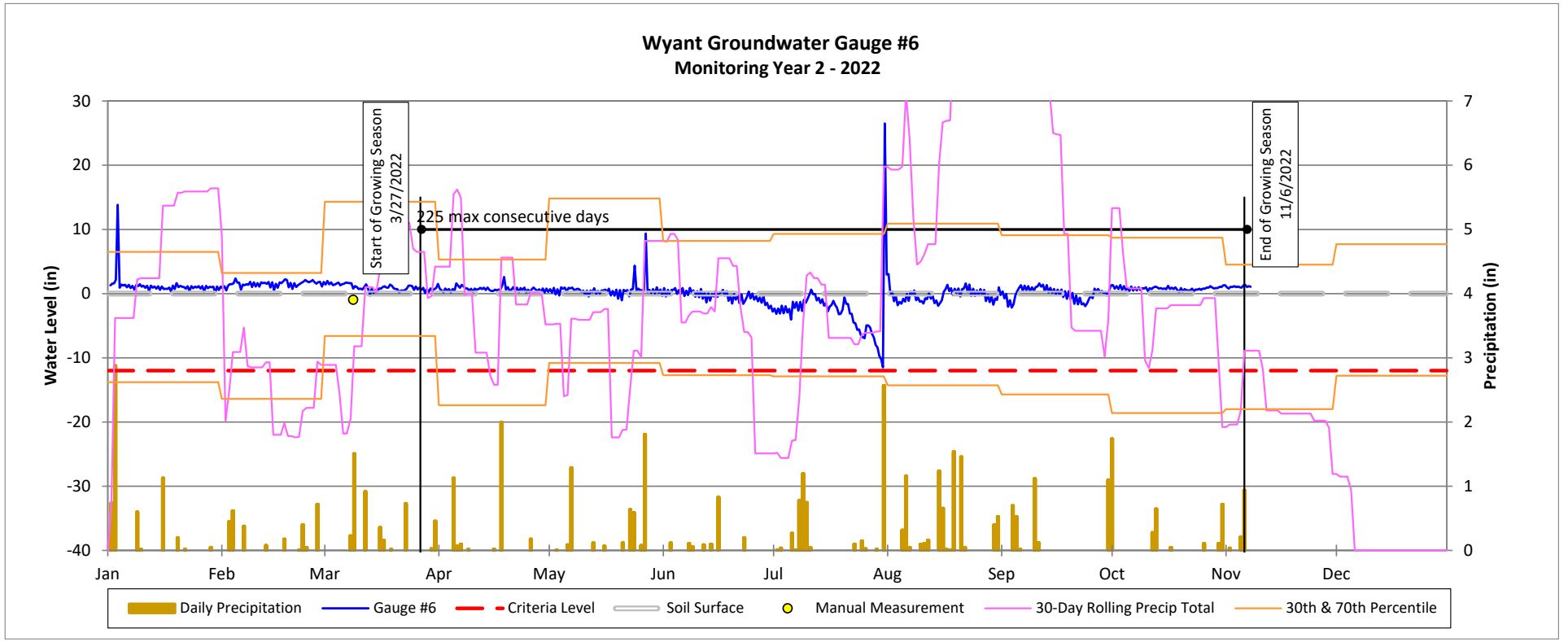
Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG5



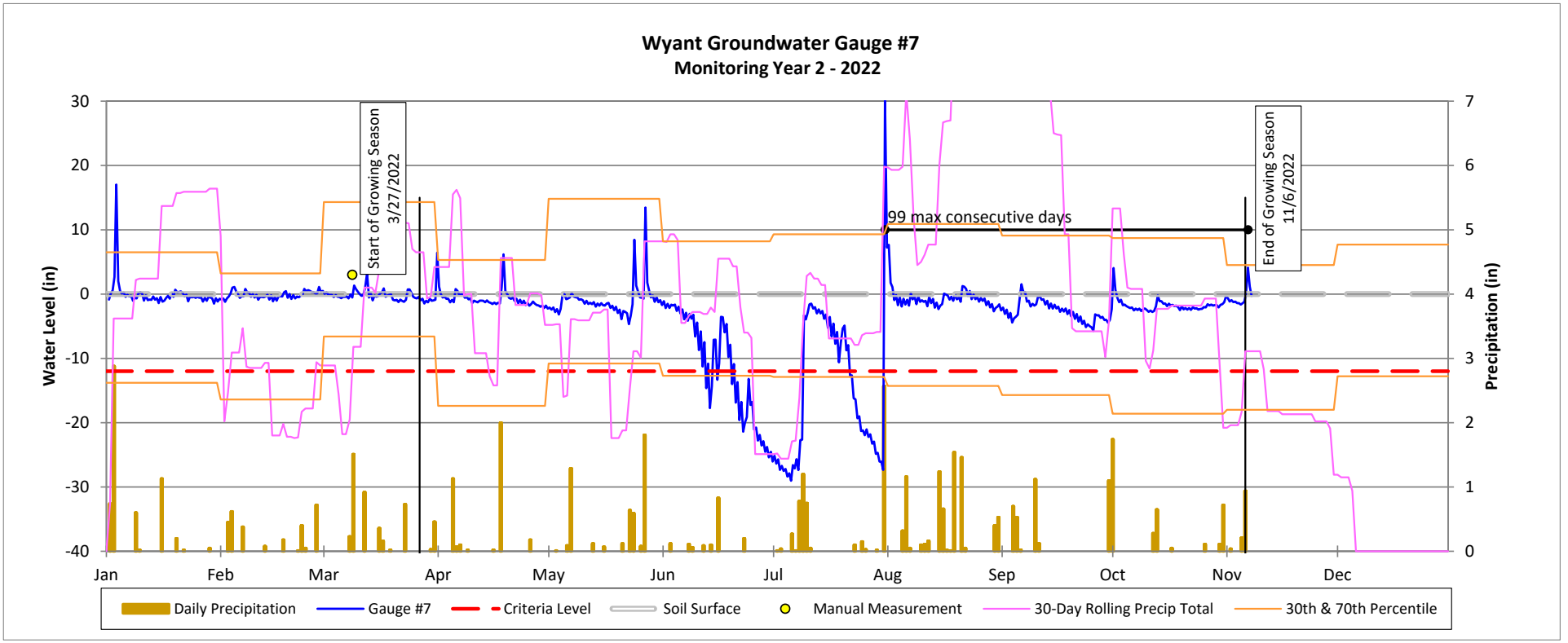
Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG6



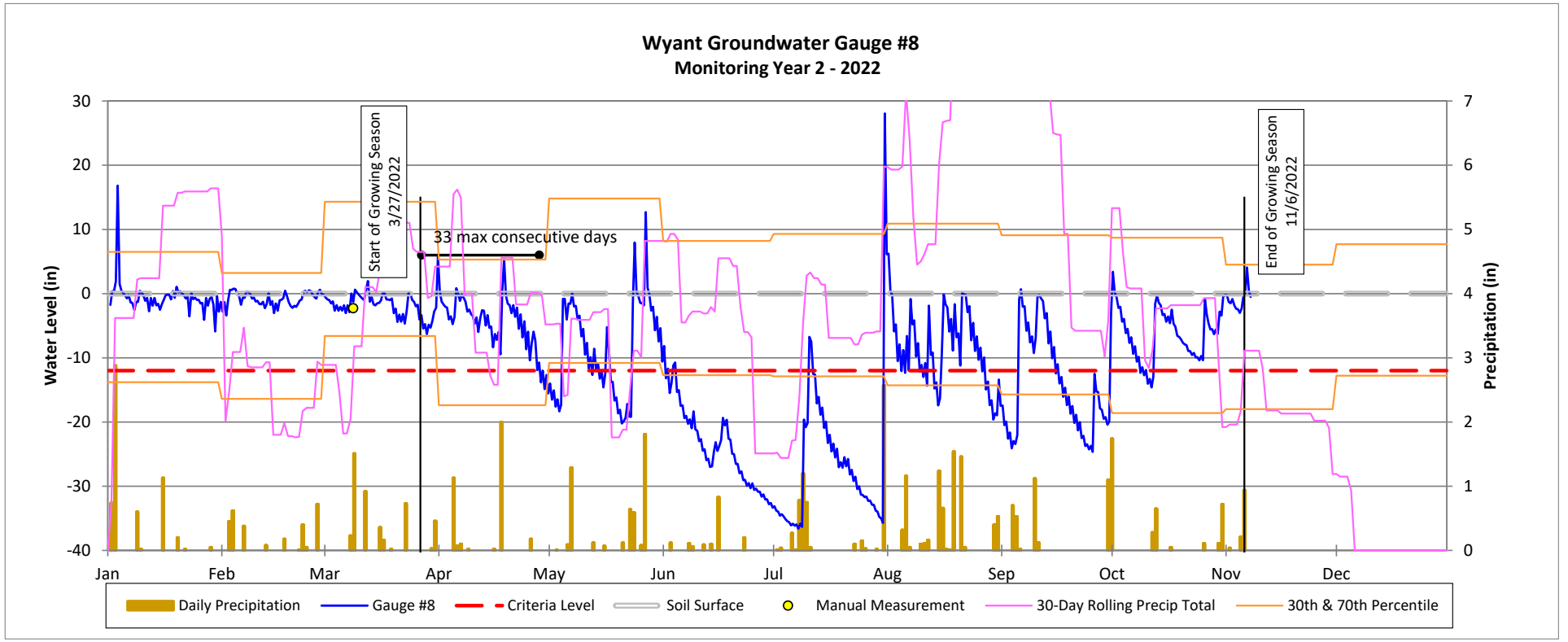
Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG7



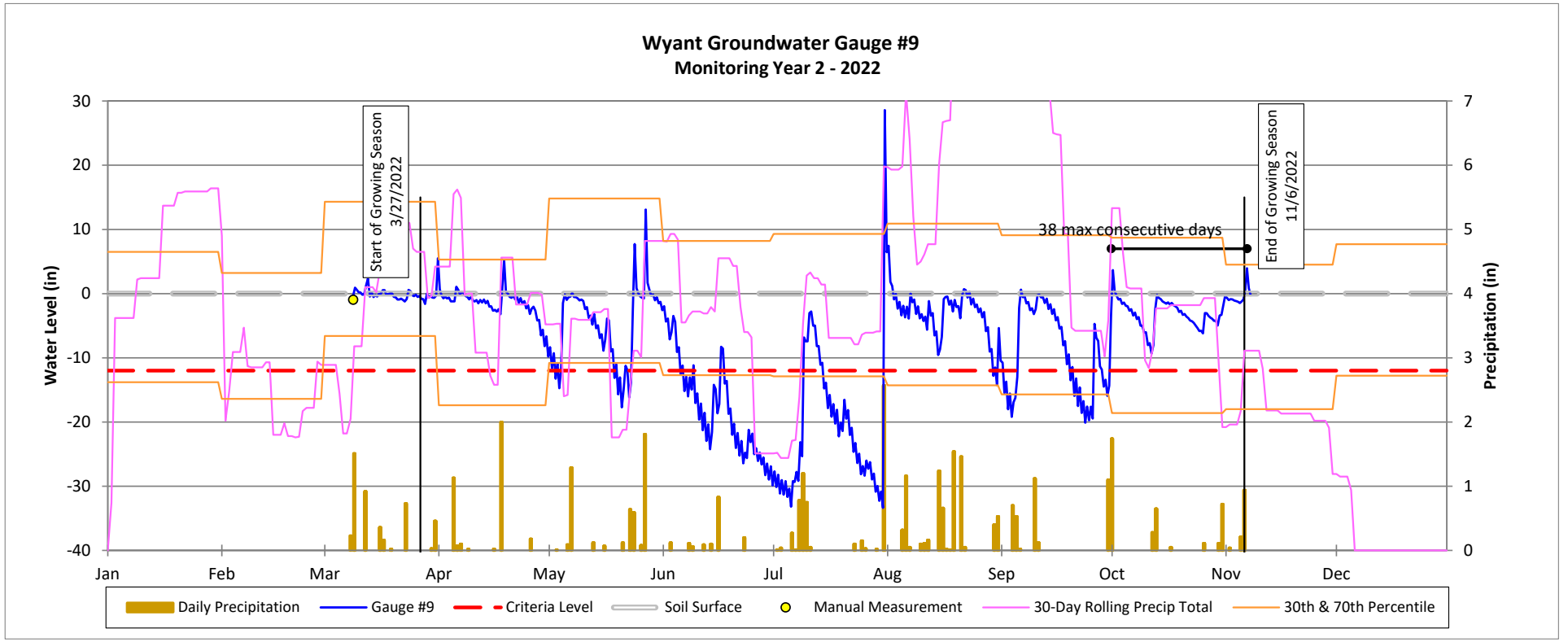
Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG8



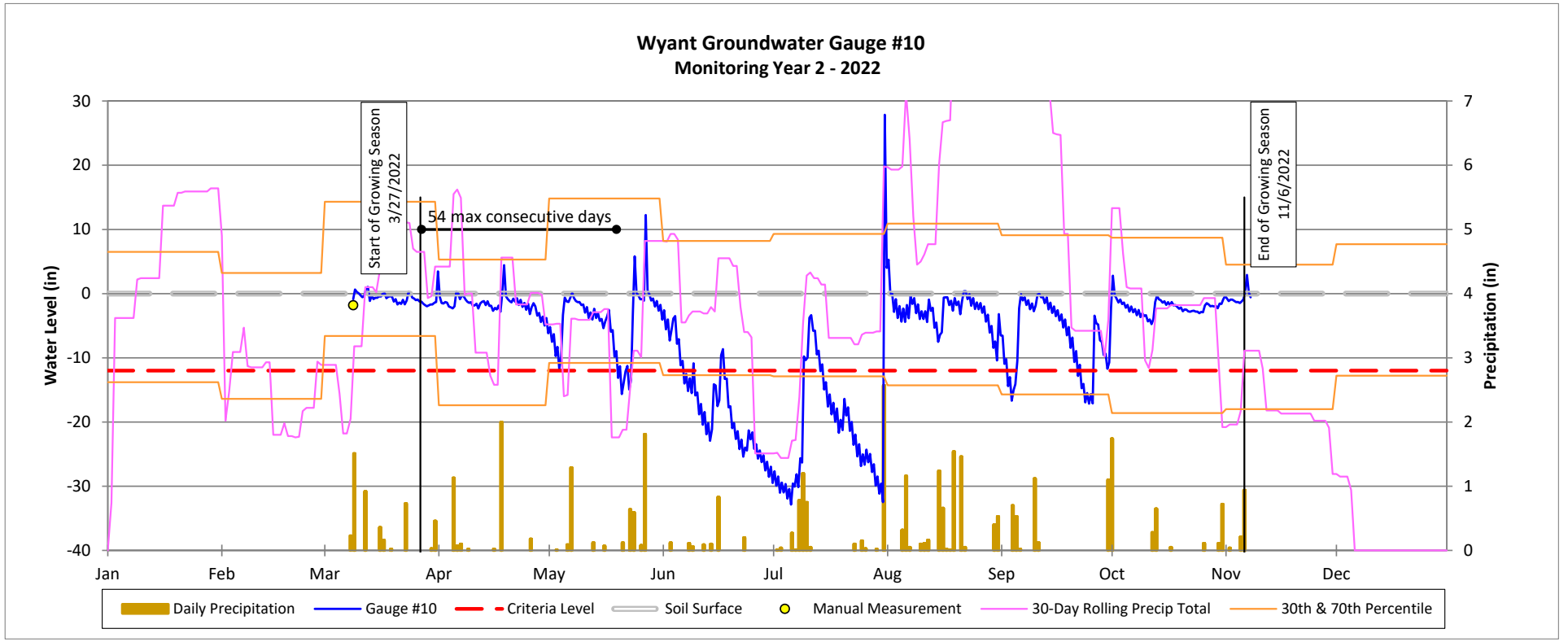
Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG9



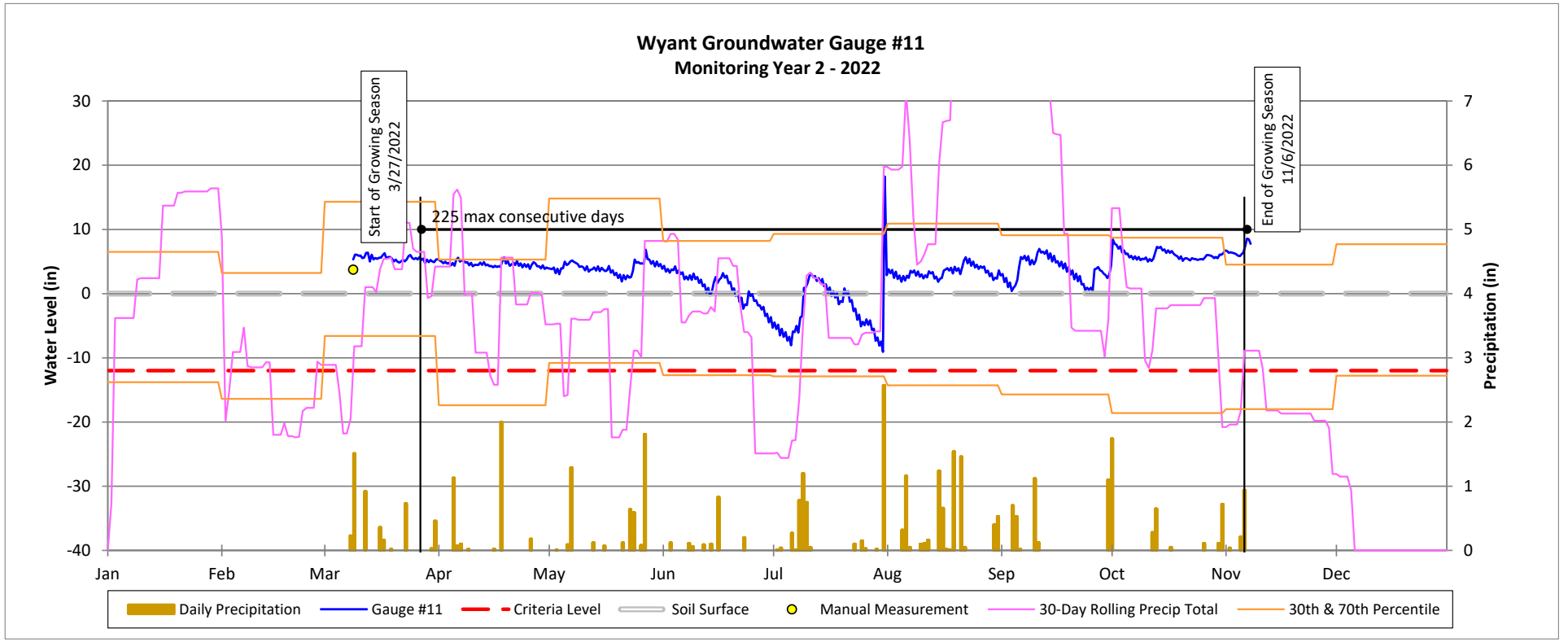
Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG10



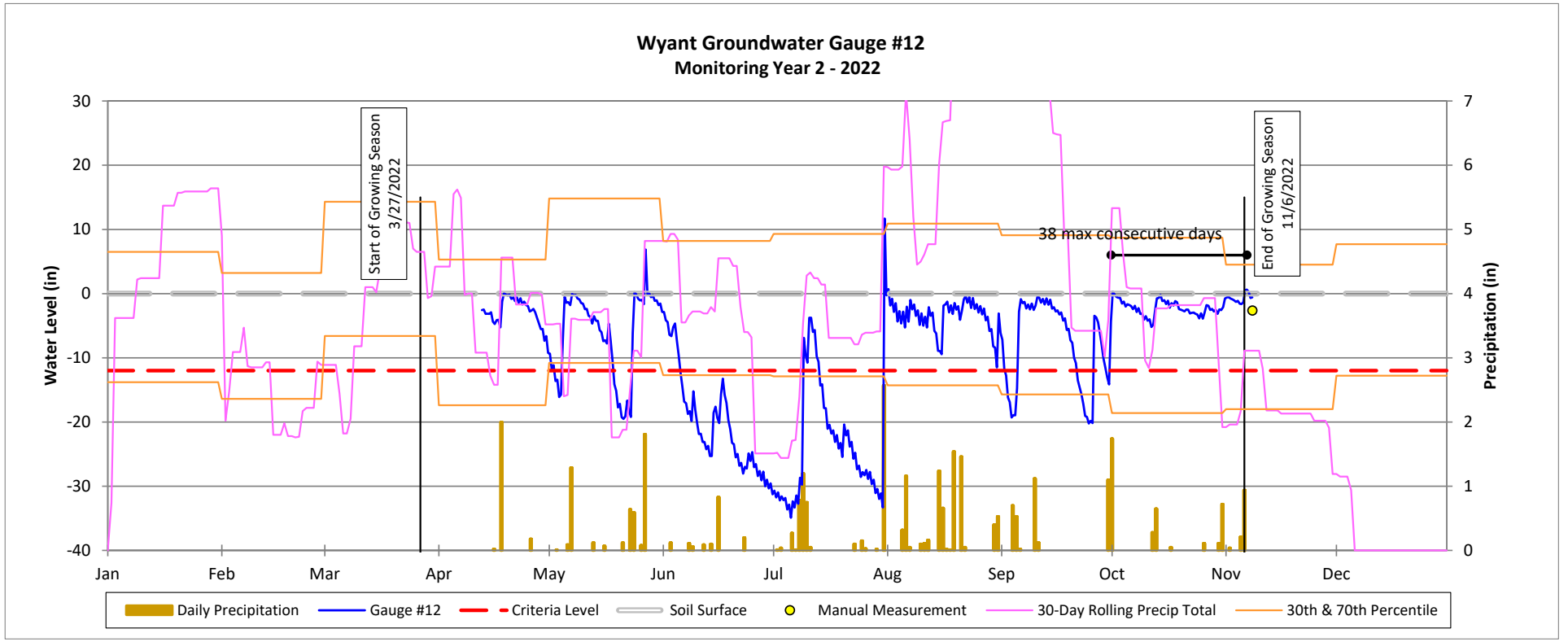
Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG11



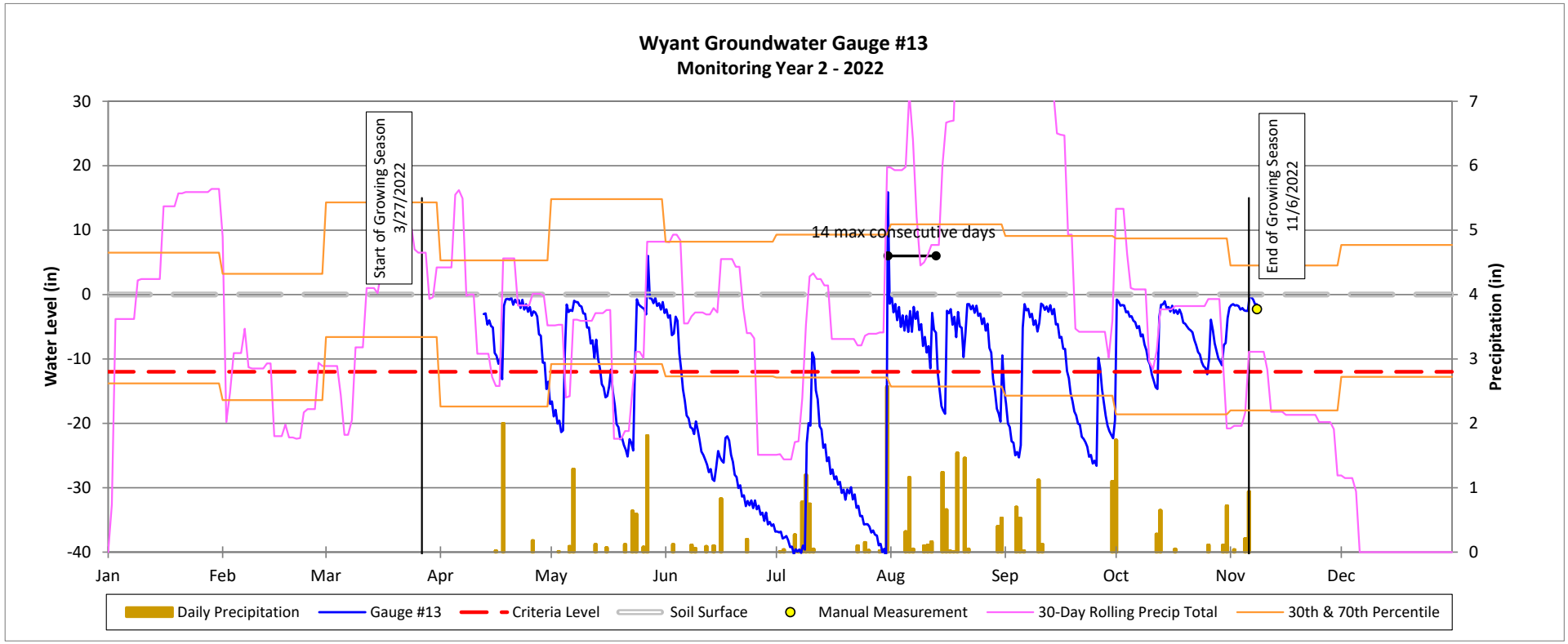
Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG12



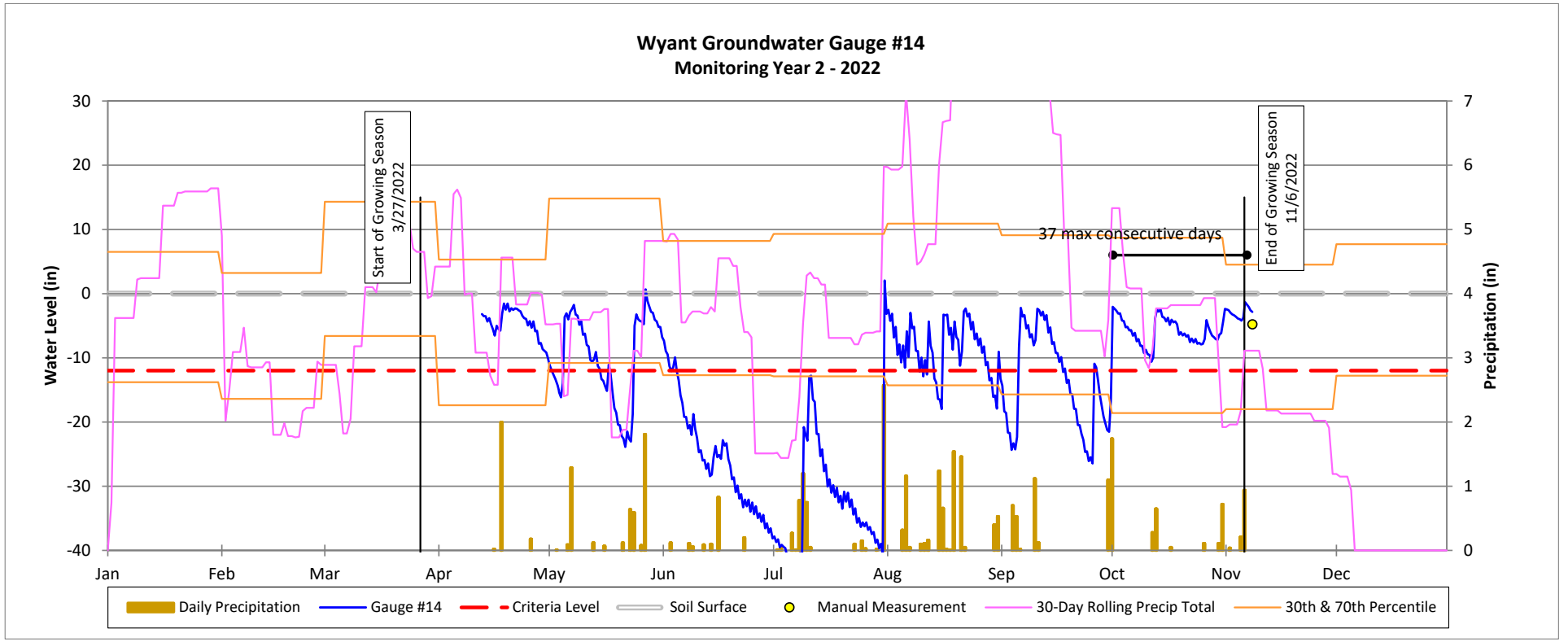
Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG13



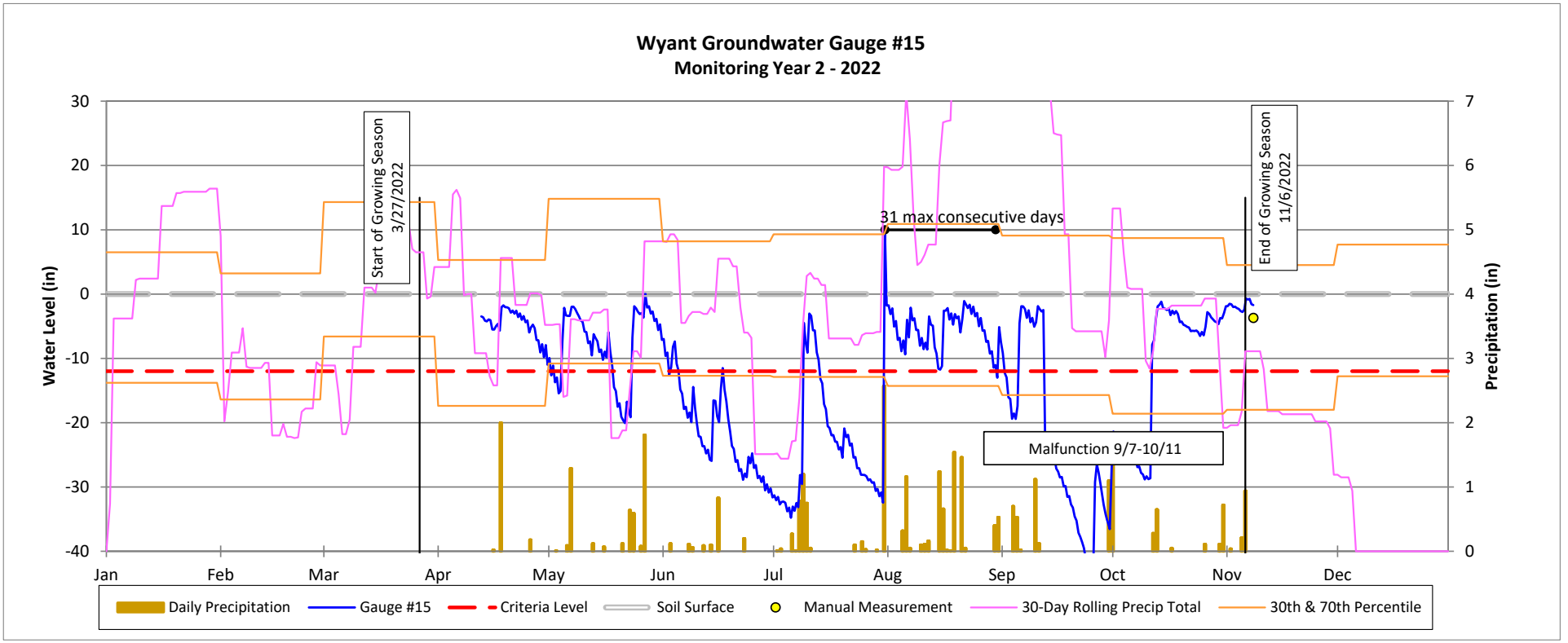
Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG14



Wetland Gauge Plots

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022
Wetland GWG15



Appendix E

Project Timeline and Contact Information

Table 14. Project Activity and Reporting History

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Activity or Report		Data Collection Complete	Completion or Delivery
404 Permit		April 2020	May 2020
Mitigation Plan Approved - Phase I		October 2018 - April 2020	April 2020
Mitigation Plan Approved - Phase II		January 2022	January 2022
Final Design - Construction Plans - Phase I		August 2020	August 2020
Final Design - Construction Plans - Phase II		January 2022	January 2022
Construction Completed - Phase I		March 2021	March 2021
Construction Completed - Phase II		April 2022	April 2022
Bare root and live stake plantings for reach/segments - Phase I		March 2021	April 2021
Bare root and live stake plantings for reach/segments - Phase II		April 2022	April 2022
Phase I - Baseline Monitoring (Year 0)	Stream Survey	April - June 2021	October 2021
	Vegetation Survey	April 2021	
	Remediation	N/A	N/A
	Encroachment		
Phase II - Baseline Monitoring (Year 0)	Stream Survey	May 2022	July 2022
	Vegetation Survey	April 2022	
	Remediation	N/A	N/A
	Encroachment		
Phase I - Year 1 Monitoring	Stream Survey	November 2021 - January 2022	February 2022
	Vegetation Survey	October 2021	
	Vegetation Ring Sprays	July 2021	N/A
	In-stream treatments	October 2021	
	Encroachment	N/A	
	Beaver Dam Removal	September 2021	
Year 2 Monitoring*	Stream Survey	September 2022 - October 2022	December 2022
	Vegetation Survey	September 2022 - October 2022	
	In-stream Treatments	July 2022	N/A
	Replanting	April 2022	
	Encroachment	N/A	
	Beaver Dam Removal	April 2022	
	Invasive Treatment	N/A	
Year 3 Monitoring	Stream Survey		
	Vegetation Survey		
	Remediation		
	Encroachment		
Year 4 Monitoring	Stream Survey		
	Vegetation Survey		
	Remediation		
	Encroachment		
Year 5 Monitoring	Stream Survey		
	Vegetation Survey		
	Remediation		
	Encroachment		
Year 6 Monitoring	Stream Survey		
	Vegetation Survey		
	Remediation		
	Encroachment		
Year 7 Monitoring	Stream Survey		
	Vegetation Survey		
	Remediation		
	Encroachment		

*Includes both Phase I and Phase II.

Table 15. Project Contact Table

Wyant Lands Mitigation Site
DMS Project No. 100067
Monitoring Year 2 - 2022

Designers Eric Nehaus, PE	**Wildlands Engineering, Inc.** 167-B Haywood Rd Asheville, NC 28806 828.207.8835
Construction Contractors	**Baker Grading & Landscaping, Inc.** 1000 Bat Cave Road Old Fort, NC 28762
Planting Contractor	**Bruton Natural Systems, Inc.** PO Box 1197 Fremont, NC 27830
Seeding Contractor	**Baker Grading & Landscaping, Inc.** 1000 Bat Cave Road Old Fort, NC 28762
Seed Mix Sources	**Green Resource LLC**
Nursery Stock Suppliers Bare Roots Live Stakes	**Bruton Natural Systems, Inc.**
Herbaceous Plugs	**Wetland Plants Inc.**
Monitoring Performers Monitoring, POC	**Wildlands Engineering, Inc.** Kristi Suggs 704. 332.7754 x.110

Appendix F

Correspondence

December 2, 2022

ATTN: CESAW-RG/Browning
Ms. Kim Browning
US Army Corps of Engineers – Wilmington District
69 Darlington Avenue
Wilmington, NC 28403-1343

RE: Monitoring Year 0 Annual Report Comments
Wyant Lands: Phase II Project Expansion
Lincoln County, NC
USACE Action ID No: SAW-2021-02449
DMS Project ID No. 100595
NCDEQ Contract No. 7244
DWR Project No. 2018-0177 & v.2

Dear Ms. Browning:

Wildlands Engineering, Inc. (Wildlands) has reviewed Interagency Review Team (IRT) comments from the Monitoring Year 0 (MY0) Report for the Wyant Lands: Phase II Project Expansion. Wildlands responses to IRT's comments are noted below.

Kim Browning, USACE

1. *I would like to verify that the rock that was installed to stabilize the ditch and dam overflow was accounted for in the impacts table. It appears that sections of rock installation were red-lined on the as-built and may have permanently impacted Wetlands L and M. I realize that these areas are very small (<0.01 ac), but we need to make sure we appropriately report impacts.*

   Wildlands Response: The impacts to Wetlands L and M were included in the impacts table as 0.001 acres of temporary impact from stabilization for Wetland L and 0.002 acres of temporary impact from floodplain grading for Wetland M. At the time of the permit these impact designations were deemed as sufficient for stabilizing the hillslope; however, during construction it was evident that additional measures were needed to stabilize the overflow ditch from the pond's emergency spillway. Therefore, the installation of the riprap permanently impacted 0.000297 acres of Wetland L and impacted 0.002219 acres of Wetland M for stabilization. Any remaining impacts for Wetland M, 0.01 acres, were designated as permanent for stream restoration on the Pre-Construction Notification Form.

Casey Haywood, USACE:

1. *The BMP was redesigned as a step pool stormwater conveyance using log sills. Is there any concern that these structures will rot? Please continue to monitor this section for instability.*

   Wildlands Response: Given the slope of the BMP, log steps and riprap material were added to increase grade control in addition to installed rock sills. Ultimately, woody floodplain vegetation will maintain long term stability of the BMP, but the logs provide initial grade control after construction. At the depth and extent to which the logs were buried, they are not anticipated to rot until after mature vegetation has been established. Annual site visits as well as photo monitoring will continue throughout the monitoring period for signs of instability.

2. *I am okay with the inclusion of the unapproved species (boxelder, black gum, and sourwood) to be counted toward success during monitoring. Additionally, I concur with DMS' second comment; please try to include the approved species that were unavailable in any future supplemental planting efforts to help increase site diversity.*

   Wildlands Response: Inclusion of the unapproved species towards success criteria is noted. If future supplemental planting is necessary, Wildlands will make every effort to include approved species that were not available during MY0 planting.

Eric Davis, DWR:

1. *DWR is ok with the added plant species.*

   Wildlands Response: Noted and thank you.

2. *The IRT has previously mentioned in comments and on the site walk the request to try to transplant existing mockernut hickory onsite. How successful was this transplant effort? If it wasn't attempted, please explain why not.*

   Wildlands Response: Existing mockernut hickory were identified in the field; however, given the extent of invasive species around the trees and the lack of small diameter trees suitable for transplanting, it was determined to be impractical. Portions of the floodplain were left intact and will hopefully provide a seed source for future recruitment and establishment through dispersal and/or soil seed bank. Other woody species were transplanted over the installed brush toes where suitable trees were identified.

3. *Appendix DWR requests an additional photo point stationed outside of the easement towards the boundary line at the step pool stormwater conveyance BMP. We would like to photo document the stability of this area through monitoring.*

Wildlands Response: Wildlands will include photos of the step pool stormwater conveyance BMP in a photolog. The photos will include views from the bottom of the BMP looking upslope from the UT2 R1 confluence as well as a view from outside the easement looking downslope. These photos will be updated and included in future monitoring reports.

Todd Bowers, EPA:

1. *Minor changes were implemented at several locations along UT2 Reach 1 during construction including the addition of bank stabilization structures (brush toes), and the installation of a BMP designed to convey overflow from the pond upstream of UT2. These changes were not reflected in the CCPV of Figures 1 and 1a and I recommend amending this error.*

   Wildlands Response: Brush toes that were added during construction were featured on the CCPV maps. The riprap stabilization area that was constructed below the pond's spillway was inadvertently omitted; however, as requested, it will be included in future CCPV figures. The measure will be depicted as a structure and not as a BMP as it is a stabilization effort for the pond's emergency overflow and dam outlet. Callouts were added to the CCPV maps for clarity.

2. *The vegetation planting plan changes involved several species changes in the Riparian Vegetation Zone and Wetland Zones; much of the change serves to increase site diversity and maintain hydrologic suitability. No concerns with the changes implemented. I am a little concerned with the timing of planting which as performed outside of the timeframe set in the mitigation plan (Late November to Mid-March). I hope that we do not get an adaptive planting plan in the near future due to planting outside of the dormant season, but I realize that Wildlands likely had some constraints between completing site grading and getting the plant stock in the ground on-time.*

   Wildlands Response: Wildlands will continue to monitor stem density throughout the Site and will supplementally plant if needed. Vegetation densities are currently meeting expectations and an adaptive planting plan is not expected.

3. *Shift in location of Veg Plot #13 and Photo Point 15 noted; no comment.*

   Wildlands Response: Noted.

4. *Looking forward to the combination report for Wyant Lands I and II and including the approved and soon-to-be approved vegetation species together to determine stem density on site.*

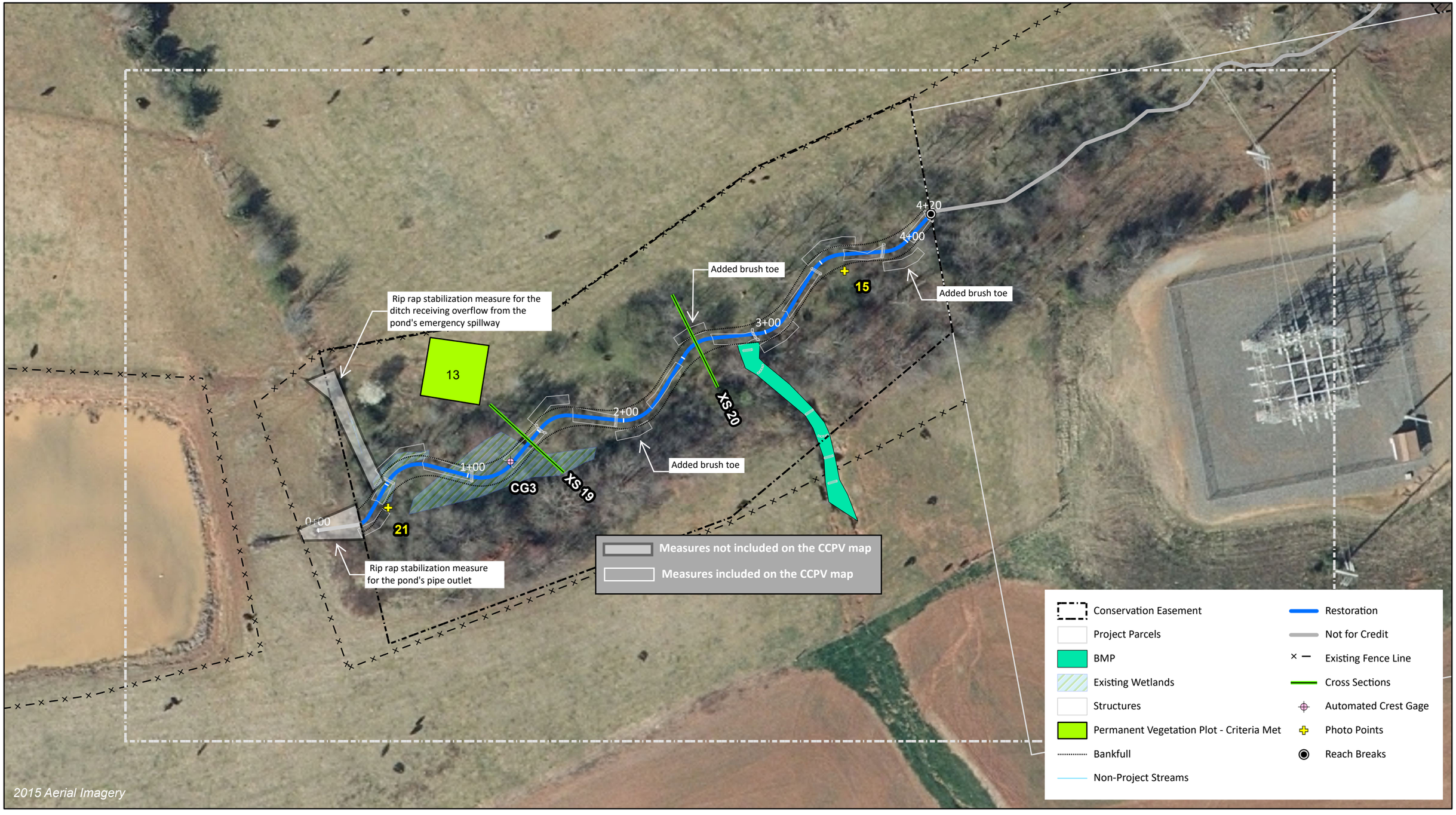
Wildlands Response: The combination MY2 report for Wyant Lands Phases I and II will include both mitigation plan approved species as well as post-mitigation plan approved species. Results are located in Appendix B of the Monitoring Year 2 Annual Report.

5. *Overall, I am satisfied with the report and the work that has been completed at the site. Having not been on-site, I really appreciated the detailed ground-level stream and veg plot photos. I recommend the appropriate credit release (Milestone 2) for warm stream and riparian wetland mitigation units for this monitoring milestone. I have no other substantial comments at this time.*

   Wildlands Response: Thank you. We appreciate the compliment.

Sincerely,

Eric Neuhaus, PE
Project Manager
eneuhaus@wildlandseng.com



WILDLANDS ENGINEERING

Environmental Quality

0 25 50 100 Feet

Figure 1a. Current Condition Plan View
Wyant Lands Mitigation Site - Phase II Project Expansion
Catawba River Basin 03050102
(03050103 Expanded Service Area)
Monitoring Year 0 - 2022
Lincoln County, NC