EI-26794

Waters of the United States Baseline Environment Technical Memorandum

Uinta Basin Railway

Seven County Infrastructure Coalition

December 20, 2019

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Acronyms and Abbreviations

°F	degrees Fahrenheit
BLM	U.S. Bureau of Land Management
CFR	Code of Federal Regulations
Coalition	Seven County Infrastructure Coalition
CWA	Clean Water Act
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
FAC	facultative (plants that occur in wetlands and non-wetlands)
FACW	facultative wetland (plants that usually occur in wetlands but can occur in non-wetlands)
GIS	geographic information systems
HDR	HDR, Inc.
NWPL	National Wetlands Plant List
OBL	obligate wetland (plants that almost always occur in wetlands)
OHWM	ordinary high water mark
SITLA	Utah School and Institutional Trust Lands Administration
STB	U.S. Surface Transportation Board
TNW	traditional navigable water
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WOUS	waters of the United States

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1.0 Introduction

The Seven County Infrastructure Coalition (Coalition), a governmental entity comprising Carbon, Daggett, Duchesne, Emery, San Juan, Sevier, and Uintah Counties, is proposing a new railway that would connect the Uinta Basin's various industries to the national rail network. Currently, the Uinta Basin does not have rail service, and freight needs are met primarily through trucking over a limited highway network. The proposed railway would be constructed and operated under the authority of the U.S. Surface Transportation Board (STB). STB, in conjunction with other regulatory bodies, is preparing an EIS for this railway, which has the potential to cause environmental impacts. The Coalition is conducting engineering and environmental baseline environmental studies in support of an Environmental Impact Statement (EIS).

The Coalition has proposed three routes to STB for detailed study in the EIS. This memorandum, which has been prepared by HDR, Inc., on behalf of the Coalition, identifies the baseline aquatic resources and submitted to STB to support the preparation of the EIS.

This baseline report summarizes the existing aquatic resources that would potentially be affected by one of the three alternative railway routes, which are:

- **Indian Canyon**, as defined by a conceptually engineered route dated November 22, 2019
- **Wells Draw**, as defined by a conceptually engineered route dated November 22, 2019
- **Whitmore Park**, as defined by a conceptually engineered route dated November 22, 2019

What are aquatic resources?

Aquatic resources are wetlands, streams, and other waters that may be regulated as waters of the U.S under the Clean Water Act.

A brief description of each alternative route is provided in Sections 1.1 through 1.3 below. (The terms *alignment* and *alternative* are synonymous with *alternative route*.) Figure 1-1 on page 3 shows an overview map of the routes.

1.1 Indian Canyon Alternative

The Indian Canyon route is about 83 miles long; crosses Uintah, Duchesne, Carbon, and Utah Counties; and ranges in elevation from 5,015 to 8,207 feet. The Indian Canyon route runs from a connection to the national railway network near Kyune, Utah, to a terminus near Myton, Utah, in the Uinta Basin. The route travels through privately owned land as well as land owned by the U.S. Department of Agriculture (USDA) Forest Service, the U.S. Bureau of Land Management (BLM), the Utah School and Institutional Trust Lands Administration (SITLA), and the Ute Tribe.

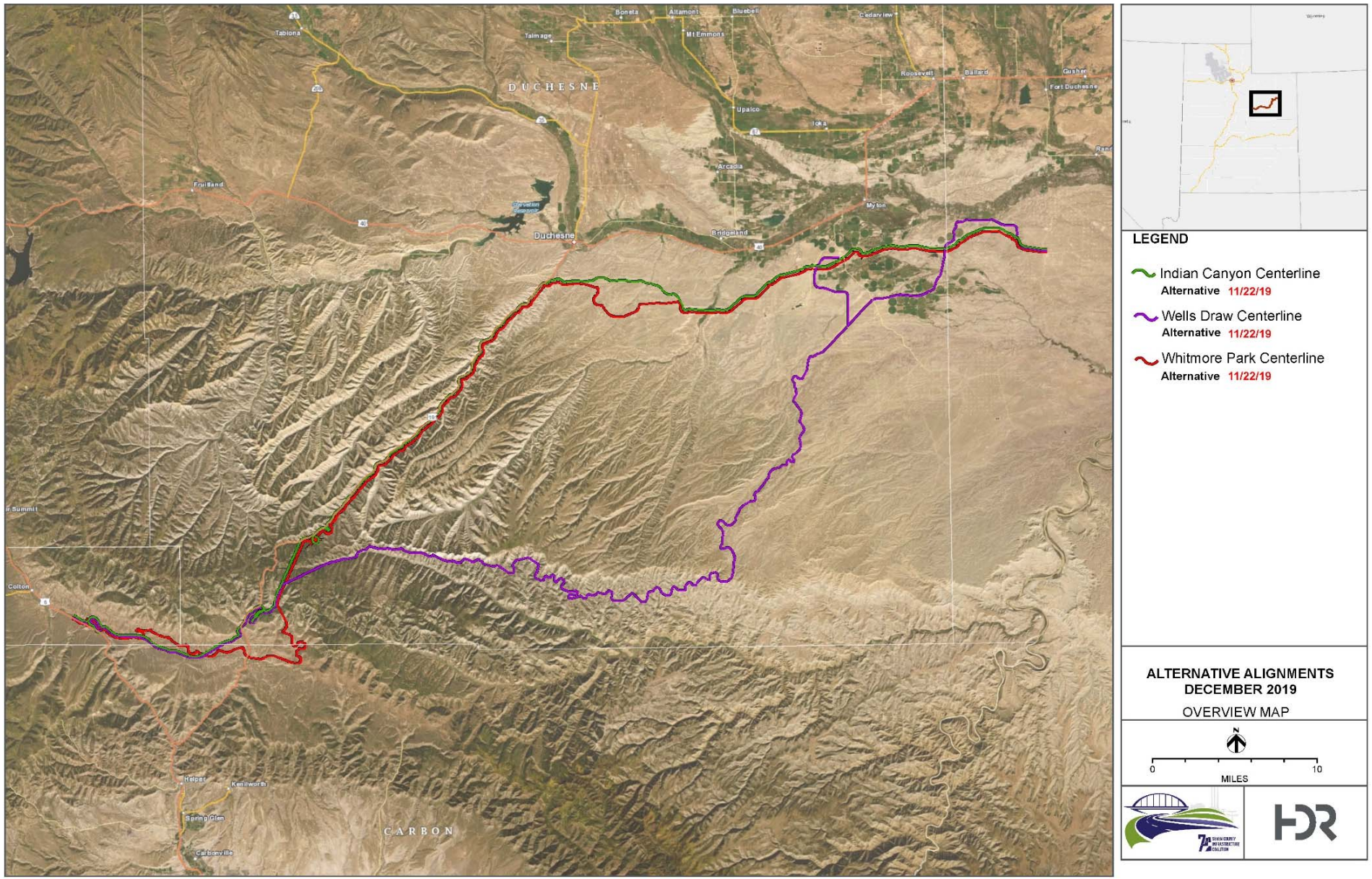
1.2 Wells Draw Alternative

The Wells Draw route is about 106 miles long; crosses Uintah, Duchesne, Carbon, and Utah Counties; and ranges in elevation from 4,956 to 8,207 feet. The Wells Draw route runs from a connection to the national railway network near Kyune, Utah, to a terminus near Myton, Utah, in the Uinta Basin. It coincides with the Indian Canyon route for about 18.5 miles from its western terminus. The route travels through privately owned land as well as land owned by BLM and SITLA.

1.3 Whitmore Park Alternative

The Whitmore Park route is about 89 miles long; crosses Uintah, Duchesne, Carbon, and Utah Counties; and ranges in elevation from 5,015 to 8,207 feet. The Whitmore Park route runs from a connection to the national railway network near Kyune, Utah, to a terminus near Myton, Utah, in the Uinta Basin. It coincides with the Indian Canyon route for much of its length. The route travels through privately owned land as well as land owned by the USDA Forest Service, SITLA, and the Ute Tribe.

Figure 1-1. Overview of Alignment Alternatives



2.0 Regulatory Setting

As described in Part 328 of Title 33 in the Code of Federal Regulations (CFR), the objective of the Clean Water Act (CWA) is to maintain and restore the chemical, physical, and biological integrity of the waters of the United States (33 CFR Part 328, Section 328.4). Any person, firm, or agency planning to alter or work in waters of the United States (WOUS), including the discharge of dredged or fill material, must first obtain authorization from the U.S. Army Corps of Engineers (USACE) under CWA Section 404 and, if applicable, Section 10 of the Rivers and Harbors Act of 1899 (Title 33 United States Code Section 403) for work in navigable WOUS.

The proposed railway would not require a Section 10 permit because it would not entail work in navigable waters.

HDR anticipates that a CWA Section 404 permit would be required to authorize project activities in WOUS. This section discusses the regulatory framework that would apply to segments within the alternative study areas that are subject to federal jurisdiction.

2.1 Section 404 of the Clean Water Act

Waters of the United States is the encompassing term for areas that qualify for federal regulation under Section 404 of the CWA. Section 404 of the CWA gives the U.S. Environmental Protection Agency (EPA) and USACE regulatory and permitting authority regarding discharging dredged or fill material into "navigable waters of the United States." Section 502(7) of the CWA defines *navigable waters* as "waters of the United States, including territorial seas."

The regulation at 33 CFR Part 328 defines the term *waters of the United States* as it applies to the jurisdictional limits of the authority of USACE under the CWA. A summary of this definition of WOUS in 33 CFR Part 328, Section 328.3, includes (1) waters used for commerce and subject to tides; (2) interstate waters and wetlands; (3) "other waters" such as intrastate lakes, rivers, streams, and wetlands; (4) impoundments of waters; (5) tributaries of waters; (6) territorial seas; and (7) wetlands adjacent to waters. Therefore, for purpose of determining USACE jurisdiction under the CWA, *navigable waters* as defined in the CWA are the same as WOUS as defined in 33 CFR Part 328, Section 328.3. WOUS include non-isolated "wetlands" and "other WOUS."

The term *other WOUS* refers to unvegetated waterways and other water bodies with a defined bed and bank, water bodies such as drainages, creeks, rivers, playas, and lakes. This definition approximately translates to the bank-to-bank portion of water bodies, up to the ordinary high water mark (OHWM). Other WOUS typically lack hydrophytic vegetation and might also lack hydric soils. Jurisdiction in non-tidal areas extends to the OHWM, which is defined as:

> … that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. [33 CFR Part 328, Section 328.3(e); 51 Federal Register 41250, November 13, 1986, as amended at 58 Federal Register 45036, August 25, 1993]

Wetlands are defined as:

> … areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. [33 CFR Part 328, Section 328.3(b); 40 CFR Part 230, Section 230.3(t)]

The guidelines for implementing Section 404 of the CWA are referred to as the Section 404(b)(1) Guidelines. They were developed by EPA in conjunction with USACE (40 CFR Part 230). The Guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

On June 29, 2015, EPA and USACE jointly published the *Clean Water Rule: Definition of "Waters of the United States"* (Clean Water Rule), which became effective August 28, 2015 (40 CFR Section 230.3), but its implementation was blocked through legal appeals in several states, including Utah. On September 12, 2019, EPA and the U.S. Army announced that the agencies were repealing the 2015 Rule. On October 22, 2019, the agencies published a final rule that amended portions of the Code of Federal Regulations and restored the regulatory text that existed prior to the 2015 Rule. The final rule will become effective on December 23, 2019. For this reason, USACE is using the 1986 regulations and applicable guidance in making jurisdictional determinations or taking other actions based on the definition of WOUS.

2.1.1 Significant Nexus of Tributaries

On December 2, 2008, USACE and EPA issued joint guidance implementing the June 19, 2006, U.S. Supreme Court opinions resulting from the *Rapanos v. United States* and *Carabell v. United States* (*Rapanos*) cases. This guidance states that the agencies will assert jurisdiction over (1) traditional navigable waters (TNW), (2) wetlands adjacent to TNW, (3) non-navigable tributaries of TNW that are relatively permanent where the tributaries typically flow year around or have continuous flow at least seasonally (for example, typically 3 months), and (4) wetlands that abut such tributaries. A "significant nexus" determination will be made for non-navigable tributaries that are not relatively permanent and their adjacent wetlands. Such features that are determined to have a "significant nexus" to a TNW will also be subject to CWA jurisdiction.

A significant nexus requires that there be "more than an insubstantial or speculative effect on the chemical, physical, and/or biological integrity of a TNW." This guidance also states that the following features will generally not be subject to CWA jurisdiction: swales or erosional features (for example, gullies or small washes characterized by low a volume of water and infrequent or short-duration flow) and ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

2.1.2 Isolated Areas Excluded from Section 404 Jurisdiction

Some aquatic resources might also be considered outside USACE jurisdiction. These isolated wetlands and waters are those areas that do not have a surface or groundwater connection to, and are not adjacent to, a navigable "water of the United States" and do not otherwise exhibit an interstate commerce connection. When an approved jurisdictional determination is requested by an applicant for Section 404 permit, USACE evaluates whether aquatic resources are isolated.

2.2 Section 401 of the Clean Water Act

Under Section 401 of the CWA, any activity requiring a federal license or permit that might result in a discharge to jurisdictional waters must also receive a certification ensuring that the permit or license will protect water quality. The Utah Division of Water Quality issues certifications for non-tribal lands in Utah, and EPA fulfills this role for tribal lands. This certification requirement allows each State or tribe to have input into federally approved projects that could affect its waters (rivers, streams, lakes, and wetlands) and to ensure that the projects will comply with water quality standards and any other water quality requirements of state or tribal law. Any Section 401 certification also ensures that the certified project will not adversely affect impaired waters (waters that do not meet water quality standards) and that the project complies with applicable water quality improvement plans.

2.3 Utah Stream Alteration Program

Section 73-3-29 of the Utah Code requires any person, governmental agency, or other organization wishing to alter the bed or banks of a natural stream to obtain written authorization from the State Engineer, under the Division of Water Rights Stream Alteration Program, before beginning work.

The Utah Stream Alteration Program permits projects that can alter natural streams, and areas adjacent to natural streams, with the construction of bridges, culverts and other activities.

What is a natural stream?

Under Utah Code Section 73-3-29, a natural stream is any natural waterway that receives enough water to develop an ecosystem that differs from the surrounding upland environment, typically determined by observing vegetation changes.

3.0 Methodology

The survey team conducted delineation fieldwork to map aquatic resources, consistent with methodology agreed to by STB, throughout the spring, summer, and fall of 2019. The study area for each alternative generally included a 500-foot buffer on either side of the proposed centerline of the route, generally resulting in a 1,000-foot-wide study area for each alternative.

In 2014, HDR conducted aquatic resources delineation surveys for UDOT's Uinta Basin Railroad project. Some of the 2014 surveys were conducted on portions of the proposed routes, covering about 85 miles. The 2014 surveys were conducted in accordance with currently applicable delineation procedures and guidance. Within the areas surveyed in 2014, the 2019 survey team verified through visual observation that the hydrology and vegetation characteristics appeared consistent with the characteristics observed during the delineation survey in 2014. At sites with observed differences from 2014, the survey team applied procedures as described in Section 3.2, Delineation Procedures, to delineate aquatic resources based on the existing conditions.

The survey team was able to conduct on-the-ground, delineation surveys for about 74 miles of the approximately 83-mile Indian Canyon route (about 4.25 miles of which are tunnel), about 65 miles of the approximately 102-mile Wells Draw route (about 4.5 miles of which are tunnel), and about 70 miles of the approximately 89-mile Whitmore Park route (about 5.25 miles of which are tunnel). Tunnel areas were not surveyed. The areas that were not surveyed in the Indian Canyon and Whitmore Park study areas were omitted because of restrictions in accessing private property. The areas that were not surveyed in the Wells Draw study area were omitted due to restrictions in accessing private and public property as well as winter weather conditions and steep terrain that posed safety concerns. Areas not surveyed are identified as such on aquatic resource maps.

For areas not surveyed, HDR performed a desktop evaluation to map approximate aquatic resources boundaries by reviewing aerial images, soil maps, National Wetland Inventory data, National Hydrography Dataset data, and available field data in the vicinity, such as conditions downstream of drainages not accessed within the study areas.

3.1 Preliminary Data Gathering

Before conducting delineation fieldwork, HDR reviewed information from several sources, including the following:

- Aerial images of the study areas
- National Hydric Soils List for Utah (USDA NRCS 2019a)
- National Hydrography Dataset (USGS 2019a)
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory maps in geographic information systems (GIS) format
- U.S. Department of Agriculture, Natural Resources Conservation Service's (USDA NRCS) Web Soil Survey (USDA NRCS 2019b)
- USACE delineation manuals and delineation reference guides (described in Section 3.2, Delineation Procedures)

3.2 Delineation Procedures

The delineation fieldwork was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast* (Version 2.0) (*Western Mountain, Valleys, and Coast Regional Supplement*; USACE 2010), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (*Arid West Regional Supplement*; USACE 2008), *A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-perennial Streams in the Western Mountains,* Valleys, and Coast Region of the United States (Mersel and Lichvar 2010), *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (Lichvar and McColley 2008), *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Curtis and Lichvar 2010), *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Curtis and Lichvar 2010), and USACE regulatory guidance letters and joint (USACE and EPA) regulations, policies, references, and guidance.

HDR evaluated regional delineation supplements to determine how the supplements apply to the study areas. The regional supplements state that selecting a regional supplement for a particular site should be based on landscape characteristics. Through consideration of landscape characteristics in the study areas, HDR selected the Arid West regional supplement and OHWM manual to delineate aquatic resources below 6,000 feet and the Western Mountains, Valleys, and Coast regional supplement and OHWM manual to delineate aquatic resources above 6,000 feet.

The survey team assessed the study area to verify the presence or absence of previously delineated aquatic features as well as to identify new aquatic features. For new features or sites with changed conditions from the 2014 delineation, the routine method was applied by selecting data-collection point locations in the field. These sampling points were placed at locations where landform, vegetative, or hydrologic characteristics indicated the potential for wetlands. A minimum of one set of paired data points (one within a wetland and one just outside the wetland boundary) was established to help delineate each wetland or wetland complex. Additional data points were located as needed to help determine wetland boundaries.

The survey team recorded detailed information about vegetation, soils, and hydrologic characteristics for each data point and used this information to determine whether an area qualifies as a wetland and to help identify the wetland boundaries. The survey team also collected data to delineate intermittent and ephemeral streams for applicable features in accordance with USACE procedures.

Based on information gathered from sample points and observable changes in elevation and plant communities, HDR mapped aquatic resource boundaries in the study areas through a combination of global positioning system (GPS)-based field mapping (using the ArcGIS Collector app and an iPad) and desktop digitization. To produce aquatic resources maps for the study areas, data were exported into GIS software (ArcMap 10.6.1). Most wetlands and some stream segments were mapped as polygons in the field, but sometimes polylines were collected along wetland boundaries and at the OWHM of stream and other waters. For relatively small ephemeral streams, a centerline polyline polygon was collected in the field, and the average width of these features were recorded. Through desktop review and digitization, all polyline data were converted to polygon data. The maps in Appendix A, Aquatic Resource Maps in the Indian Canyon Study Area, Appendix B, Aquatic Resource Maps in the Wells Draw Study Area, and Appendix C, Aquatic Resource Maps in the

Whitmore Park Study Area, depict the extent of aquatic resource areas, the locations of wetland and stream delineation sampling points, and the locations of observation verification points for the 2014 delineation in the study area for each alternative.

3.2.1 Wetlands

A determination of the occurrence of wetlands is based on the presence or absence of hydrophytic (wetland) vegetation, hydric (wetland) soils, and wetland hydrology. The presence of all three of the criteria is necessary for an area to be designated as a jurisdictional wetland unless problematic conditions or significant disturbance is identified and evaluated in accordance with delineation procedures. Wetland boundaries are considered to be a line across which the vegetation, soils, and hydrologic characteristics begin or cease to meet wetland criteria.

Vegetation

Hydrophytic vegetation includes plants that are adapted to grow in water, or in a substrate that is at least periodically deficient in oxygen as a result of excessive water contact. Hydrophytic vegetation indicators include a prevalence of hydrophytic vegetation (that is, a majority of dominant plant species that are facultative or obligate wetland plants as listed in the National Wetland Plant List [NWPL; Lichvar et al. 2016]) and morphological or physiological adaptations to saturated soil conditions. Table 3-1 lists the most recent NWPL indicator statuses assigned to plant species for the purpose of delineating wetlands (Lichvar et al. 2012). A list of observed plant species, including their indicator status, is provided in Appendix D, List of Plant Species Observed.

Table 3-1. Wetland Indicator Status System

Indicator Status	Indicator Symbol	Definition
Obligate wetland	OBL	Plants that almost always occur in wetlands.
Facultative wetland	FACW	Plants that usually occur in wetlands but could occur in non-wetlands.
Facultative	FAC	Plants that occur in wetlands and non-wetlands.
Facultative upland	FACU	Plants that usually occur in non-wetlands but could occur in wetlands.
Upland plants	UPL	Plants that almost never occur in wetlands.
Not listed	NL	Plants that are not listed on the NWPL and therefore are typically assumed to be upland.

Source: Lichvar et al. 2012

The survey team documented vegetation within a sample plot surrounding each sampling point location. Each polygon area was visually inspected, and plant species were identified. Vegetation was considered hydrophytic when over 50% of the dominant species had an indicator status of facultative (FAC), facultative wetland (FACW), or obligate (OBL) or when the prevalence index was less than 3.0 in cases where the dominance was less than or equal to 50%. To identify the appropriate indicator status of each plant species recorded, the survey team referenced the versions of the Arid West Regional Wetland Plant List and the Western Mountains, Valleys, and Coast Regional Plant List (these lists are subsets of the NWPL) that were available for delineation fieldwork and analysis (Lichvar et al. 2016).

Soils

Hydric soils are soils that are saturated, flooded, or ponded for long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile. Anaerobic conditions favor the growth and regeneration of hydrophytic vegetation. Hydric soil indicators can include organic soils (histosols), mineral soils saturated and rich in organics (histic epipedons), sulfidic odor, low dissolved oxygen concentration (aquic moisture regime) and reducing conditions, gleyed and/or low chroma soils, soils listed on national, state, or local hydric soils lists, and iron and manganese concentrations close to the soil surface. The survey team used a standard Munsell soil color chart to determine the soil matrix and mottle colors (Munsell Color 2009). In accordance with USACE methodology, soil profiles were investigated at sampling points in the study areas and were examined for indicators of hydric conditions.

Hydrology

The term *wetland hydrology* encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on the characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively. Wetland hydrology indicators include obvious characteristics such as surface water, soil saturation, and water table depth. Other indicators include soil cracking, a salt crust, drainage patterns, water-stained leaves, and the presence of oxidized rhizospheres. The survey team evaluated hydrology at each sampling point in the study areas.

3.2.2 Other Aquatic Resources

This delineation also evaluated the presence of aquatic resources other than wetlands potentially subject to USACE's jurisdiction. In non-tidal areas, USACE maintains jurisdiction over areas below the OHWM in water features such as navigable streams, rivers, playas, and lakes; interstate waters; and tributaries to navigable waters.

The survey team delineated non-wetland aquatic features based on the presence of a bed and bank and an OHWM (Curtis and Lichvar 2010; Lichvar and McColley 2008; USACE 2005). Potentially jurisdictional non-wetland features were delineated along the OHWM. If a feature did not exhibit a bed and bank and an OHWM, and did not show distinct vegetation changes, it was not further evaluated as a potential aquatic resource or considered to be a potentially jurisdictional water.

Perennial Streams

Perennial streams are those that usually flow continuously during typical years, or with low to no flow during short periods during drier years. Perennial streams are supported by groundwater inflows and where precipitation runoff (melting snow or rainwater) supplements the stream flows.

Intermittent Streams

Intermittent streams are channels that flow during most or parts of the year. An intermittent stream obtains its flow from both surface runoff and groundwater. Rainfall can also supplement stream flow but is not the primary water source of base flow.

Ephemeral Streams

Ephemeral streams are supported solely by precipitation events and are always above the water table. These streams are likely to flow only during and shortly after precipitation events. Ephemeral channels can be distinguished from swales and erosion features by receiving flows sufficiently often (typically at least every year) to maintain a clear and definable OHWM.

The survey team identified most non-perennial streams as ephemeral. A few streams were identified as intermittent, but the exact status of several non-perennial streams was unclear during the field surveys. Therefore, in this report, all non-perennial streams are dually classified as ephemeral/ intermittent.

3.2.3 Observations Pertaining to Jurisdictional Status of Delineated Aquatic Resources

USACE considers an area to be a wetland if it is characterized by the three parameters of hydrophytic vegetation, hydric soils, and wetland hydrology. Other aquatic resources are identified based on evidence of an OHWM. However, as described in Section 2.1, Section 404 of the Clean Water Act, for these resources to be subject to regulation under the CWA, they also must meet jurisdictional criteria.

Under current guidance, USACE asserts jurisdiction over wetlands that are adjacent to a TNW, relatively permanent non-navigable tributaries of TNW, and wetlands that directly abut relatively permanent non-navigable tributaries of TNW (USACE 2008). A fact-specific analysis is used to determine whether wetlands that are adjacent to, but not abutting, a non-navigable tributaries have a significant nexus with a TNW (USACE 2008). Wetlands adjacent to non-navigable tributaries that lack a significant nexus and any wetlands determined to be isolated would not be subject to CWA jurisdiction if they do not have an identifiable connection to interstate or foreign commerce and they do not include interstate waters.

The survey team recorded observations regarding the circumstances of delineated aquatic resources, circumstances such as the location of wetland features in relation to tributaries, surface water connections, and apparent flow regimes. Additional information regarding the jurisdictional status of delineated aquatic resources might be gathered and considered during a future Section 404 permitting process; however, this report is limited to a general discussion on the jurisdictional status of delineated aquatic resources provided in Section 6.1, Jurisdictional Status of Delineated Aquatic Resources.

4.0 Environmental Setting

The three alternative routes cross Uintah, Duchesne, Carbon, and Utah Counties in Utah. Duchesne and Uintah Counties occupy most of what is known as the Uinta Basin. The Uinta Basin is bounded on the north by the Uinta Mountains, on the south by the Tavaputs Plateau, on the west by the Wasatch Mountains, and on the east by elevated terrain that separates it from the Piceance Basin in Colorado. The Uintah and Ouray Reservation covers a substantial portion of the Uinta Basin. The basin is the geological remains of prehistoric Uinta Lake, which was formed during the late Tertiary period. Sediment was deposited in the lake bottom during this time, forming what is now gilsonite, oil shale, tar sands, and oil (USDA NRCS, no date; Utah Division of Air Quality 2019).

Most of the alternative study areas are part of the Colorado Plateau Ecoregion and are composed of Semiarid Benchlands and Canyonlands, Escarpments, and the Uinta Basin Floor subregions (USGS 2001). These are generally described as follows:

- The **Semiarid Benchlands and Canyonlands subregion** is characterized by benches and mesas covered with broad grass, shrub, and woodlands. Bedrock exposures are common and common plant species include warm season grasses, winterfat, Mormon tea, four-wing saltbush, sagebrush, and pinyon and juniper woodlands.
- The **Escarpments subregion** is characterized by deeply dissected cliff-bench complexes that ascend from lower regions to the mountain rims. Common vegetation includes Douglas-fir forest on steep, north-facing slopes at higher elevations to desert and semidesert grassland or shrubland on lower, drier sites.
- The **Uinta Basin Floor subregion** lies in a large basin that is enclosed by the Uinta Mountains and Tavaputs Plateau. Precipitation is typically low and soils are arid, but the area receives stream runoff from the nearby mountains. Stream runoff is often diverted for crop and pasture irrigation on gentle slopes and the valley floor.

A small portion of the study areas is in the Wasatch and Uinta Mountains ecoregion and includes the Wasatch Montane Zone and Mountain Valleys subregions (USGS 2001). The Wasatch Mountain zone consists of forested mountains and plateaus where Douglas-fir and aspen forests are common and Engelmann spruce and subalpine fir grow on steep, north-facing slopes.

The Mountain Valleys subregion, which is mostly unforested, contains terraces, floodplains, alluvial fans, and hills and is naturally dominated by sagebrush. Irrigated cropland, irrigated pastureland, and rangeland are common.

4.1 Existing Field Conditions

The delineation field survey was conducted during July through September 2014 and April through November 2019. Weather data were obtained from historic records collected in Duchesne, Utah (U.S. Climate Data 2019).

During the months of July to September 2014, the average mean temperatures ranged from 61.7 to 71.5 degrees Fahrenheit (°F) in Duchesne. Site conditions were atypical for this time of year, with precipitation trending above average. In August and September, Duchesne received a total of 6.07 inches of precipitation, compared to average total of 2.48 inches. August was much colder than normal, with an average high of 77.5 °F, which is 6.5 °F below average.

The field survey in 2019 began at the end of April and ended in early November. This survey period followed a heavy snow year in which Duchesne received 34.18 inches of snow in January through March, when the average snowfall for that period is 17 inches. May also had a considerable amount of precipitation with 3.12 inches compared to the average of 0.98 inch. Site conditions in the following months remained fairly typical, with precipitation rates that trended below average and temperatures that trended just slightly above normal. The hottest month during the survey period was July, which had an average high temperature of 89 °F, which is 2 °F warmer than usual. July was followed by two additional months during which the average high temperatures were 3 to 4 °F warmer than normal.

4.1.1 General Hydrology

Each of the alternative's study areas included segments of numerous perennial and intermittent/ephemeral streams. Some wetlands are directly supported by streams, and others are supported by shallow groundwater. Irrigation diversions from streams, constructed conveyances (canals, ditches, pipelines), and open water impoundments are common in agricultural areas.

The U.S. Geological Survey Hydrologic Unit Maps divide and sub-divide the United States into successively smaller hydrologic units nested within each other (USGS 2019b). Each hydrologic unit is identified by a unique hydrologic unit code (HUC). The HUC for the largest geographic area (regions) is 2 digits. All of the alternative study areas are entirely located within the Upper Colorado Region (HUC 14). Accordingly, perennial streams in the study areas are hydrologically connected downstream to the Colorado River. The Price River is the biggest perennial stream in the study areas. Willow Creek and Beaver Creek are smaller streams that flow into the Price River. Indian Creek is a moderately sized perennial stream that flows into the Strawberry River beyond the study areas, and the Strawberry River flows into the Duchesne River. Antelope Creek, a smaller tributary, flows into the Duchesne River. The Duchesne River and the Price River both flow into the Green River, which is a major tributary of the Colorado River. Argyle Creek is a moderately sized perennial stream that flows into the Green River.

Cataloging units are relatively smaller geographic areas that are identified by an 8-digit HUC and are commonly used as watersheds for development planning and resource evaluations. Table 4-1 lists the name and 8-digit HUC for the cataloging units for each of the study areas.

Table 4-1. Watersheds in the Study Areas

Watershed[a]		Study Area		
Name	8-digit HUC	Indian Canyon	Wells Draw	Whitmore Park
Duchesne	14060003	✓	✓	✓
Lower Green–Desolation Canyon	14060005	✓	✓	✓
Price	14060007	✓	✓	✓
Strawberry	14060004	✓		✓

[a] Source: USGS 2019b

4.1.2 General Soil Conditions

The soil types in the study areas are described in three separate reports (provided in Appendix E, NRCS Soil Resources) for the Indian Canyon, Wells Draw, and Whitmore Park study areas (USDA NRCS 2019b). Appendix E-1, Soil Types and Associated Hydrologic Soil Groups, Hydric Ratings, and Acreage in Each Study Area, summarizes the soil types and acreages for each soil type in the study areas as well as the hydric soil rating and hydrologic soil group for each soil type. Ninety-two individual soil types were identified among the three study areas. Locations where formal soil data was not available are listed under "No Digital Data Available" in Appendix E-1. Open water areas are listed under "Water."

The hydric soil rating indicates the percentage of a soil type that meets the criteria for hydric soils. Hydric soils are defined by the National Technical Committee for Hydric Soils as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation (USDA NRCS 2019b). If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make on-site determinations of hydric soils are specified in *Field Indicators of Hydric Soils in the United States* (USDA NRCS 2018). Only four soil types had a hydric soil rating greater than zero (refer to Appendix E-1).

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. The four groups are:

- **Group A:** Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
- **Group B:** Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission
- **Group C:** Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.
- **Group D:** Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Some soils are assigned a dual hydrologic group (A/D, B/D, or C/D). In this case, the first letter is for drained areas, and the second is for undrained areas. Seventeen soil types are rated as A or B (moderate to high infiltration) and 75 soil types are rated as C or B (slow to very slow infiltration).

4.1.3 General Plant Community Types

The GAP/LANDFIRE National Terrestrial Ecosystems data set is produced by the U.S. Geological Survey and includes detailed vegetation and land cover patterns for the continental United States. This data set describes various vegetation communities such as Inter-Mountain Basins Big Sagebrush Shrubland, Colorado Plateau Pinyon-Juniper Woodland, and Rocky Mountain Aspen Forest and Woodland. Over 30 of these vegetation communities are present in the Indian Canyon, Wells Draw, and Whitmore Park study areas.

The survey team categorized the GAP/LANDFIRE vegetation communities in the study areas into six broad land cover types: agriculture/altered, badland/bedrock, forest/woodland, meadow/grassland, open water, and shrubland. For descriptions of the land cover types and their corresponding vegetation communities, refer to the *Biological Resources Baseline Environment Technical Memorandum* (HDR 2019) prepared for this project.

The forest/woodland cover type includes riparian communities. At relatively moderate to high elevations in the study areas, dominant species along perennial streams include: *Populus angustifolia, Salix* species, *Rosa woodsii*, *Cornus sericea*, *Ribes aureum*, and *Prunus virginiana*. At lower elevations, riparian areas are mainly dominated by *Tamarix* species, *Salix exigua*, and *Elaeagnus angustifolius*.

Wetland communities are discussed in Section 5.0, Results.

5.0 Results

The subsections that follow describe the aquatic resources delineated in each alternative study area, which generally consists of a 1,000-foot-wide corridor. The maps in Appendix A, Aquatic Resource Maps in the Indian Canyon Study Area, Appendix B, Aquatic Resource Maps in the Wells Draw Study Area, and Appendix C, Aquatic Resource Maps in the Whitmore Park Study Area, depict the extent of aquatic resource areas and the locations of wetland and stream delineation sampling points in each alternative study area. A list of observed plant species is provided in Appendix D, List of Plant Species Observed.

5.1 Indian Canyon Study Area

The entire Indian Canyon study area is about 9,716.38 acres and contains a total of 155.67 acres of aquatic resources. These resources consist of wetlands that total 63.07 acres, 0.52 acre of playa, 176,992 linear feet (or about 51.39 acres) of perennial stream channel, 383,857 linear feet (or about 34.23 acres) of ephemeral/intermittent stream channel, 3.36 acres of open water impoundments, and 47,514 linear feet (or about 3.10 acres) of ditches and canals that appear to carry a relatively permanent flow of water.

5.1.1 Wetlands

A total of 63.07 acres of wetland were delineated in the Indian Canyon study area. Additionally, 0.52 acre of playa was delineated in the Indian Canyon study area. By general vegetation cover types, delineated wetlands consist of emergent marsh, shrub-scrub, and wet meadow. Based on the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin Classification; Cowardin et al. 1979), most emergent marsh and wet meadow features in the study area are classified as palustrine emergent wetland, and most shrub-scrub features are classified as palustrine shrub-scrub wetland. Some wetlands in stream channels are classified by the Cowardin Classification as riverine emergent wetland or riverine shrub-scrub wetland. Table 5-1 summarizes all wetland features in the Indian Canyon study area (which is generally 1,000 feet wide) by general vegetation cover types.

Table 5-1. Wetlands in the Indian Canyon Study Area

Wetland Type	Size (acres)[a]
Emergent marsh	0.57
Shrub-scrub	11.17
Wet meadow	51.33
Total	63.07

[a] Displayed values are rounded to two decimal places, so the total might not match the sum of the reported values exactly.

Wetland characteristics in the Indian Canyon study area vary due to several factors including elevation, landscape position, soils, local hydrology, and land use. Functions provided by delineated wetlands generally include providing wildlife habitat, performing biochemical processes such as nutrient uptake, stabilizing channel edges to reduce sedimentation, attenuating peak flooding, and trapping sediments during flooding. The extent of these functions varies by wetland characteristics including whether the wetland's condition is good or degraded. These characteristics are described below for wetlands at general locations in the Indian Canyon study area.

Toward the western end of the Indian Canyon study area, low terrace wetlands are common along the Price River (from about milepost 0 to milepost 3). These resources are mainly wet meadow (Photo 5-1) and shrub-scrub wetlands (Photo 5-2) that are supported by shallow groundwater associated with the Price River and are occasionally inundated by flood flows. Dominant plant species in these wet meadows include *Carex nebrascensis*, *Carex praegracilis*, *Eleocharis palustris*, *Juncus balticus*, and *Phalaris arundinacea*. Shrub-scrub wetlands are dominated by *Salix* species with an herbaceous understory similar to wet meadow communities.

These wetlands generally appear to be in good condition with relatively low cover by invasive species and little evidence of human disturbance. The existing rail line embankment, which abuts wetlands at some locations, is an exception to low disturbance characterization.

Photo 5-1. Wet Meadow along Price River



Photo taken near milepost 2.25 (Appendix A sheet 5).

Photo 5-2. Shrub-Scrub Wetland near Price River



Photo taken near milepost 2.25Y (Appendix A sheet 5).

East of the Price River, wet meadows are relatively common along the high bench area and drainage slopes known as Emma Park (from about milepost 2 to milepost 13). Relatively narrow wet meadows occur within multiple drainage channels. Most of these wetlands are hydrologically supported by intermittent flows through the drainages, and a few of these wetlands abut perennial channels. All of these drainages flow into the Price River. Some larger wet meadows (Photo 5-3) near Emma Park Road appear to be located in a groundwater discharge zone. These wetlands are supported primarily by shallow groundwater, seeps, and springs. Dominant plant species in these wet meadows include *Carex nebrascensis*, *Carex praegracilis*, *Eleocharis palustris*, and *Juncus balticus*.

These wetlands can be generally be characterized as moderately degraded to good condition. Invasive plant cover is generally low, but most of these wetlands are degraded by livestock grazing, and several wetlands are bisected by Emma Park Road.

Photo 5-3. Wet Meadow in Emma Park



Photo taken near milepost 2.75 (Appendix A sheet 7).

Within Indian Canyon (from about milepost 21 to milepost 46), multiple relatively small low terrace wetlands are located along Indian Creek. These resources are mainly wet meadow (Photo 5-4) and shrub-scrub wetlands (Photo 5-5) that are supported by shallow groundwater associated with Indian Creek and are occasionally inundated by flood flows. Additionally, a few relatively large wet meadows (Photo 5-6) were delineated on the floor of Indian Canyon, above Indian Creek's low terraces. These wet meadows appear to be supported by a combination of shallow groundwater and irrigation diversions or return flows. Beaver dams, which were observed at many locations, impound some stream flows and appear to be creating alluvial dynamics to support wetlands.

In addition to wet meadow and shrub-scrub wetlands, a few emergent marsh wetlands were delineated. Dominant plant species in wet meadows include *Carex nebrascensis*, *Eleocharis palustris*, and *Juncus balticus*. Shrub-scrub wetlands are dominated by *Salix* species at moderate to higher elevations in the canyon, while dominant species at lower elevations include *Tamarix* species, *Salix exigua*, and *Elaeagnus angustifolius*. Emergent marsh wetlands are dominated by *Carex nebrascensis*, *Phalaris arundinacea*, *Phragmites australis*, *Schoenoplectus acutus*, and *Typha latifolia*.

Apart from a few wetlands dominated by invaisive species at lower elevations, most low terrace weltands can be characterized as in good condition. The larger wet meadows appear to be moderately degraded by livestock grazing.

Photo 5-4. Low Terrace Wet Meadow along Indian Creek in Upper Indian Canyon



Photo taken near milepost 26.50 (Appendix A sheet 47).

Photo 5-5. Shrub-Scrub Wetland near Indian Creek



Photo taken near milepost 29.00 (Appendix A sheet 52).

Photo 5-6. Wet Meadow in Indian Canyon



Photo taken near milepost 45.50 (Appendix A sheet 73).

From east of Indian Canyon to the eastern end of the study area (from about milepost 46 to milepost 80), wetlands are uncommon. A few wet meadow and emergent marsh wetlands appear to be associated with irrigation drainages and impoundments. The condition of these wetlands has been degraded by adjacent agricultural land use and relatively high cover by invasive plants (*Phalaris arundinacea* and *Phragmites australis)*.

5.1.2 Other (Non-wetland) Aquatic Resources

Streams

A total of 560,849 linear feet (or about 85.62 acres) of stream channels were delineated in the Indian Canyon study area. Twelve named streams occur in the study area: Antelope Creek, Argyle Creek, Beaver Creek, Cripple Creek, Fivemile Creek, Horse Creek, Indian Creek, KP Creek, Kyune Creek, Price River, West Fork Willow Creek, and Willow Creek (USGS 2019a). Appendix A, Aquatic Resource Maps in the Indian Canyon Study Area, includes the locations of streams delineated by type (perennial and ephemeral/intermittent). Table 5-2 summarizes all stream features delineated in the Indian Canyon study area.

Table 5-2. Streams in the Indian Canyon Study Area

Stream Type	Length (feet)[a]	Size (acres)[b]
Perennial	176,992	51.39
Ephemeral/intermittent	383,857	34.23
Total	560,849	85.62

[a] Displayed values are rounded to the nearest whole linear foot.

[b] Displayed values are rounded to two decimal places.

The Price River (Photo 5-7) is the largest perennial stream in the Indian Canyon study area, where its width various from about 20 to 45 feet. Apart from an existing rail line embankment along stream banks and associated crossings at some locations, this stream appears to be in relatively good condition, generally maintaining natural meanders and floodplain functions to support low terrace wetlands and some woody riparian habitat. In the Price River area and eastward through Emma Park (from about milepost 0 to milepost 13), there are a few perennial streams (Photo 5-8) and many ephemeral/intermittent streams (Photo 5-9) that drain into the Price River. Many of these channels are highly incised. These conditions might be due to a combination of naturally erosive soils and livestock grazing in the Price River watershed.

Photo 5-7. Price River



Photo taken near milepost 0.50 (Appendix A sheet 2).

Photo 5-8. Willow Creek



Photo taken near milepost 23.25 (Appendix A sheet 26).

Photo 5-9. Ephemeral Stream in Emma Park



Photo taken near milepost 5.00 (Appendix A sheet 11).

Indian Creek (Photo 5-10 and Photo 5-11) is the longest perennial stream in the Indian Canyon study area (from about milepost 21 to milepost 46). Indian Canyon Creek begins near the top of Indian Canyon and drains into the Strawberry River near the mouth of the canyon, north of the study area. The characteristics of Indian Creek are quite variable at different elevations and several segments contain irrigation diversions. Several portions of this stream in upper Indian Canyon appear to be in good condition with natural meanders, clear flows along a cobble substrate, low terraces, and abundant woody riparian vegetation.

Other portions of Indian Creek, mainly in the middle to lower portions of Indian Canyon, are highly modified and diverted for irrigation. In some places, at the time of the survey, nearly all surface flows were diverted into adjacent ditches. In the lower portions of Indian Canyon, Indian Creek becomes increasingly incised with steep unvegetated banks and patches of *Tamarisk* species at the base of the banks. Additionally, multiple ephemeral/intermittent streams were delineated in the study area that drain into Indian Canyon. The characteristics these streams are typical of intermittent and ephemeral streams in mountainous terrain. Development of alluvial features such as floodplains and bankfull benches was generally lacking along the steeper drainages.

Photo 5-10. Indian Creek in Upper Indian Canyon



Photo taken near milepost 26.75 (Appendix A sheet 47).

Photo 5-11. Indian Creek in Lower Indian Canyon



Photo taken near milepost 41.25 (Appendix A sheet 73).

East of Indian Canyon (from about milepost 46 to milepost 80), the study area traverses low arid benchlands. A few perennial streams and numerous ephemeral/intermittent streams (Photo 5-12 and Photo 5-13) are found in the study area. The stream gradients in the area varies from relatively steep to relatively low. At lower gradients, development of alluvial features such as floodplains, braiding, low flow channels, and bankfull benches is generally present. Many portions of these streams are in good condition, but some segments are heavily disturbed by land uses such as oil and gas development.

Photo 5-12. Ephemeral Stream East of Indian Canyon



Photo taken near milepost 76.5 (Appendix A sheet 136).

Photo 5-13. Ephemeral Stream on Benchlands East of Indian Canyon



Photo taken near milepost 74.00 (Appendix A sheet 132).

Canals, Ponds, and Ditches

A total of 47,514 linear feet (or about 3.10 acres) of canals and ditches and 3.36 acres of open water features were delineated in the Indian Canyon study area. Most of the canals and ditches are located in either Indian Canyon as diversion to Indian Creek or in the Myton Bench area. These include the Upper Pleasant Valley Canal in the Myton Bench area. Delineated open water features generally consist of constructed impoundments such as irrigation ponds and stock ponds, and beaver ponds along Indian Creek. Table 5-3 summarizes all canals, ditches, and open water features (such as ponds) delineated in the Indian Canyon study area.

Table 5-3. Canals, Ditches, and Open Water Impoundments in the Indian Canyon Study Area

Water Type	Length (feet)[a]	Size (acres)[b]
Canal/ditch	47,514	3.10
Open water impoundment	—	3.36

[a] Displayed values are rounded to the nearest whole linear foot.

[b] Displayed values are rounded to two decimal places.

5.2 Wells Draw Study Area

The entire Wells Draw study area is about 12,472.98 acres and contains a total of 227.62 acres of aquatic resources. These resources consist of wetlands that total 61.95 acres, 4.96 acres of playa, 46,167 linear feet (or about 16.12 acres) of perennial stream channel, 461,886 linear feet (or about 124.56 acres) of ephemeral/intermittent stream channel, 16.12 acres of open water impoundments, and 24,040 linear feet (or about 3.25 acres) of ditches and canals.

Several descriptions and representative photos of aquatic resources provided in Section 5.1.1 and Section 5.1.2 for the Indian Canyon study area also apply to coinciding portions of the Wells Draw study area (about milepost 0 to milepost 19). Generally, these are aquatic resources in the Price River and Emma Park areas. The descriptions and representative photos provided in Section 5.2.1 and Section 5.2.2 pertain to additional aquatic resources that are specific to the Wells Draw study area.

5.2.1 Wetlands

A total of 61.95 acres of wetland were delineated in the Wells Draw study area. Additionally, 4.96 acres of playa were delineated in the Wells Draw study area. By general vegetation cover types, delineated wetlands consist of emergent marsh, shrub-scrub, and wet meadow. Table 5-4 summarizes all wetland delineated features in the Wells Draw study area (which is generally 1,000 feet wide) by general vegetation cover types.

Table 5-4. Wetlands in the Wells Draw Study Area

Wetland Type	Size (acres)[a]
Emergent marsh	16.21
Shrub-scrub	5.94
Wet meadow	39.80
Total	61.95

[a] Displayed values are rounded to two decimal places, so the total might not match the sum of the reported values exactly.

Wetlands located toward the top of Argyle Canyon (from about milepost 21 to milepost 23) and wetlands located in the Myton Bench area (from about milepost 81 to milepost 90) are specific to the Wells Draw study area. Low terrace wetlands (Photo 5-14) are common along Argyle Creek, and most of these floodplain areas are augmented by beaver dams. Shrub-scrub wetlands dominated by *Salix* species are the most common wetland type in this area. A few wet meadow and emergent marsh wetlands are also present. Though a dirt road parallels Argyle Creek and there are several culvert crossings in this area. Generally, these wetlands can be characterized as being in good condition.

Photo 5-14. Wetlands along Argyle Creek in Argyle Canyon



Photo taken near milepost 21.50 (Appendix B sheet 39).

Wetlands in the Myton Bench area are mostly associated with irrigation drainages. Many portions of these irrigation drainages are entirely vegetated as emergent marsh wetlands (Photo 5-15). There are also some wet meadow wetlands, dominated by *Distichlis spicata*, adjacent to the emergent marshes. These wetlands appear to be in moderately degraded to good condition, and they are variably affected by agricultural land uses and a cover of invasive plant species (especially *Phragmites australis*).

Photo 5-15. Emergent Marsh on Myton Bench



Photo taken near milepost 84.5 (Appendix B sheet 147).

In addition to wetlands, 4.96 acres of playa were delineated in the Wells Draw study area (Photo 5-16). This acreage includes a large playa in the Myton Bench area. This playa is mostly unvegetated and exhibits hypersaline conditions.

Photo 5-16. Playa in Wells Draw



Photo taken near milepost 88.0 (Appendix B sheet 154).

5.2.2 Other (Non-wetland) Aquatic Resources

Streams

A total of 508,053 linear feet (or about 140.68 acres) of stream channels were delineated in the Wells Draw study area. Seven named streams occur in the study area: Argyle Creek, Beaver Creek, Horse Creek, Kyune Creek, Price River, West Fork Willow Creek, and Willow Creek (USGS 2019a). Appendix B, Aquatic Resource Maps in the Wells Draw Study Area, includes streams delineated by type and the locations of named streams in the study area. Table 5-5 summarizes all stream features delineated in the Wells Draw study area.

Table 5-5. Streams in the Wells Draw Study Area

Stream Type	Length (feet)[a]	Size (acres)[b]
Perennial	46,167	16.12
Ephemeral/intermittent	461,886	124.56
Total	508,053	140.68

[a] Displayed values are rounded to the nearest whole linear foot.

[b] Displayed values are rounded to two decimal places.

Argyle Creek (Photo 5-17) is the main perennial stream that is specific to the Wells Draw study area. It is a relatively high-elevation mountain stream in the study area. Most portions appear to be in relatively good condition, with natural meandering, beaver dam impoundments, low terraces, and woody riparian vegetation. Some locations appear degraded by culvert crossings and livestock grazing.

Numerous ephemeral/intermittent streams (Photo 5-18, Photo 5-19, and Photo 5-20) that are specific to the Wells Draw study area were delineated. In Argyle Canyon, the characteristics of these streams are typical of intermittent and ephemeral streams in mountainous terrain. These streams generally appear to be in good condition and show little evidence of disturbance. At lower elevations with lower-gradients, development of alluvial features such as floodplains, braiding, low flow channels, and bankfull benches is generally present. Many portions of these streams appear to be in good condition, but some segments are heavily disturbed.

Photo 5-17. Argyle Creek in Upper Argyle Canyon



Photo taken near milepost 23.25 (Appendix C sheet 42).

Photo 5-18. Ephemeral Stream in Argyle Canyon



Photo taken near milepost 23.75 (Appendix C sheet 43).

Photo 5-19. Ephemeral Stream near Leland Bench



Photo taken near milepost 92.0 (Appendix C sheet 161).

Photo 5-20. Ephemeral Stream on Myton Bench



Photo taken near milepost 88.5 (Appendix C sheet 155).

Canals, Ponds, and Ditches

A total of 24,040 linear feet (or about 3.25 acres) of canals and ditches and 16.12 acres of open water features were delineated in the Wells Draw study area. Most of the canals and ditches are located in the Myton Bench area. These canals and ditches include the Upper Pleasant Valley Canal, the Lower Pleasant Valley Canal, and the Myton Townsite Canal (Photo 5-21) in the vicinity of the town of Myton. Delineated open water features generally consist of constructed impoundments such as irrigation ponds and stock ponds, and beaver ponds along Argyle Creek. Table 5-6 summarizes all canals, ditches, and open water features delineated in the Wells Draw study area.

Table 5-6. Canals, Ditches, and Open Water Impoundments in the Wells Draw Study Area

Water Type	Length (feet)[a]	Size (acres)[b]
Canal/ditch	24,040	3.25
Open water impoundment	—	16.12

[a] Displayed values are rounded to the nearest whole linear foot.

[b] Displayed values are rounded to two decimal places.

Photo 5-21. Myton Townsite Canal



Photo taken near milepost 90.75 (Appendix B sheet 158).

5.3 Whitmore Park Study Area

The entire Whitmore Park study area is about 10,596.77 acres and contains a total of 157.75 acres of aquatic resources. These resources consist of wetlands that total 45.22 acres, 0.43 acre of playa, 184,358 linear feet (or about 53.96 acres) of perennial stream channel, 433,451 linear feet (or about 49.48 acres) of ephemeral/intermittent stream channel, 5.92 acres of open water impoundments, and 43,037 linear feet (or about 2.74 acres) of ditches and canals.

Several descriptions and representative photos of aquatic resources provided in Section 5.1.1 and Section 5.1.2 for the Indian Canyon study area also apply to coinciding portions of the Whitmore Park study area. The descriptions and representative photos provided in Section 5.3.1 and Section 5.3.2 pertain to additional aquatic resources that are specific to the Whitmore Park study area.

5.3.1 Wetlands

A total of 45.22 acres of wetland were delineated in the Whitmore Park study area. Additionally, 0.43 acre of playa was delineated in the Whitmore Park study area. By general vegetation cover types, delineated wetlands consist of emergent marsh, shrub-scrub, and wet meadow. Table 5-7 summarizes all wetland delineated features in the Whitmore Park study area (which is generally 1,000 feet wide) by general vegetation cover types.

Table 5-7. Wetlands in the Whitmore Park Study Area

Wetland Type	Size (acres)[a]
Emergent marsh	0.95
Shrub-scrub	8.38
Wet meadow	35.89
Total	45.22

[a] Displayed values are rounded to two decimal places, so the total might not match the sum of the reported values exactly.

Because the Whitmore Park route coincides with the Indian Canyon route for much of its length, only a few additional wetlands are in the Whitmore Park study area. A few delineated wet meadows in the Emma Park vicinity are specific to the Whitmore Park study area, but their characteristics are similar to those described for the Indian Canyon study area.

5.3.2 Other (Non-wetland) Aquatic Resources

Streams

A total of 560,849 linear feet (or about 85.62 acres) of stream channels were delineated in the Whitmore Park study area. Thirteen named streams occur in the study area: Antelope Creek, Argyle Creek, Beaver Creek, Cripple Creek, Dry Fork, Fivemile Creek, Horse Creek, Indian Creek, KP Creek, Kyune Creek, Price River, Pole Creek, and Willow Creek (USGS 2019a). Appendix C, Aquatic Resource Maps in the Whitmore Park Study Area, includes streams delineated by type and the locations of named streams in the study area. Table 5-8 summarizes all stream features delineated in the Whitmore Park study area.

Table 5-8. Streams in the Whitmore Park Study Area

Stream Type	Length (feet)[a]	Size (acres)[b]
Perennial	184,358	53.96
Ephemeral/intermittent	433,451	49.48
Total	617,809	103.44

[a] Displayed values are rounded to the nearest whole linear foot.

[b] Displayed values are rounded to two decimal places.

Pole Creek (Photo 5-22) is the only perennial stream that is specific to the Whitmore Park study area. It descends from steep mountain slopes down Pole Canyon through Whitmore Park and drains to the Price River. Most portions of Pole Creek in the study area are incised with steep banks. Several ephemeral/intermittent streams were delineated in the Whitmore Park study area that are specific to this study area, and numerous ephemeral/intermittent streams Photo 5-23) were delineated in the segment of the study area east of Duchesne (from about milepost 52 to milepost 62) that is specific to this alternative. Several ephemeral/intermittent streams are highly incised. These conditions might be due to a combination of naturally erosive soils and livestock grazing in the Pole Creek watershed.

Photo 5-22. Pole Creek in Whitmore Park



Photo taken near milepost 19.00 (Appendix C sheet 36).

Photo 5-23. Ephemeral Stream east of Duchesne



Photo taken near milepost 56.00 (Appendix C sheet 100).

Canals, Ponds, and Ditches

A total of 24,040 linear feet (or about 2.74 acres) of canals and ditches and 5.92 acres of open water features were delineated in the Whitmore Park study area. Most of the canals and ditches are located either in Indian Canyon as a diversion to Indian Creek or in the Myton Bench area. These canals and ditches include the Upper Pleasant Valley Canal in the vicinity of Myton. Delineated open water features generally consist of constructed impoundments such as irrigation ponds and stock ponds, and beaver ponds along Indian Creek. Table 5-9 summarizes all canals, ditches, and open water features delineated in the Whitmore Park study area.

Table 5-9. Canals, Ditches, and Open Water Impoundments in the Whitmore Park Study Area

Water Type	Length (feet)[a]	Size (acres)[b]
Canal/ditch	43,037	2.74
Open water impoundment	—	5.92

[a] Displayed values are rounded to the nearest whole linear foot.

[b] Displayed values are rounded to two decimal places.

6.0 Aquatic Resources Summary and Jurisdictional Status

Table 6-1 summarizes all aquatic resources and delineated features in the alternative study areas (which are 1,000-foot-wide corridors surrounding each route). The maps in Appendix A, Aquatic Resource Maps in the Indian Canyon Study Area, Appendix B, Aquatic Resource Maps in the Wells Draw Study Area, and Appendix C, Aquatic Resource Maps in the Whitmore Park Study Area, depict the extent of aquatic resource features.

Table 6-1. Summary of Aquatic Resources in the Alternative Study Areas

Aquatic Resource Type	Study Area					
	Indian Canyon		Wells Draw		Whitmore Park	
	Size (acres)[a]	Length (feet)[b]	Size (acres)[a]	Length (feet)[b]	Size (acres)[a]	Length (feet)[b]
Wetlands and Playa						
Emergent marsh	0.57	—	16.21	—	0.95	—
Shrub-scrub	11.17	—	5.94	—	8.38	—
Wet meadow	51.33	—	39.80	—	35.89	—
Total wetlands	63.07	—	61.95	—	45.22	—
Playa	0.52	—	4.96	—	0.43	—
Streams, Canals, Ditches, and Open Water Impoundments						
Perennial	51.39	176,992	16.12	46,167	53.96	184,358
Ephemeral/intermittent	34.23	383,857	124.56	461,886	49.48	433,451
Total streams	85.62	560,849	140.68	508,053	103.44	617,809
Canals and ditches	3.10	47,514	3.25	24,040	2.74	43,037
Open water impoundments	3.36	—	16.12	—	5.92	—
All Aquatic Resources						
Total aquatic resources	155.67	—	227.62	—	157.75	—

[a] Displayed values are rounded to two decimal places.

[b] Displayed values are rounded to the nearest whole linear foot, so the totals might not match the sum of the reported values exactly.

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6.1 Jurisdictional Status of Delineated Aquatic Resources

Under current regulations and guidance, USACE asserts jurisdiction over relatively permanent waters (that is, tributaries to a TNW that typically flow year-round or have continuous flow at least seasonally) and wetlands that abut relatively permanent waters. For wetlands that do not abut relatively permanent waters and are not adjacent to a TNW, and for tributaries that lack relatively permanent flows (such as ephemeral streams), USACE would decide the jurisdictional status based on a fact-specific analysis to determine whether they have a "significant nexus" with a TNW. Although the jurisdictional status of aquatic resources is determined by USACE, based on the results of this delineation, the proposed railway would include work in WOUS. Most of the aquatic resources delineated appear to be hydrologically linked to downstream waters that eventually drain to the Green River, and the Green River is a TNW.

As a baseline report, this document does not provide information regarding the potential direct impacts of each alternative. The reader is reminded of the 1,000 foot width of the study areas. The permit applicant would coordinate with USACE before constructing the proposed railway to determine permitting requirements under Section 404 of the CWA for construction.

6.2 Additional Information

The attached appendices include supporting information for this delineation:

- Appendix A. Aquatic Resource Maps in the Indian Canyon Study Area
- Appendix B. Aquatic Resource Maps in the Wells Draw Study Area
- Appendix C. Aquatic Resource Maps in the Whitmore Park Study Area
- Appendix D. List of Plant Species Observed
- Appendix E. NRCS Soil Resources
    - Appendix E-1. Soil Types and Associated Hydrologic Soil Groups, Hydric Ratings, and Acreage in Each Study Area
    - Appendix E-2. Custom Soil Resource Report for the Indian Canyon Alternative Study Area
    - Appendix E-3. Custom Soil Resource Report for the Wells Draw Alternative Study Area
    - Appendix E-4. Custom Soil Resource Report for the Whitmore Park Alternative Study Area

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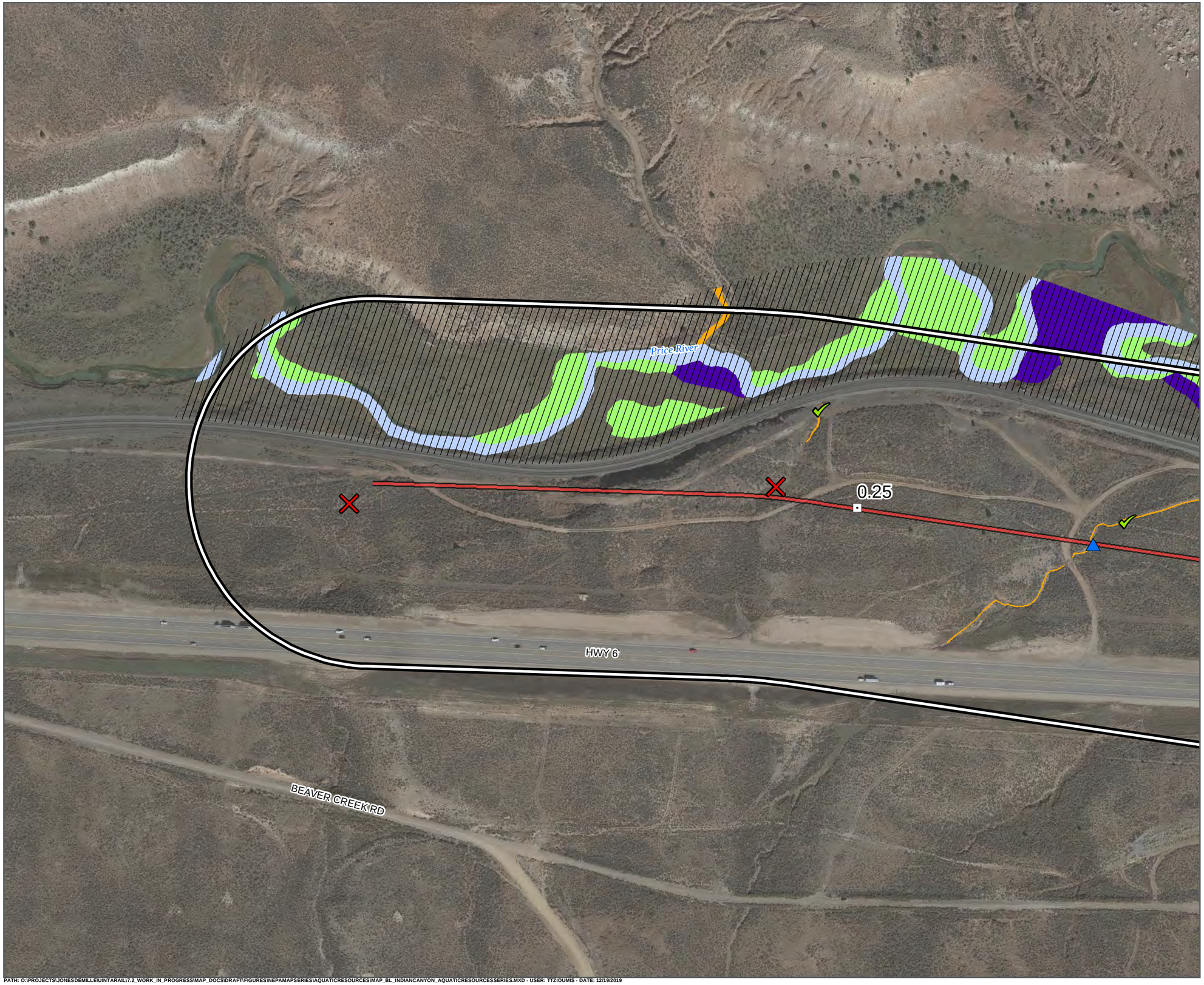
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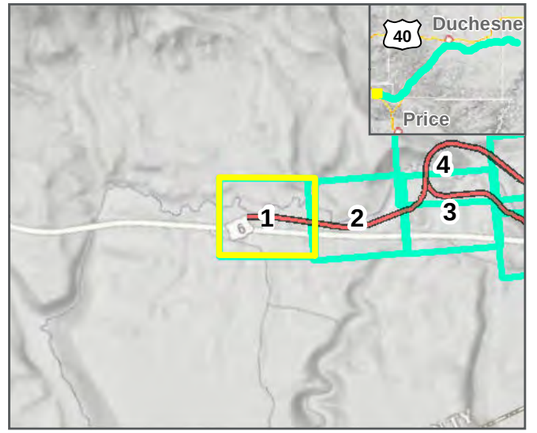
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APPENDIX A

Aquatic Resource Maps in the Indian Canyon Study Area





- Mileposts
- Indian Canyon Centerline
- Areas Not Surveyed (Data Digitized)
- In Point 2019
- Out Point 2019
- In Point 2014
- Out Point 2014
- Waterway Point 2019
- Waterway Points 2014
- Negative Point
- Verified Point
- Wet Meadow
- Emergent Marsh
- Shrub-Scrub
- Playa
- Open Water
- Perennial Stream
- Ephemeral/Intermittent Stream
- Ditch/Canal
- Study Area
- Map Extent (current view in yellow)

INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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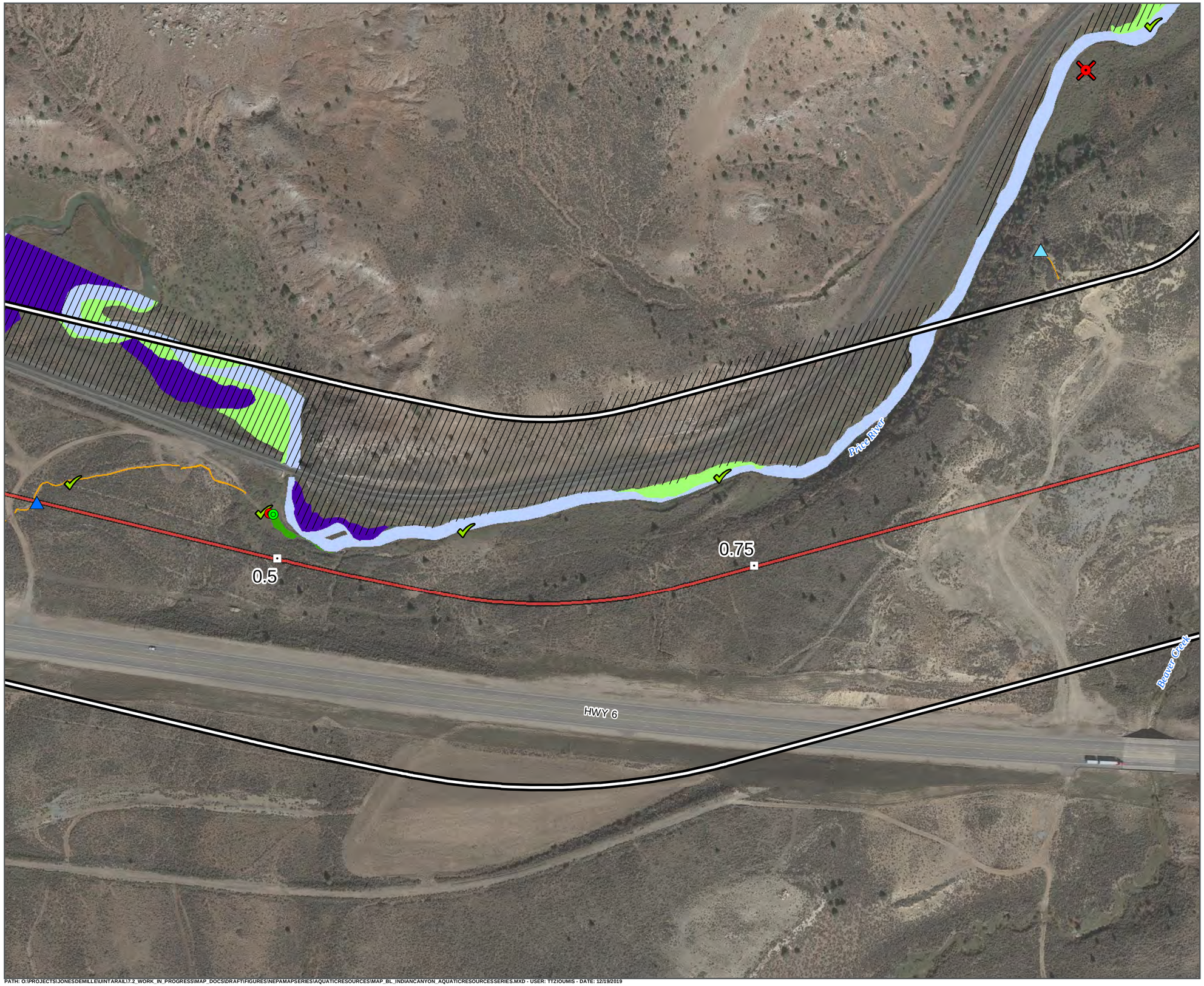
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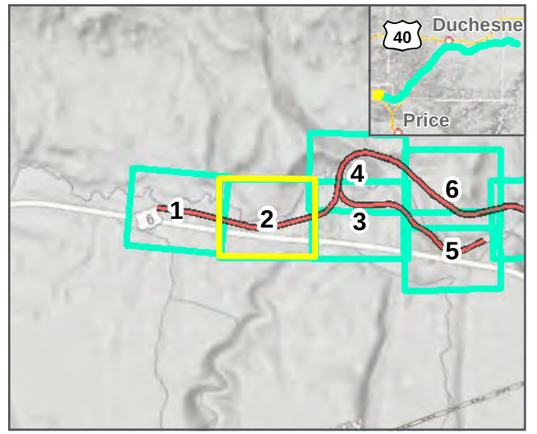
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COODINATE SYSTEM:
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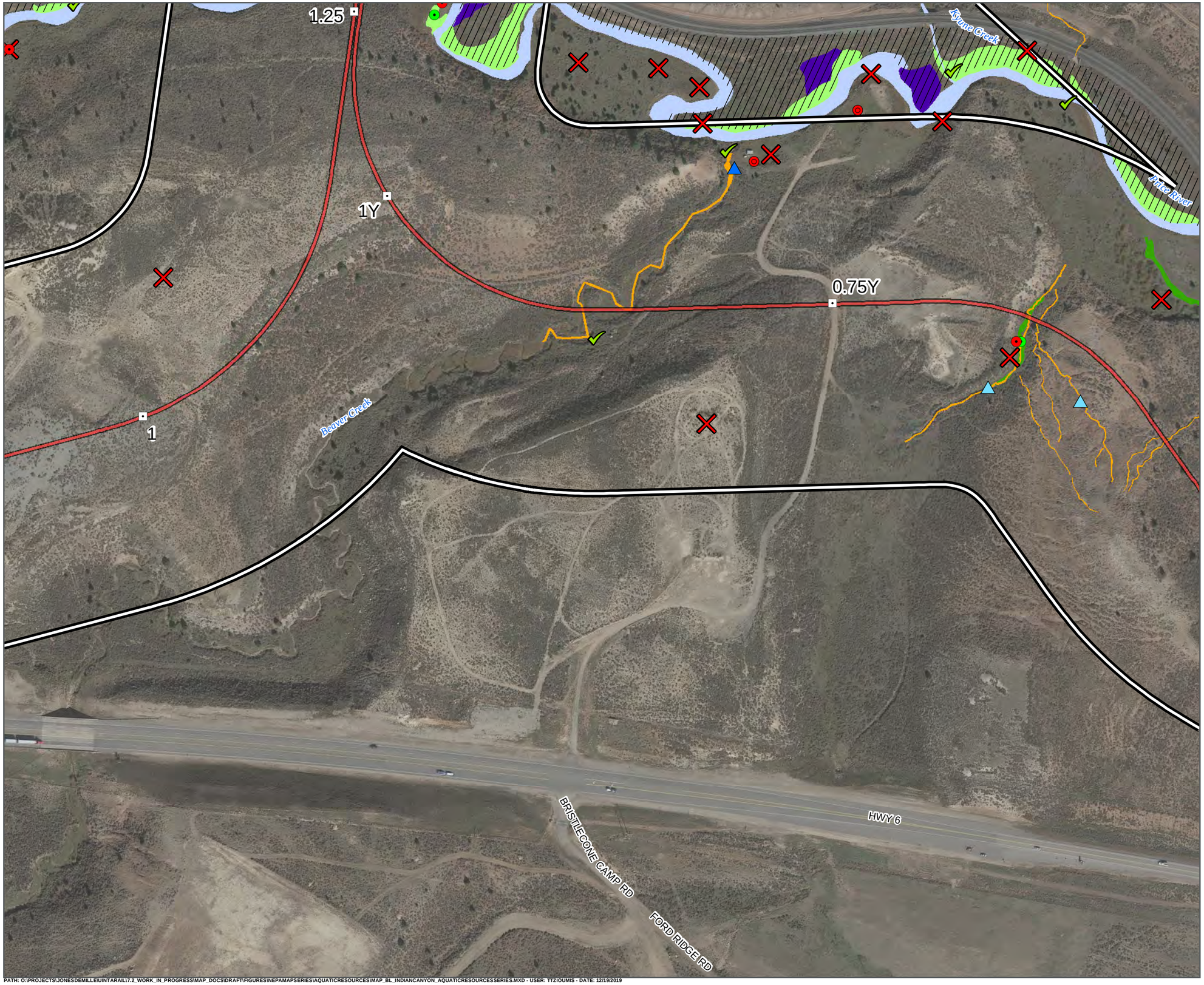
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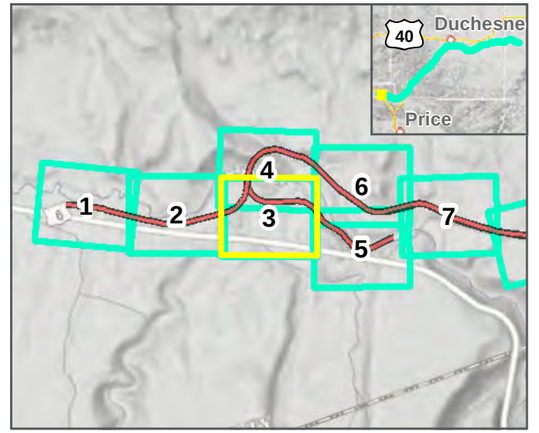
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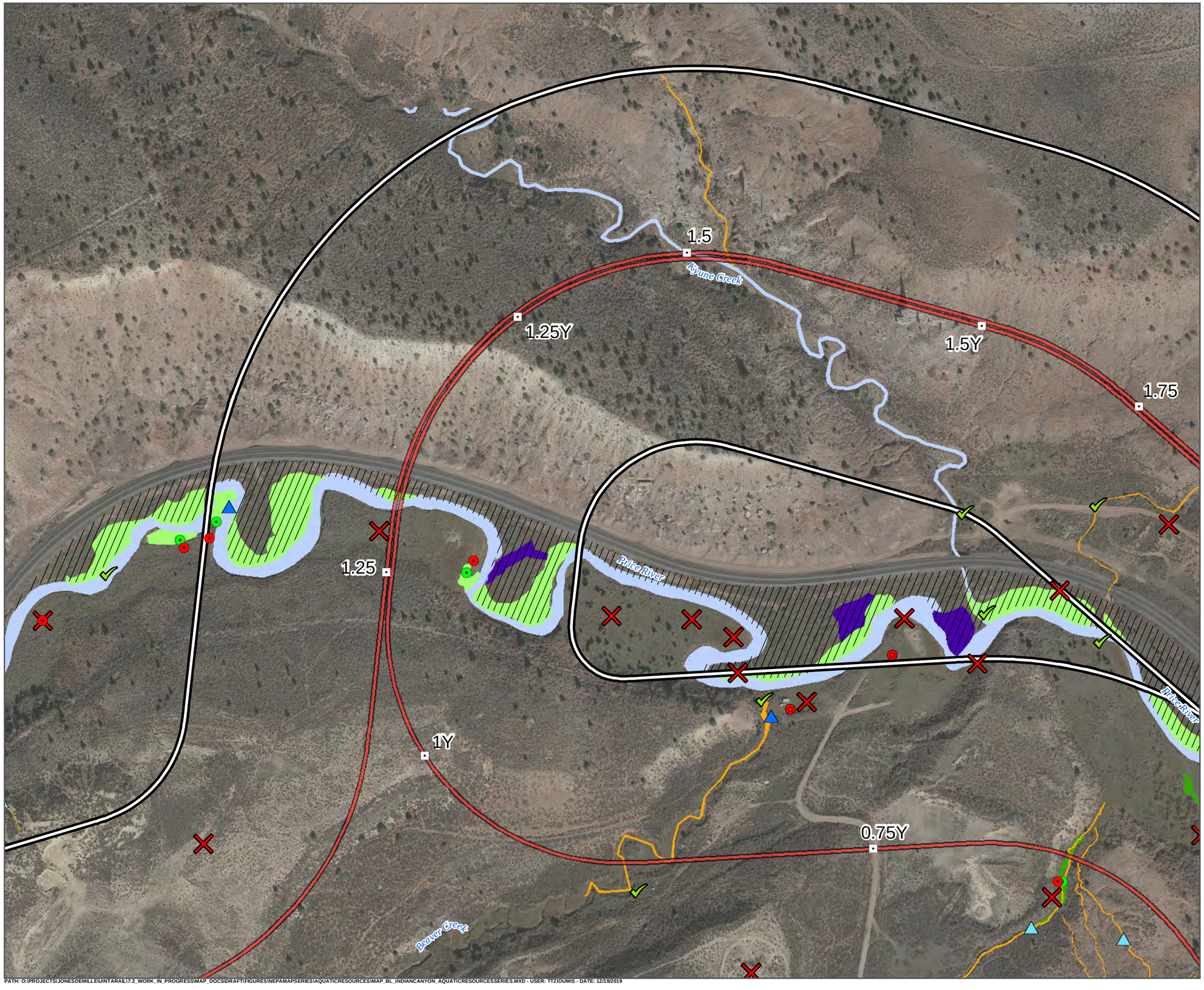
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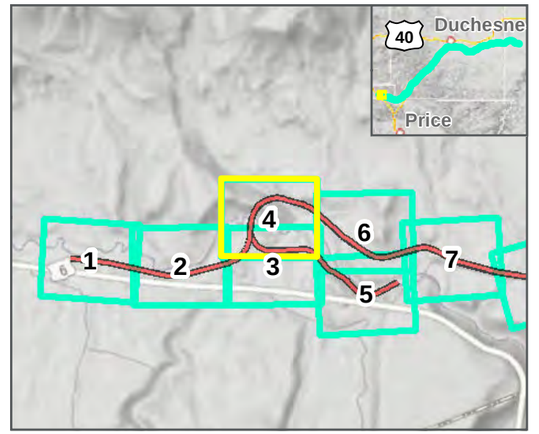
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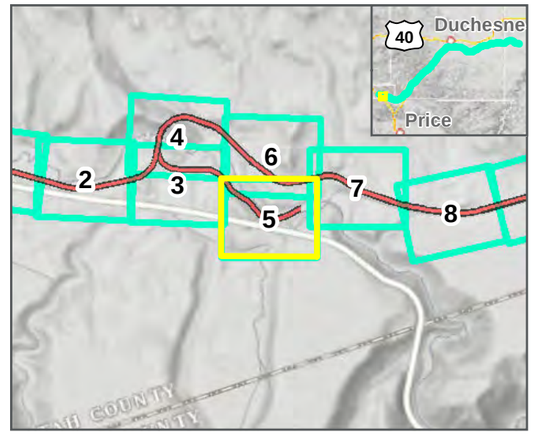
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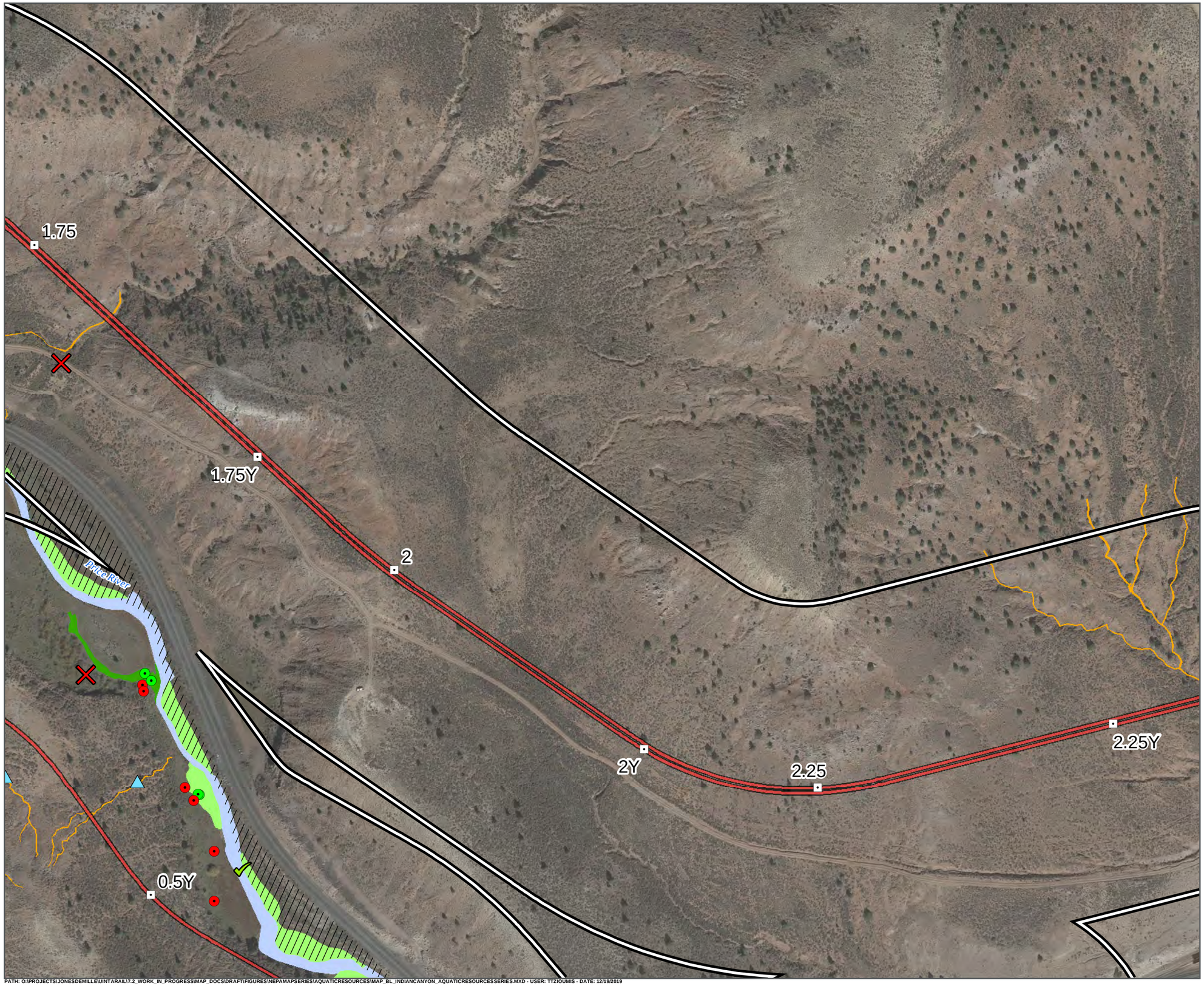
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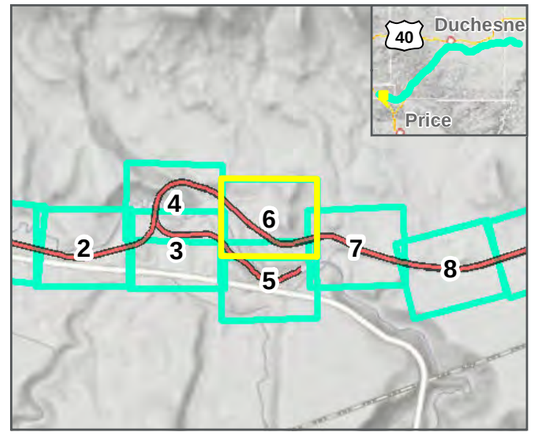
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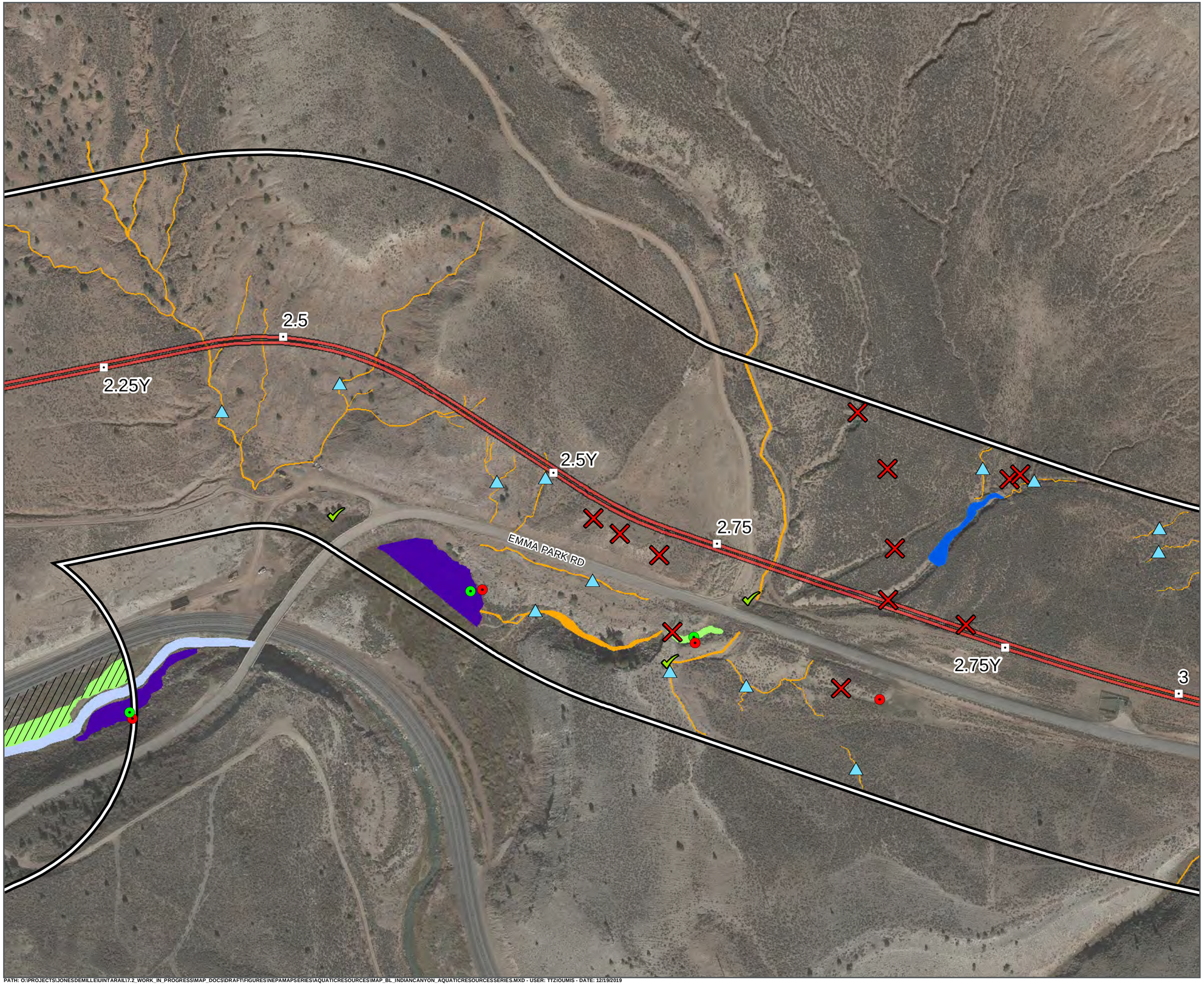
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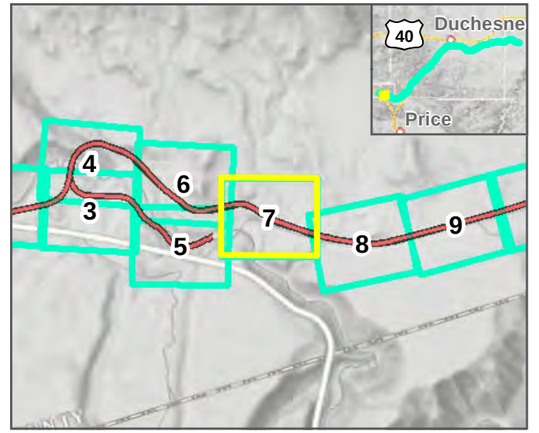
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INDIAN CANYON ALTERNATIVE: 11/22/2019

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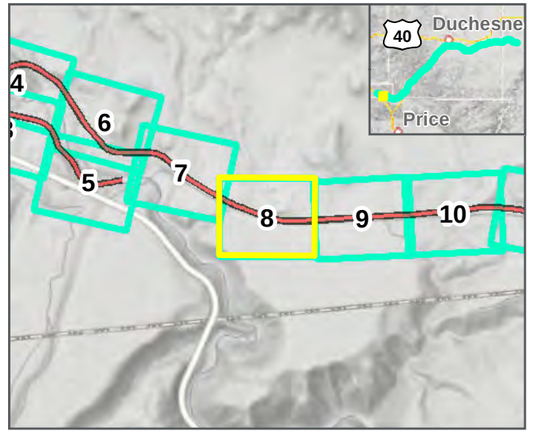
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DECEMBER 2019

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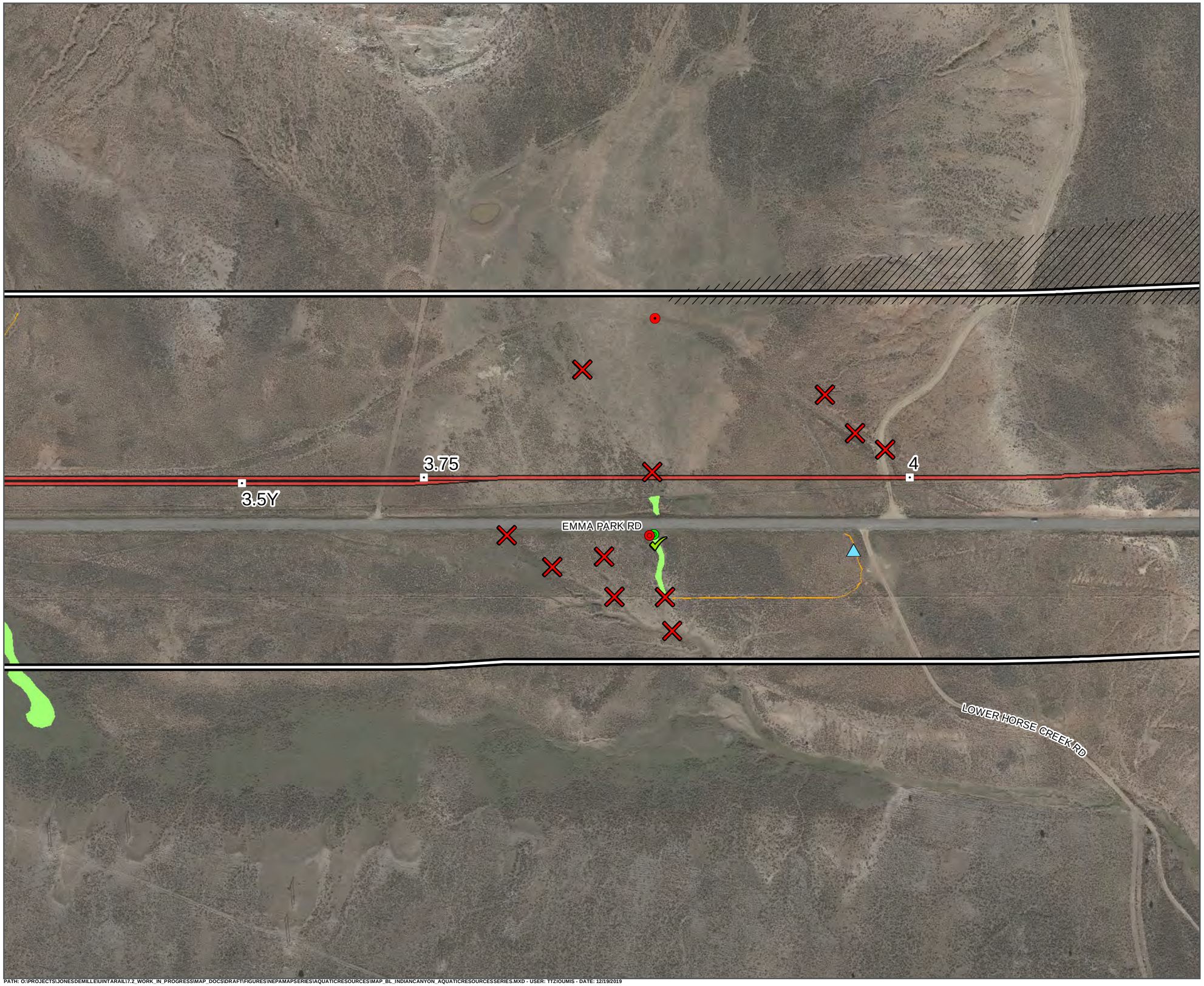
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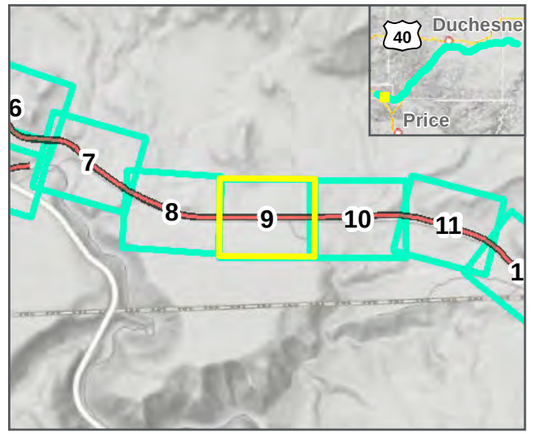
DATA SOURCES:
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Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

7 SEVEN COUNTY INFRASTRUCTURE COALITION

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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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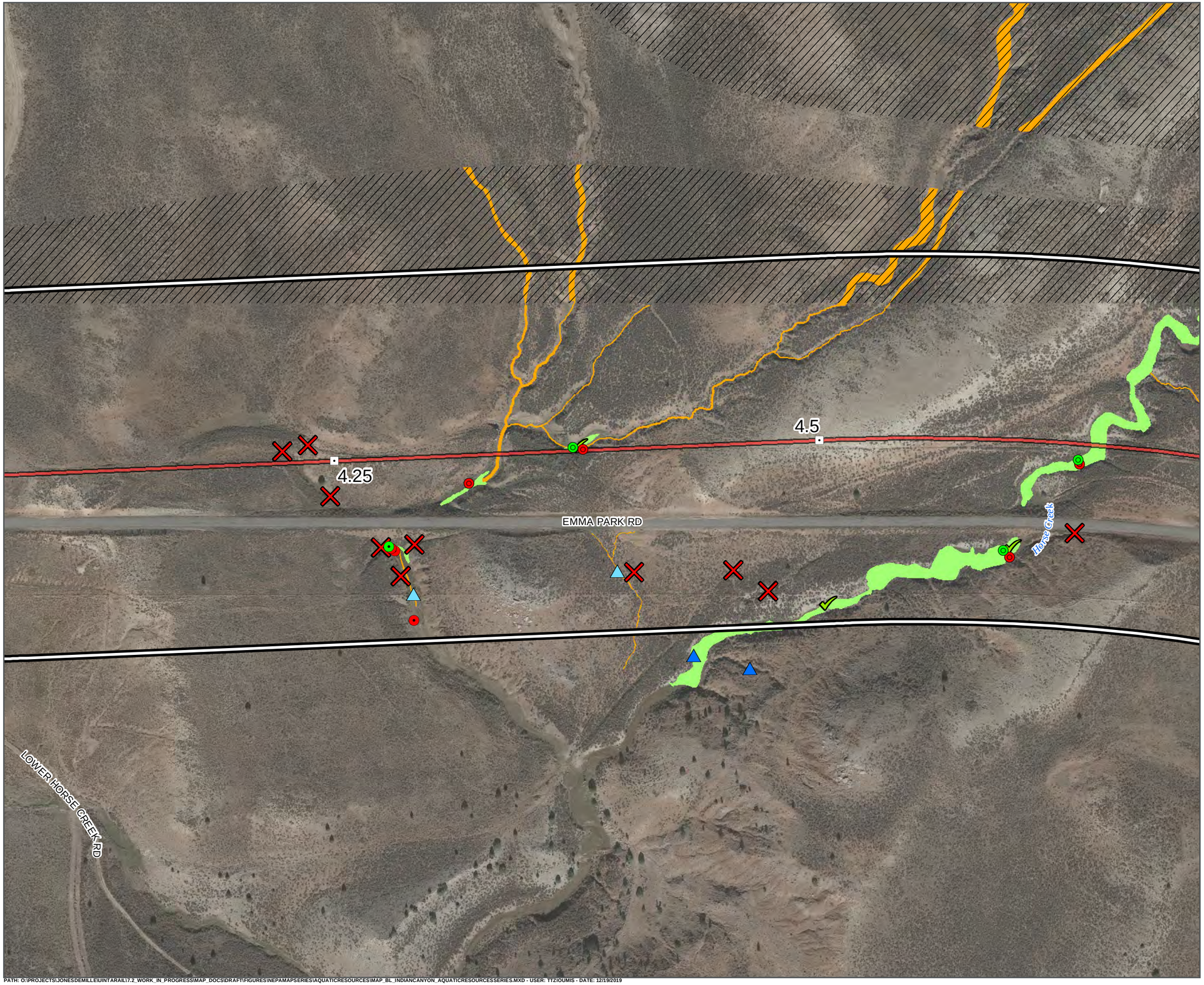
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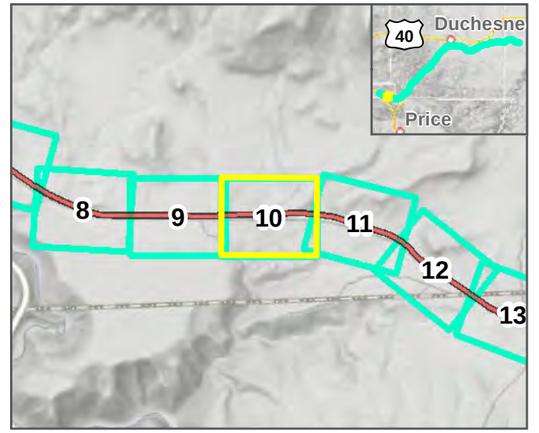
DATA SOURCES:
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SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

N

0 125 250 Feet

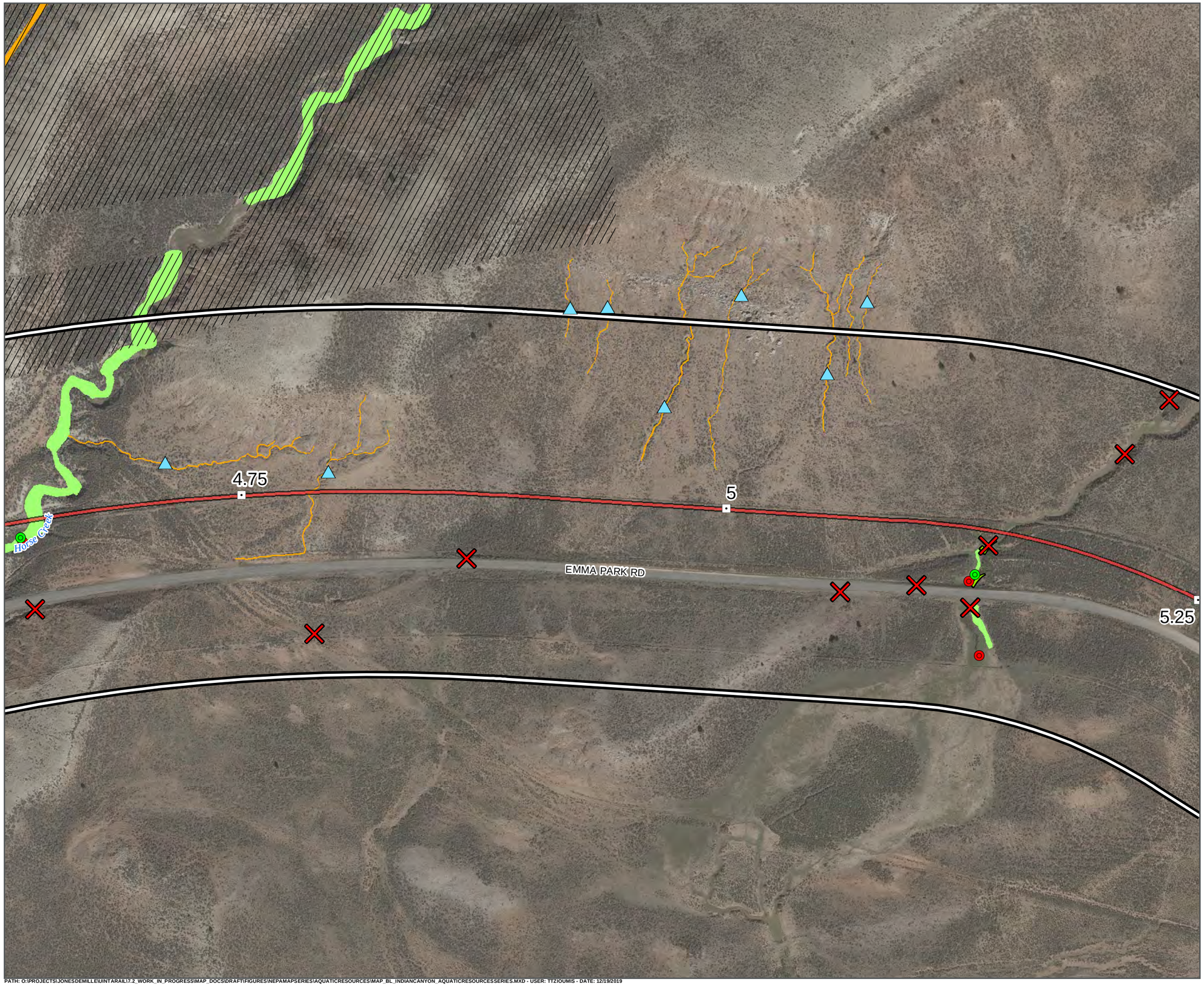
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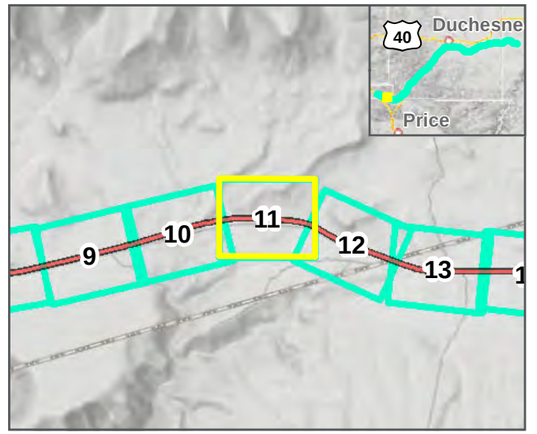
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INDIAN CANYON ALTERNATIVE: 11/22/2019

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DECEMBER 2019

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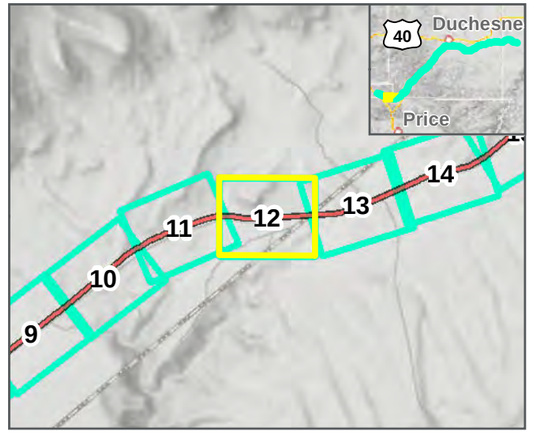
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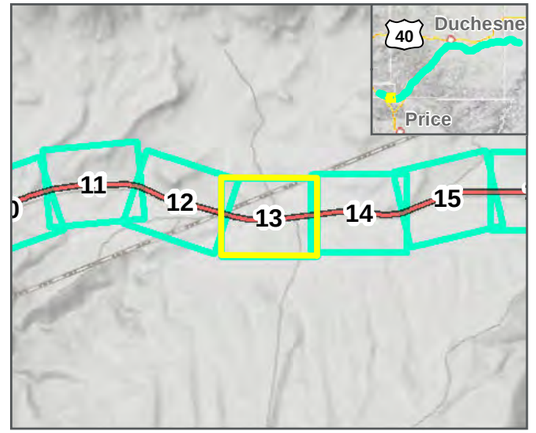
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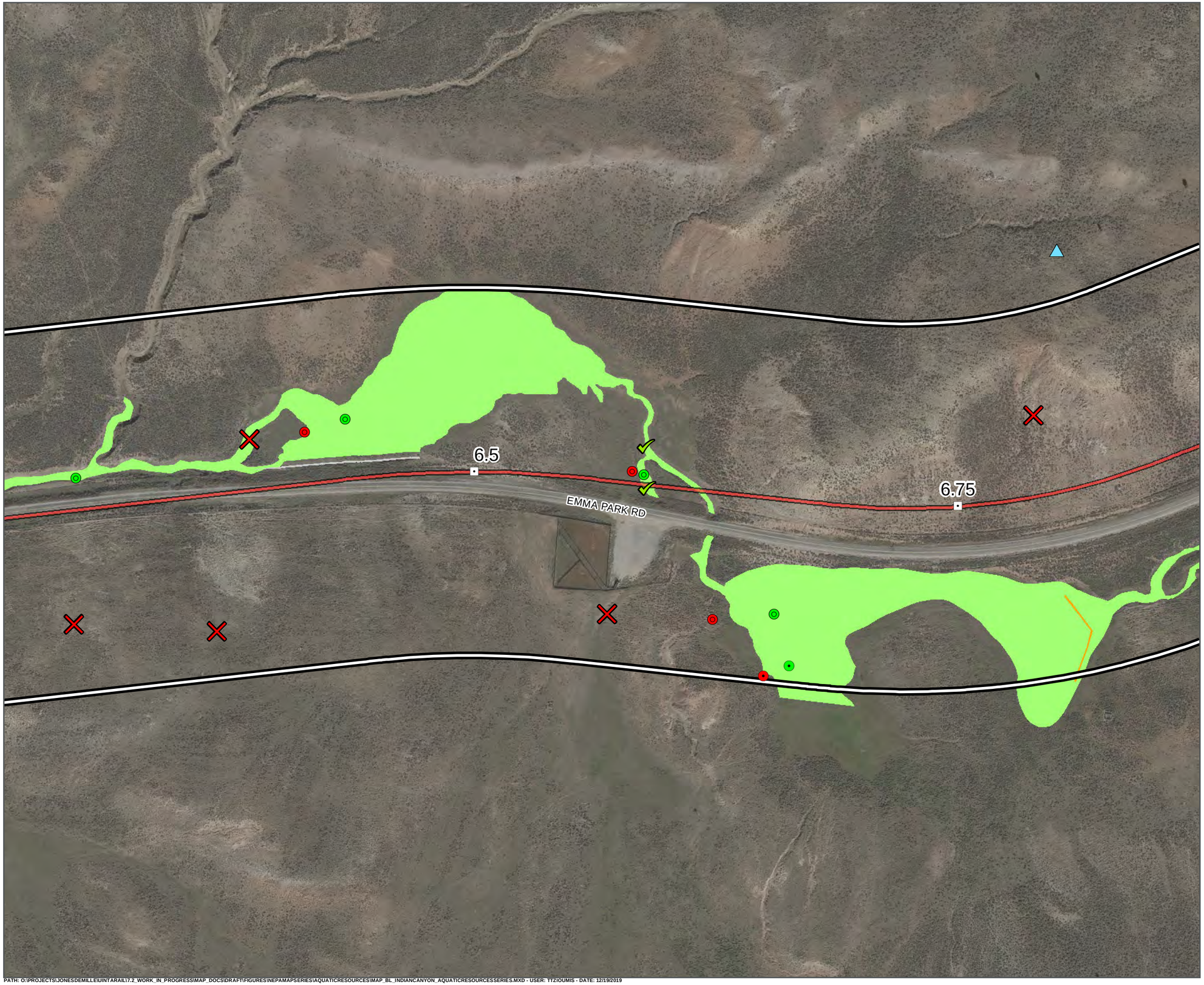
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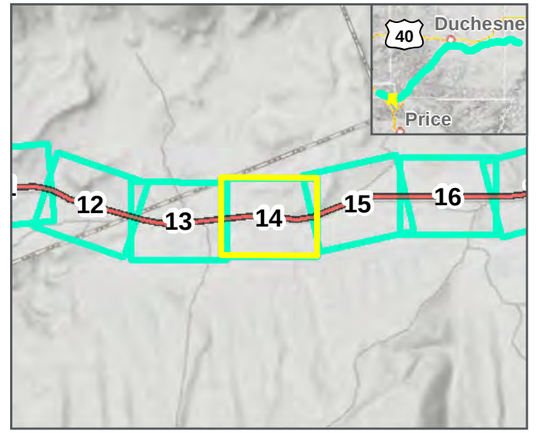
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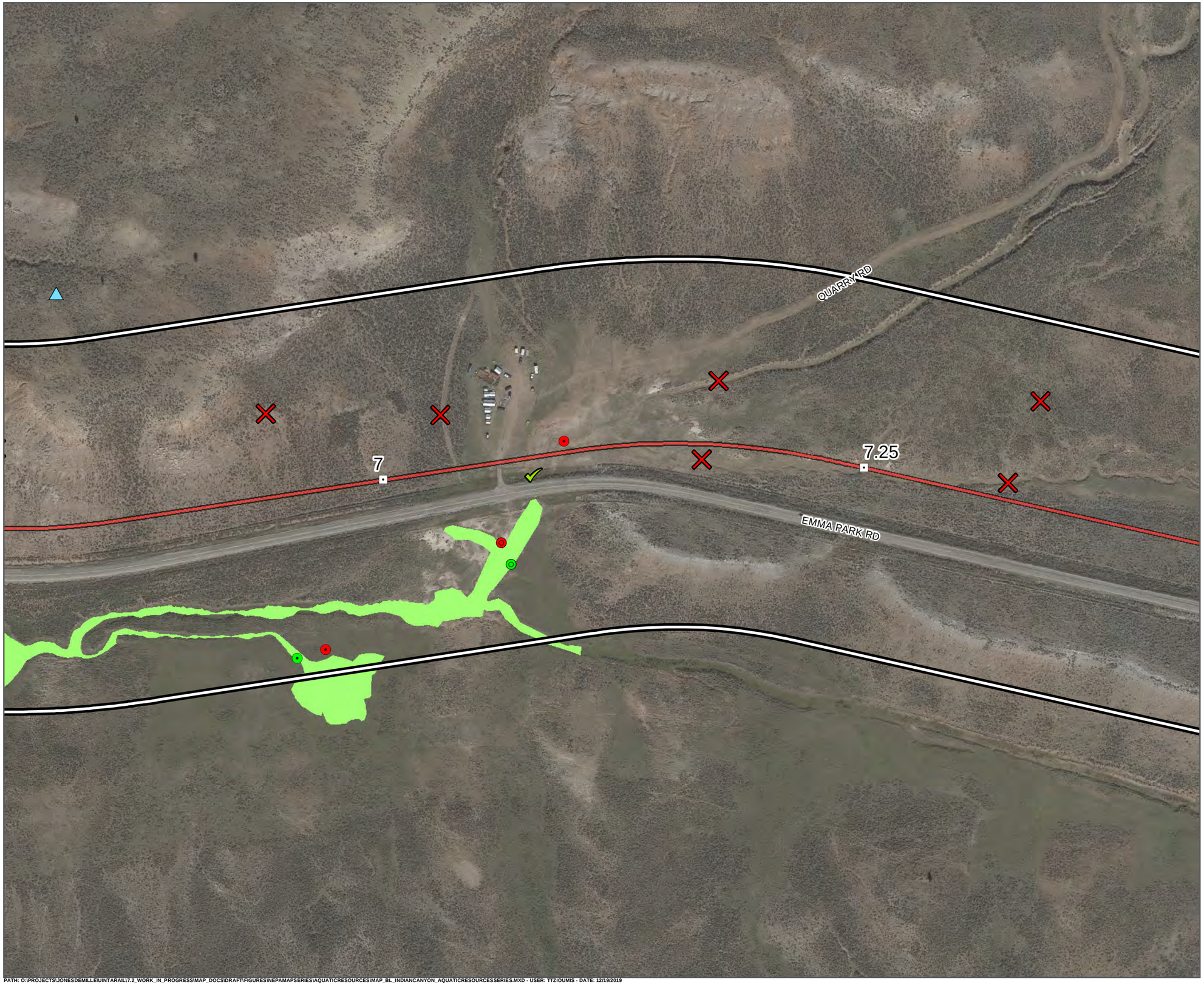
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DECEMBER 2019

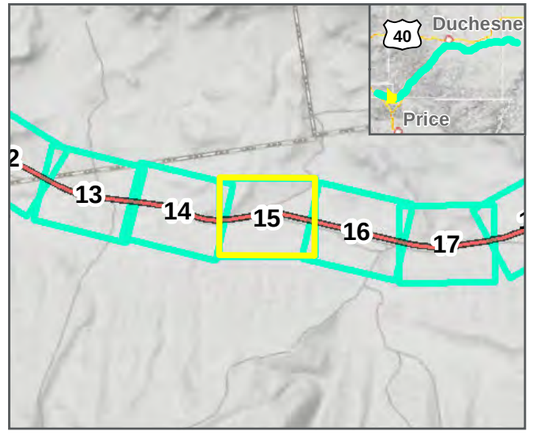
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DECEMBER 2019

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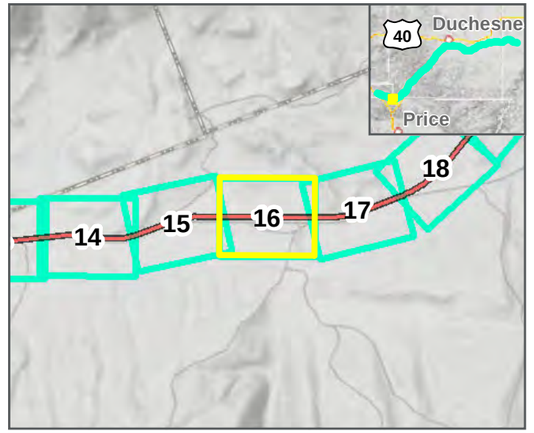
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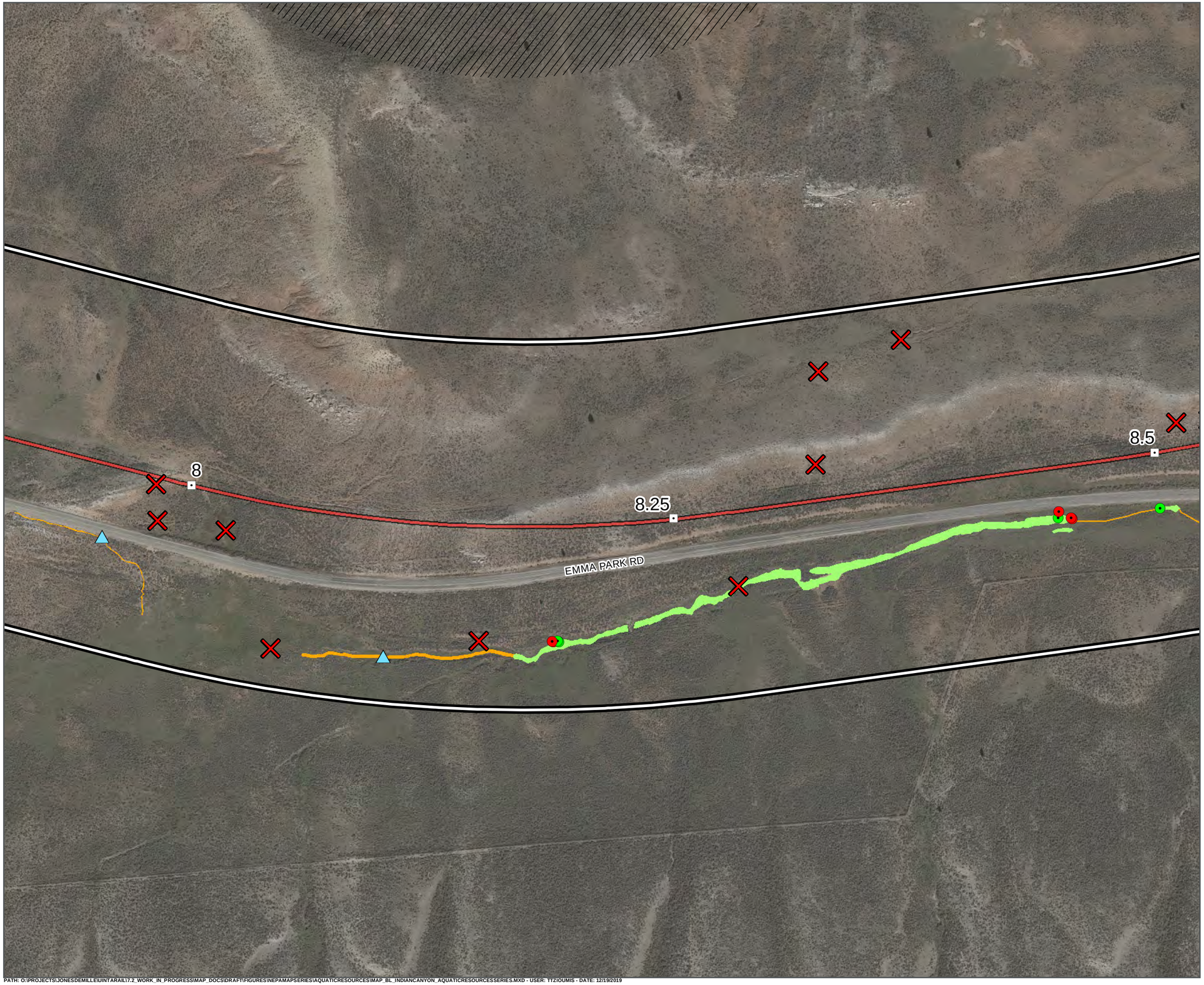
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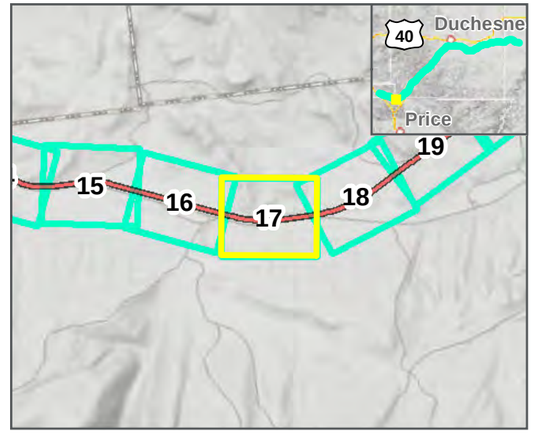
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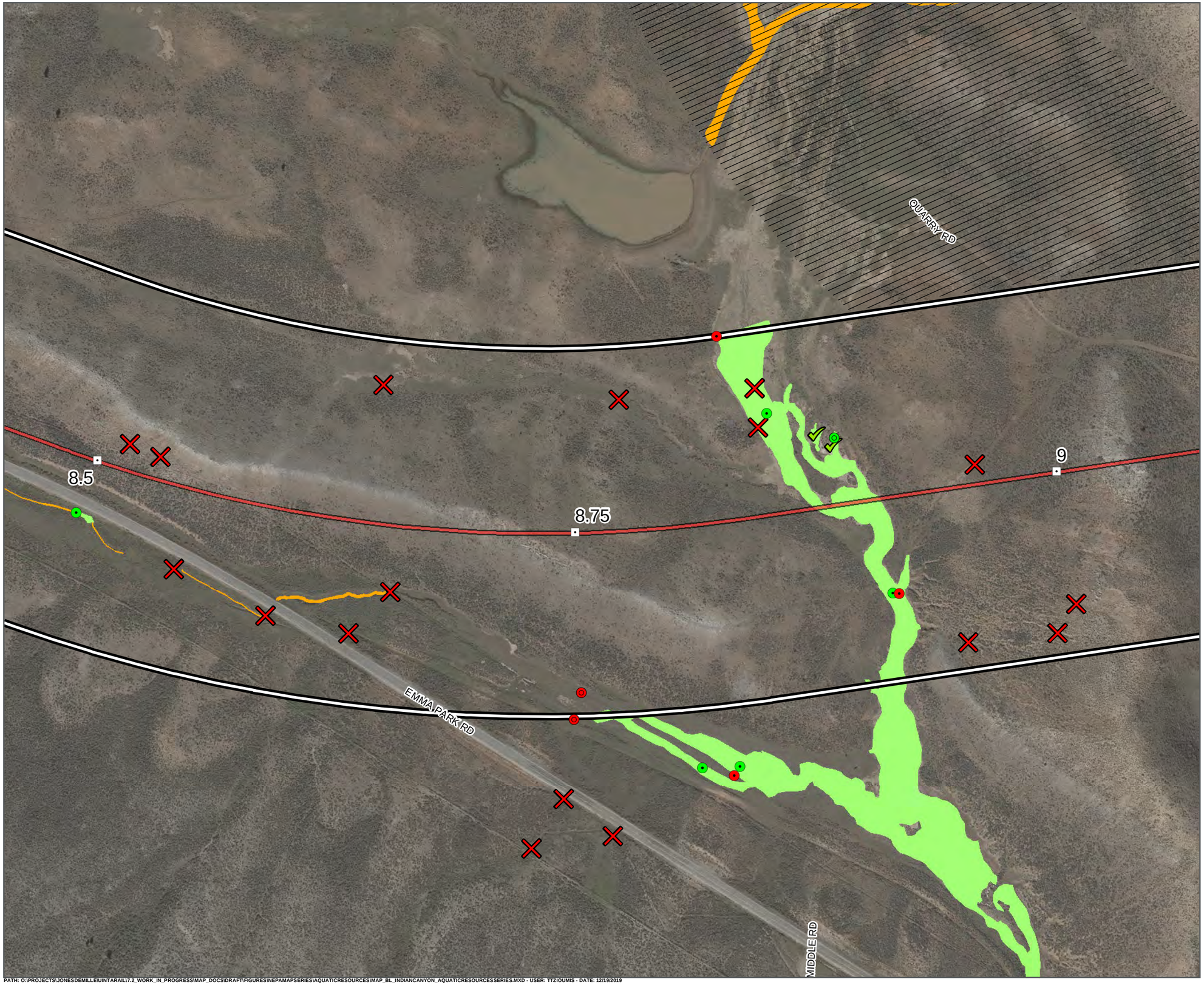
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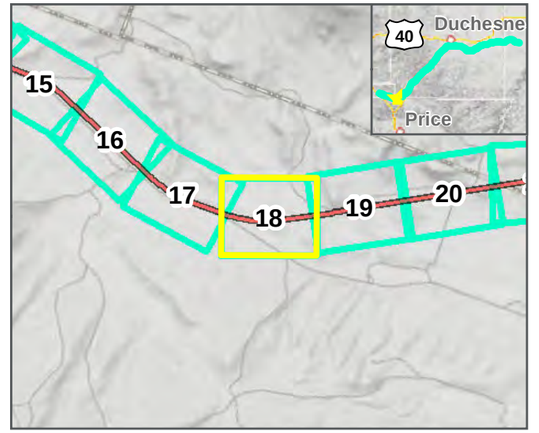
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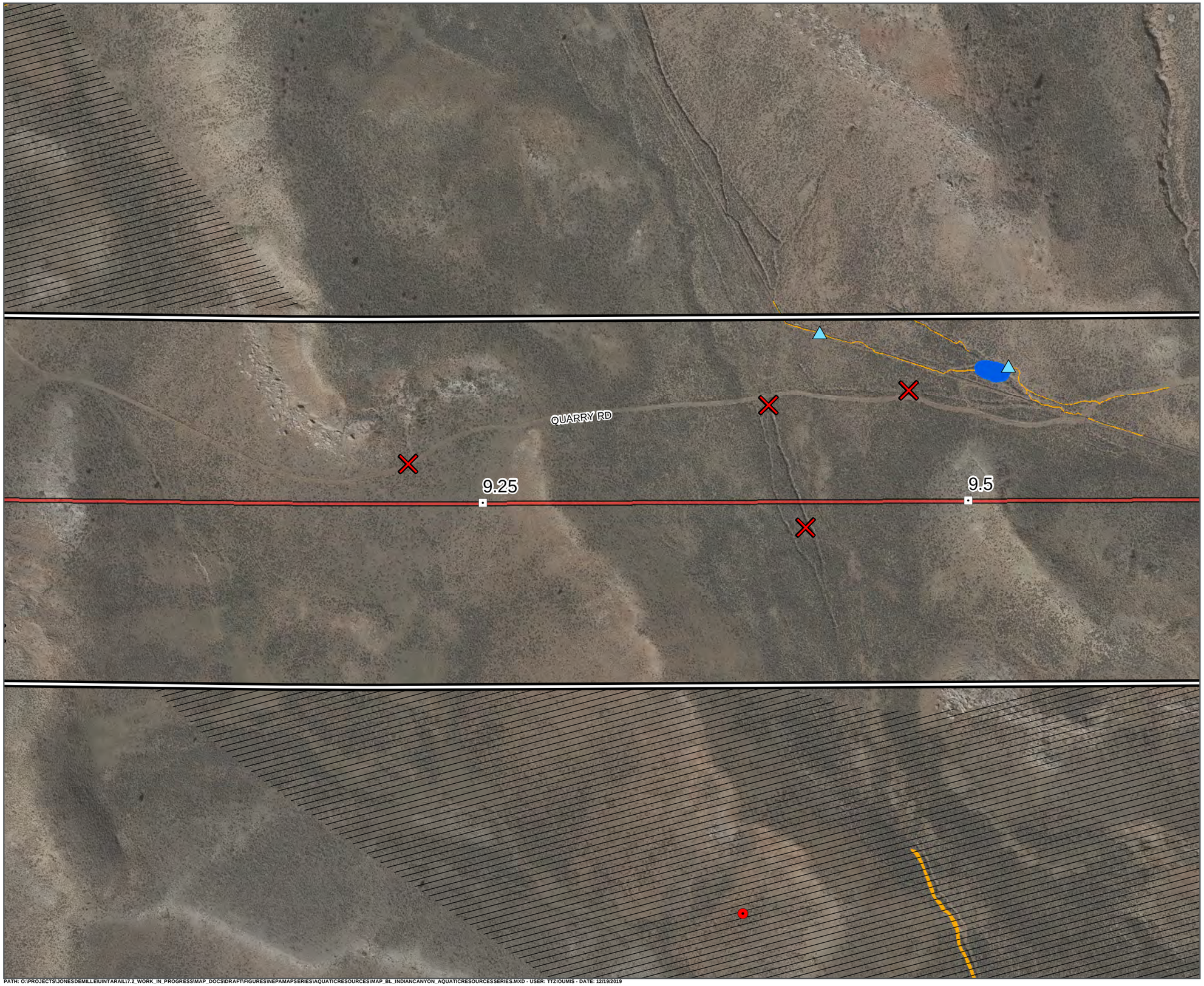
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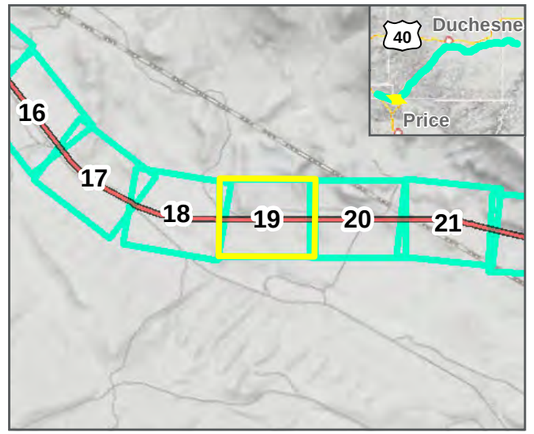
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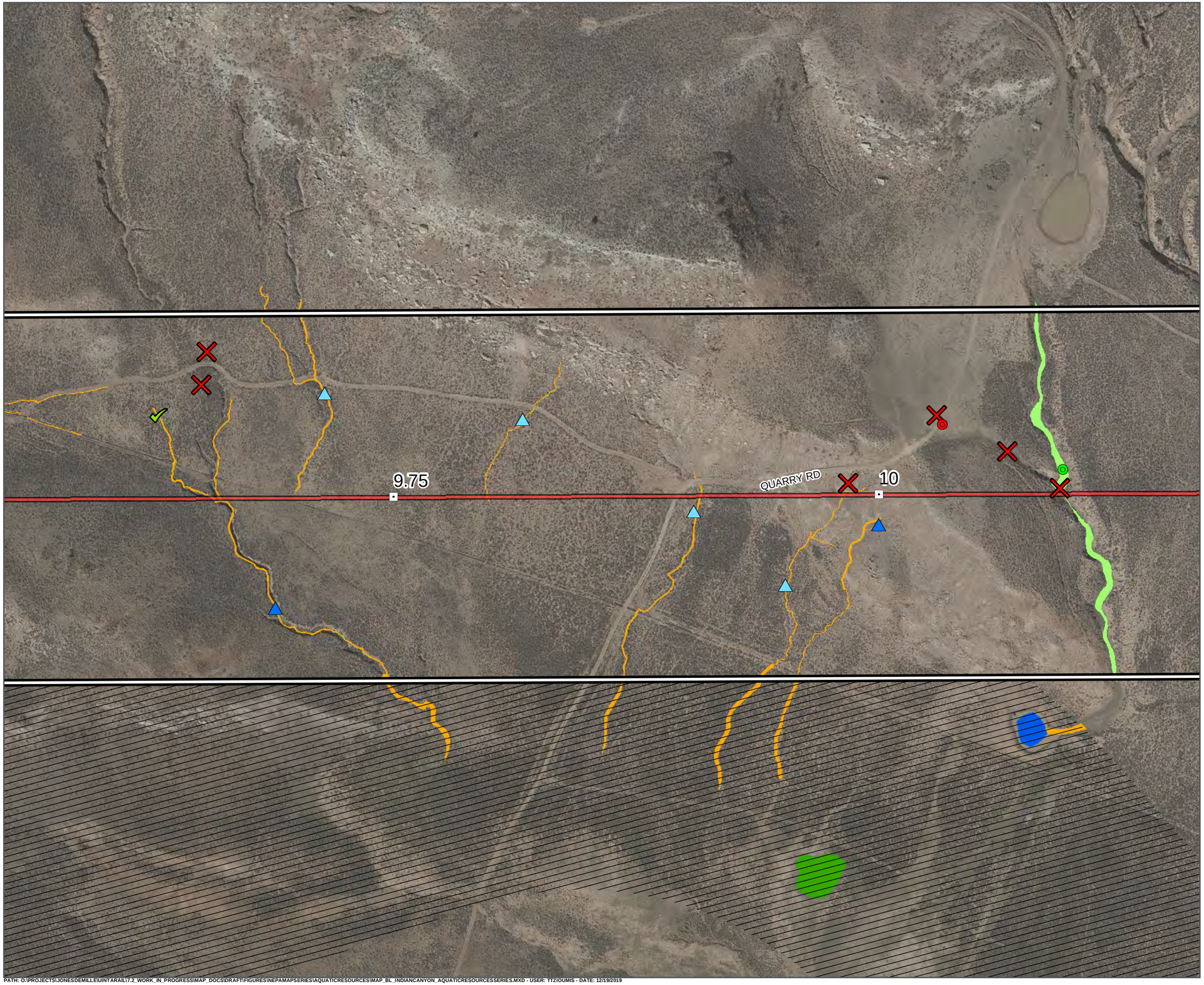
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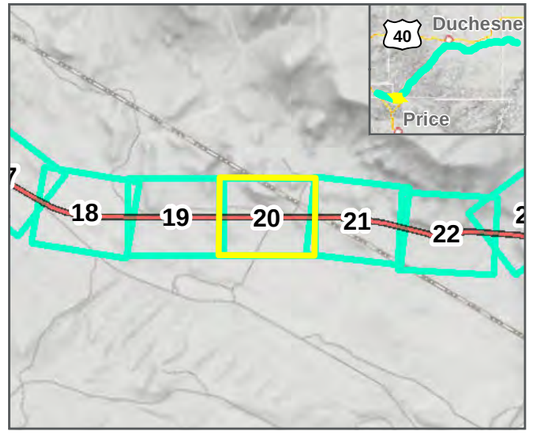
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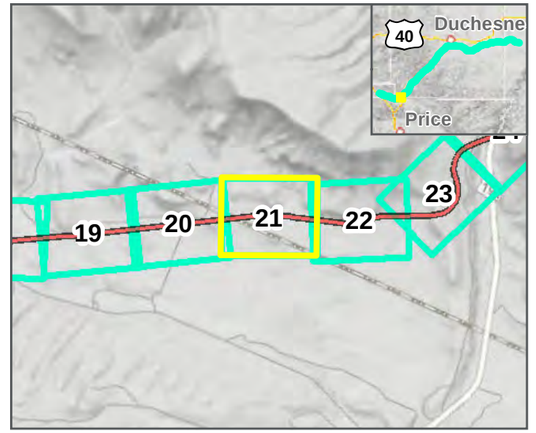
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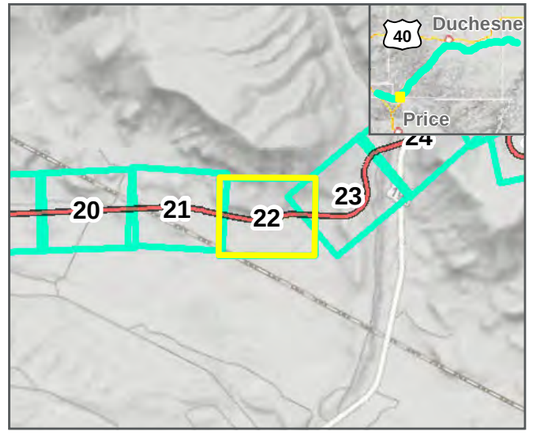
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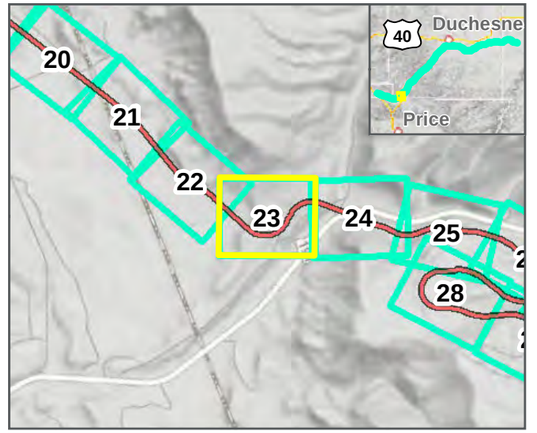
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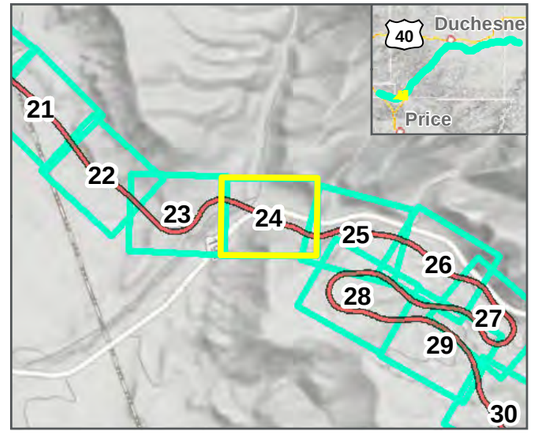
DATA SOURCES:
HDR Field Work & Engineering 2019
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COODINATE SYSTEM:
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SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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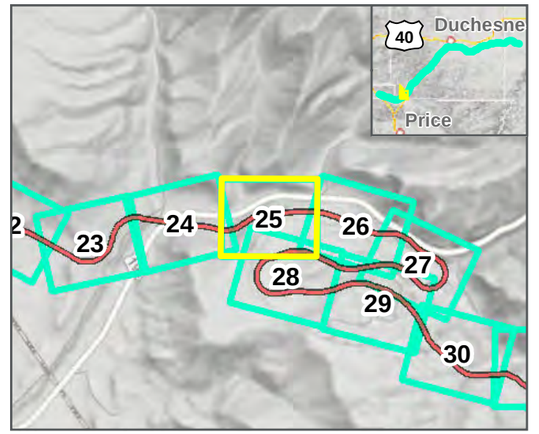
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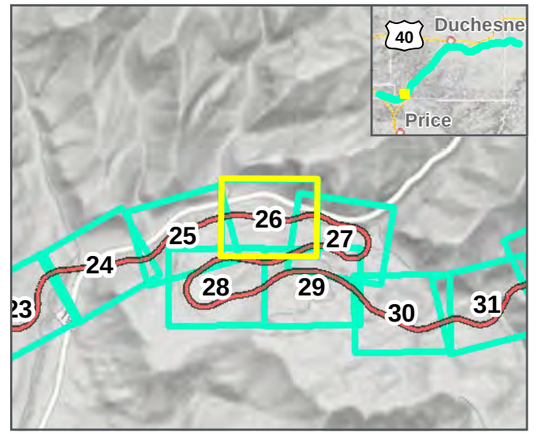
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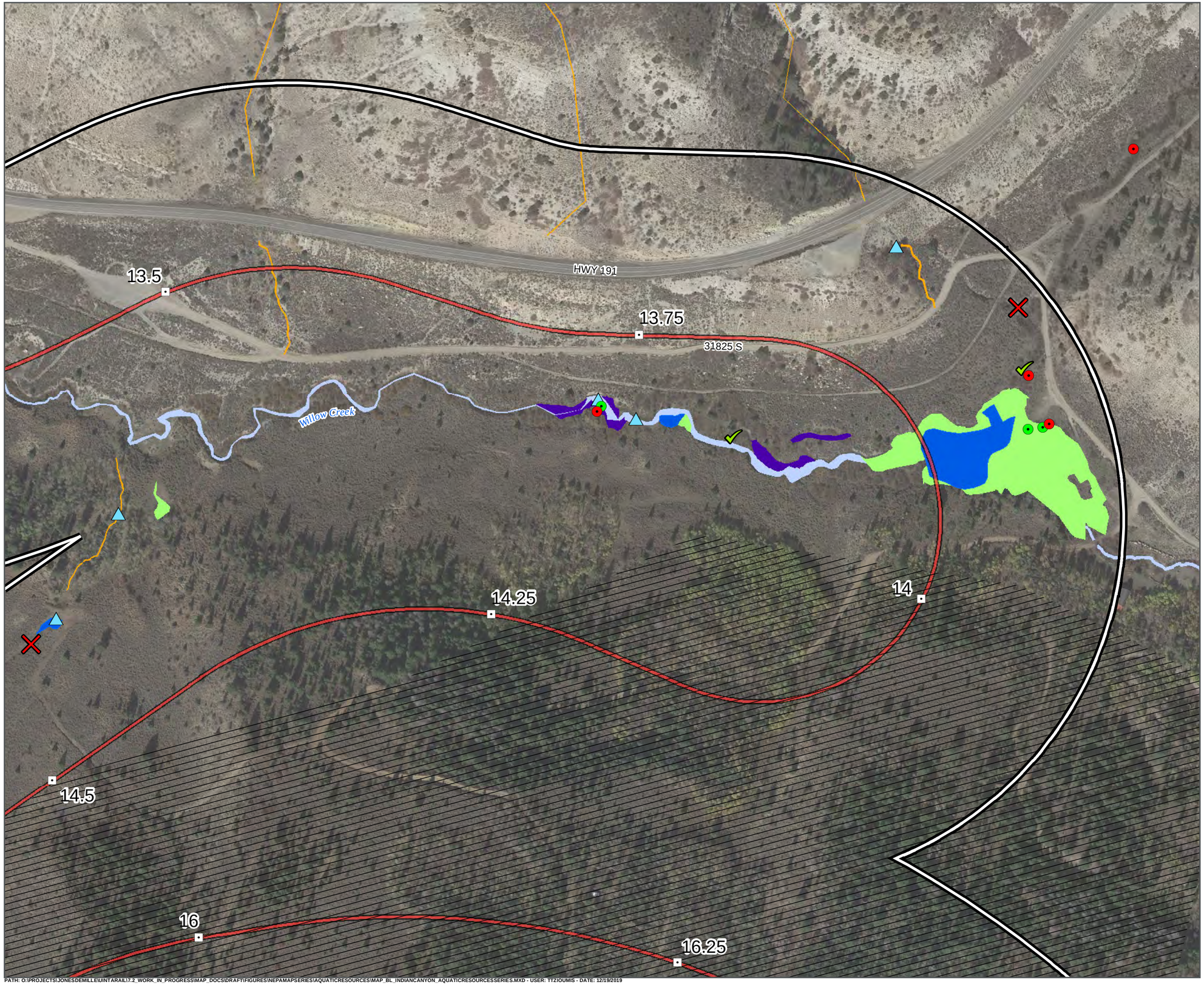
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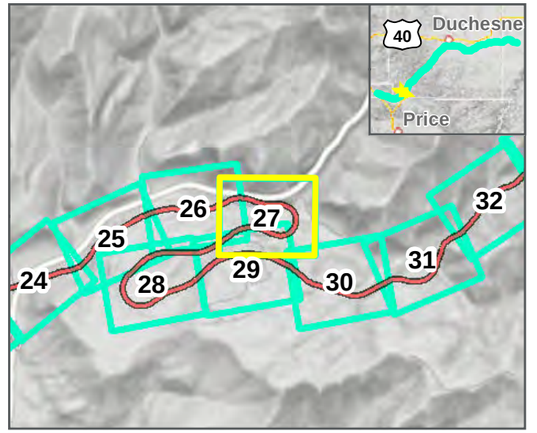
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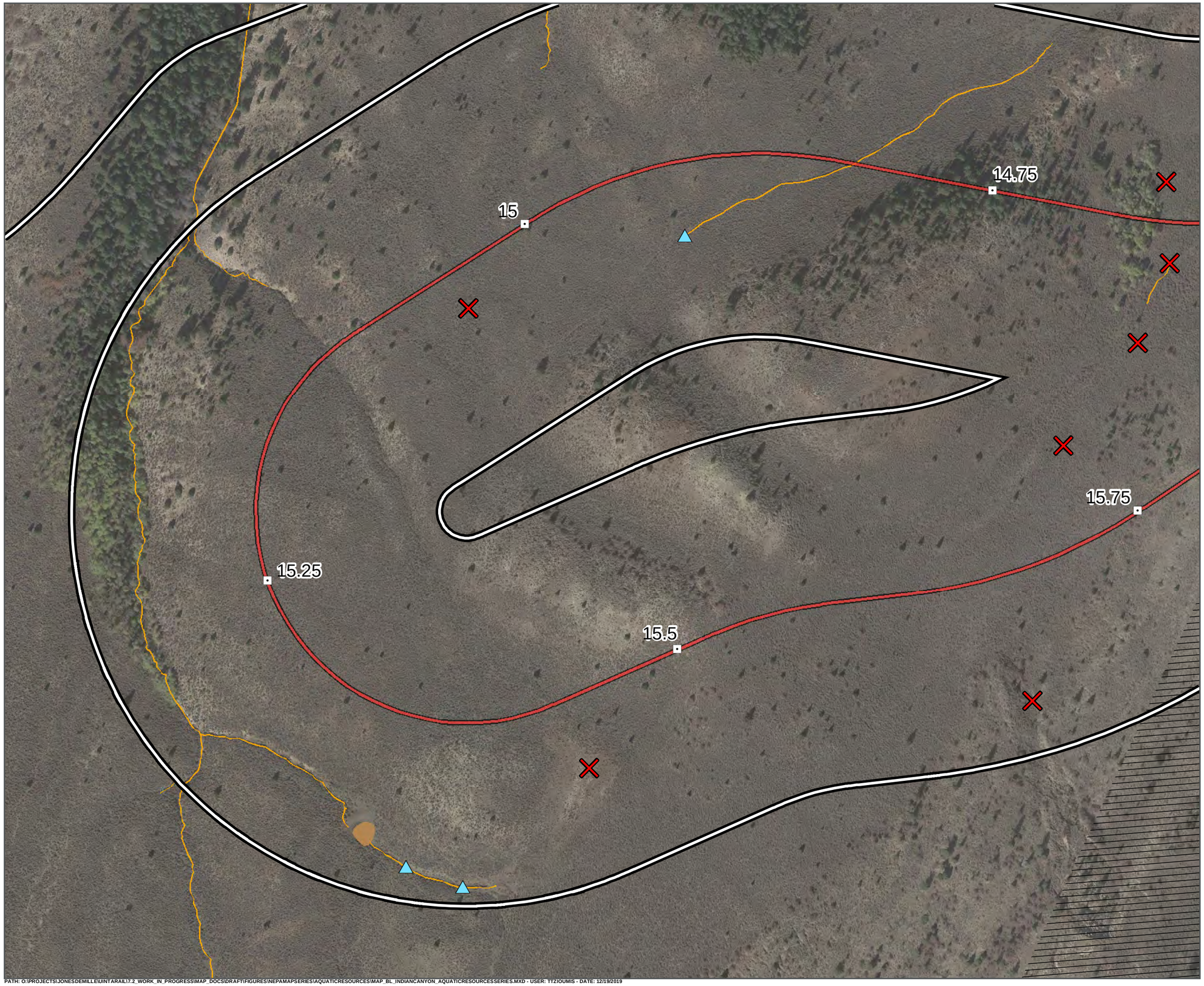
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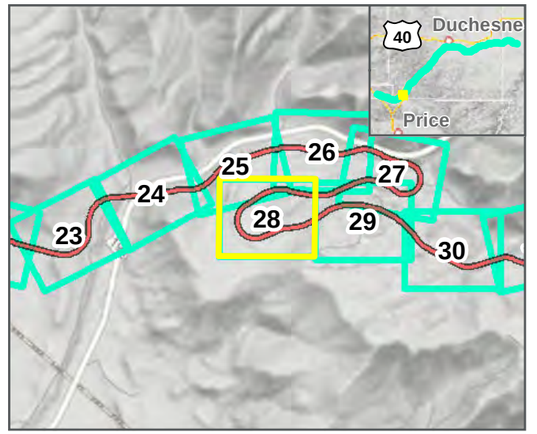
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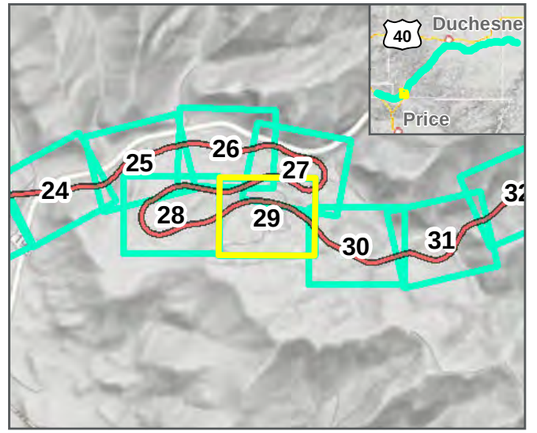
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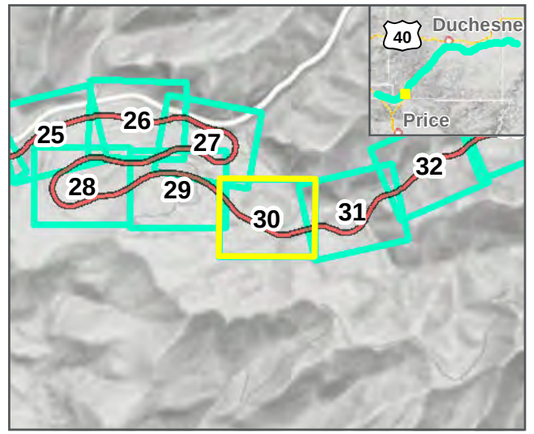
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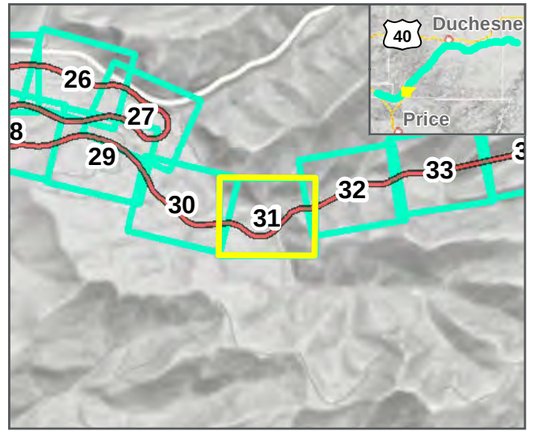
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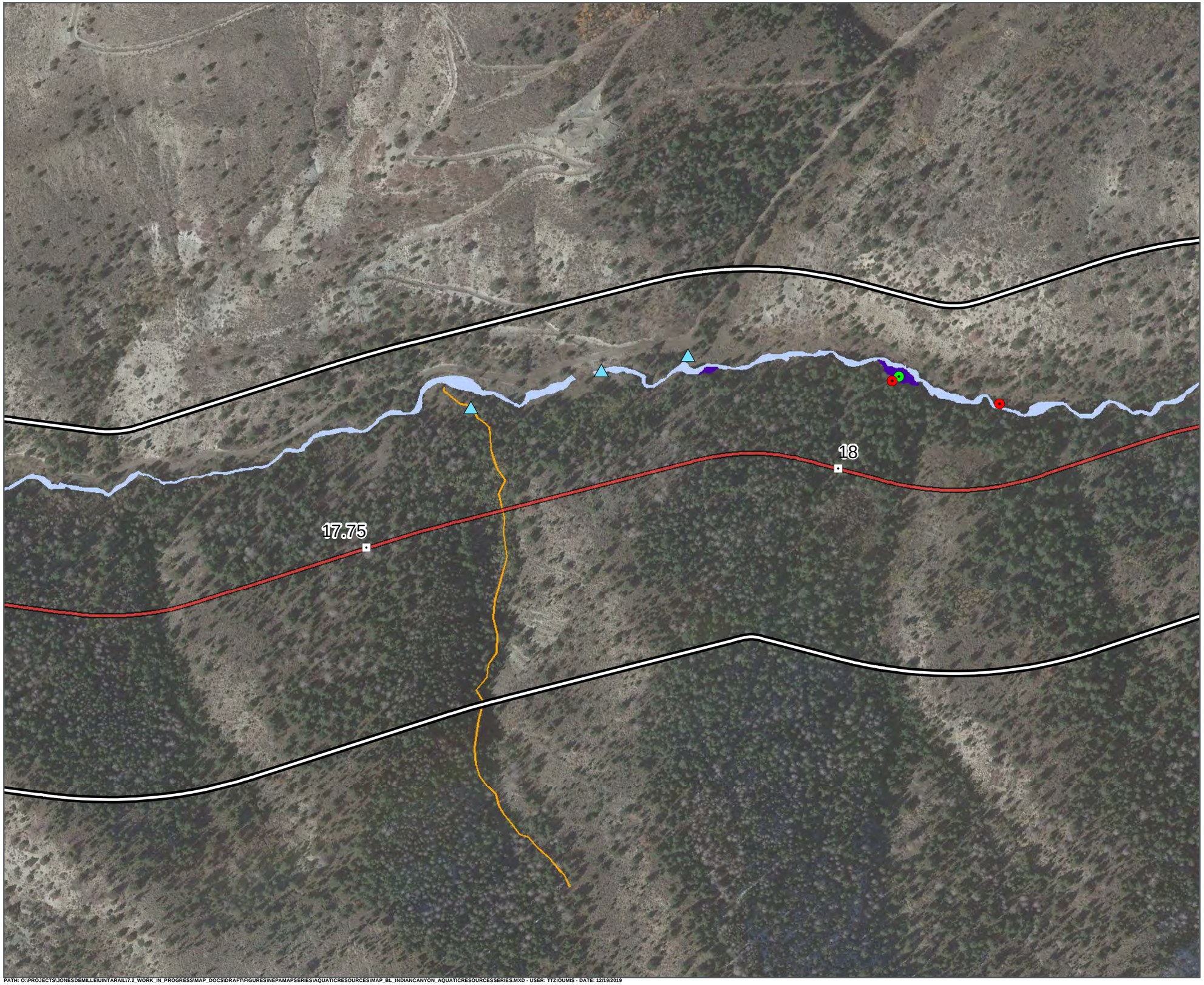
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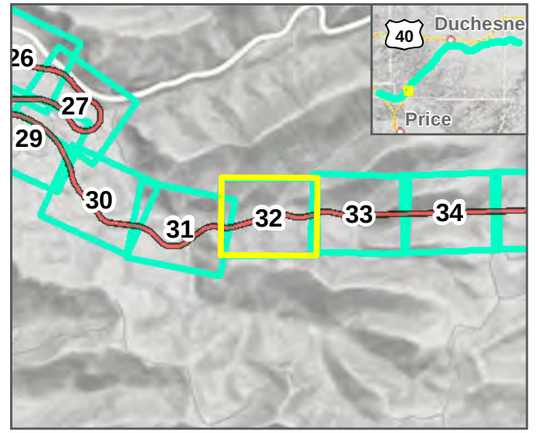
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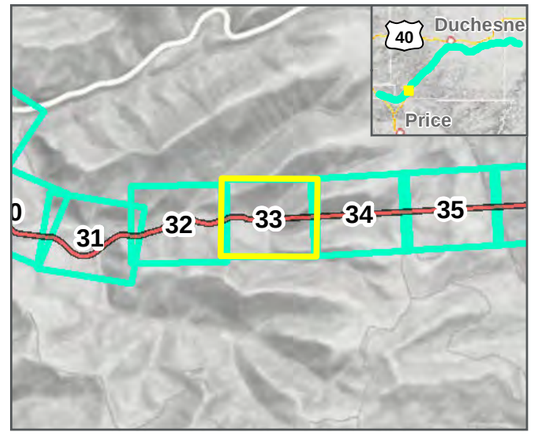
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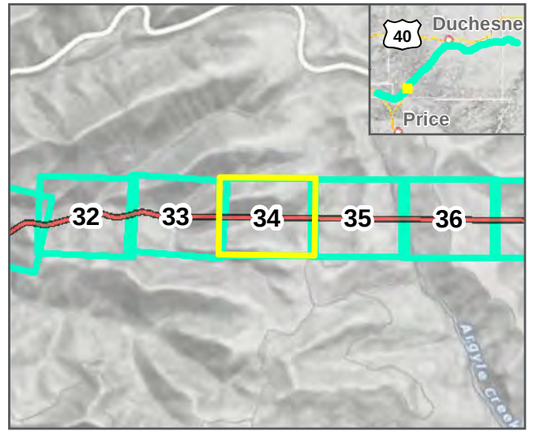
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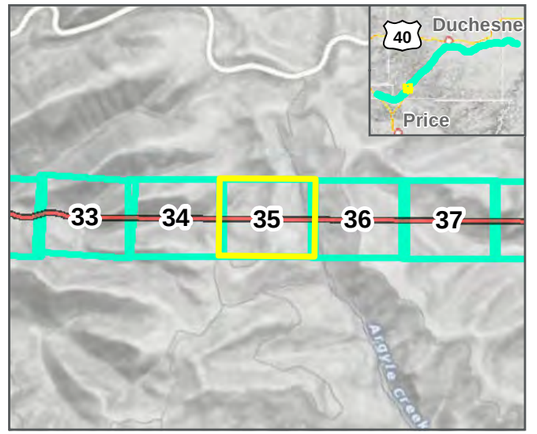
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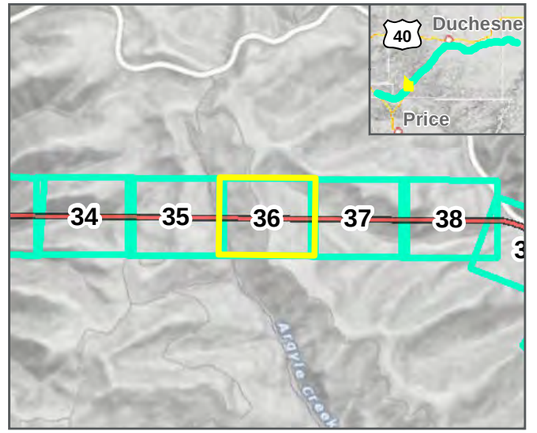
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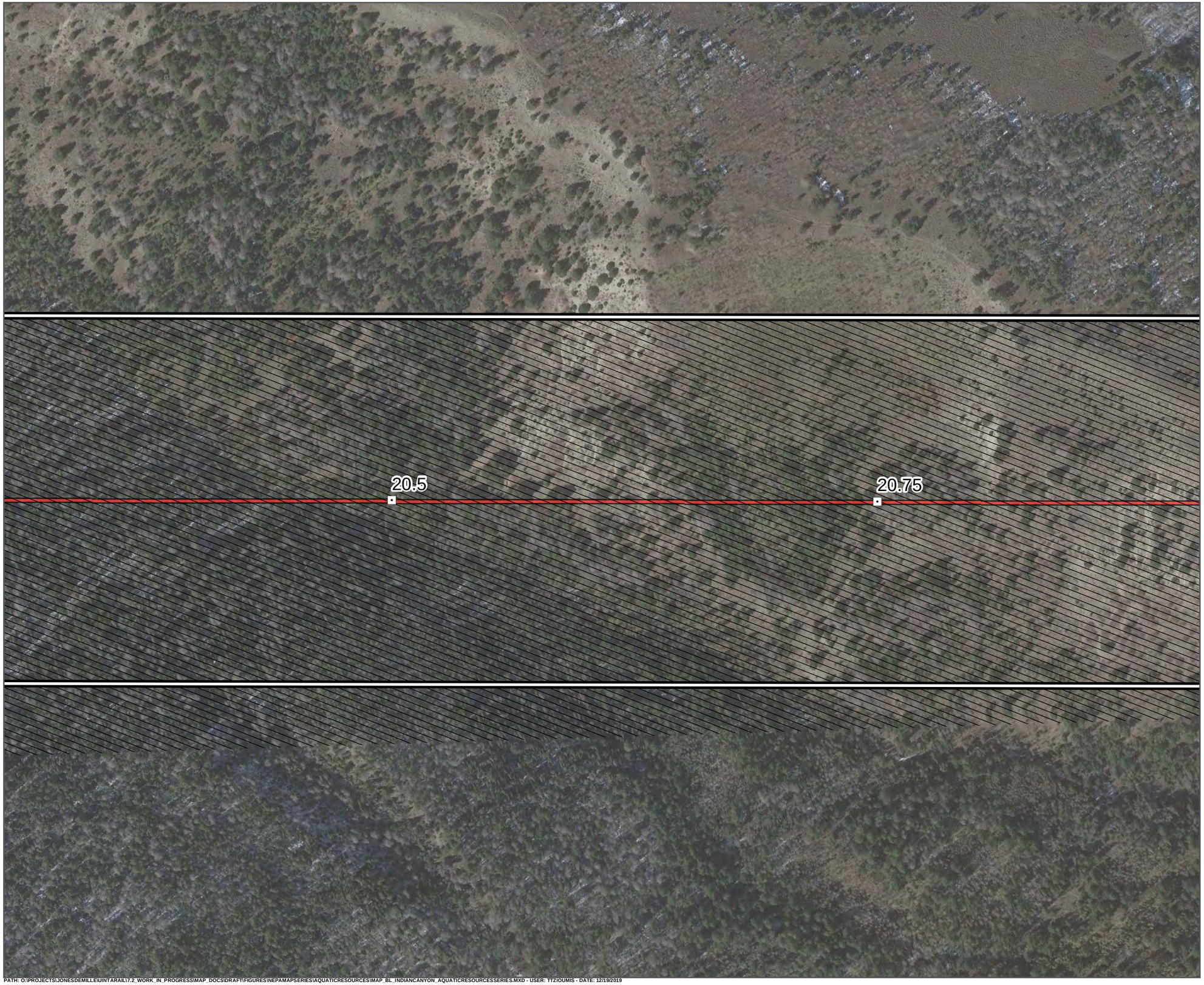
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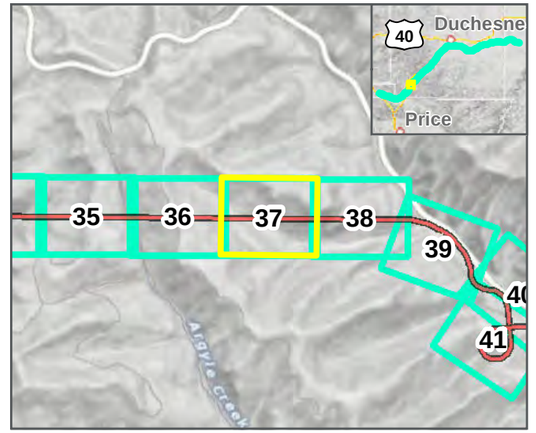
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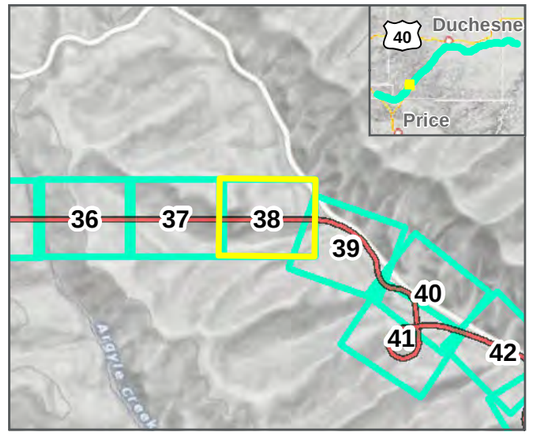
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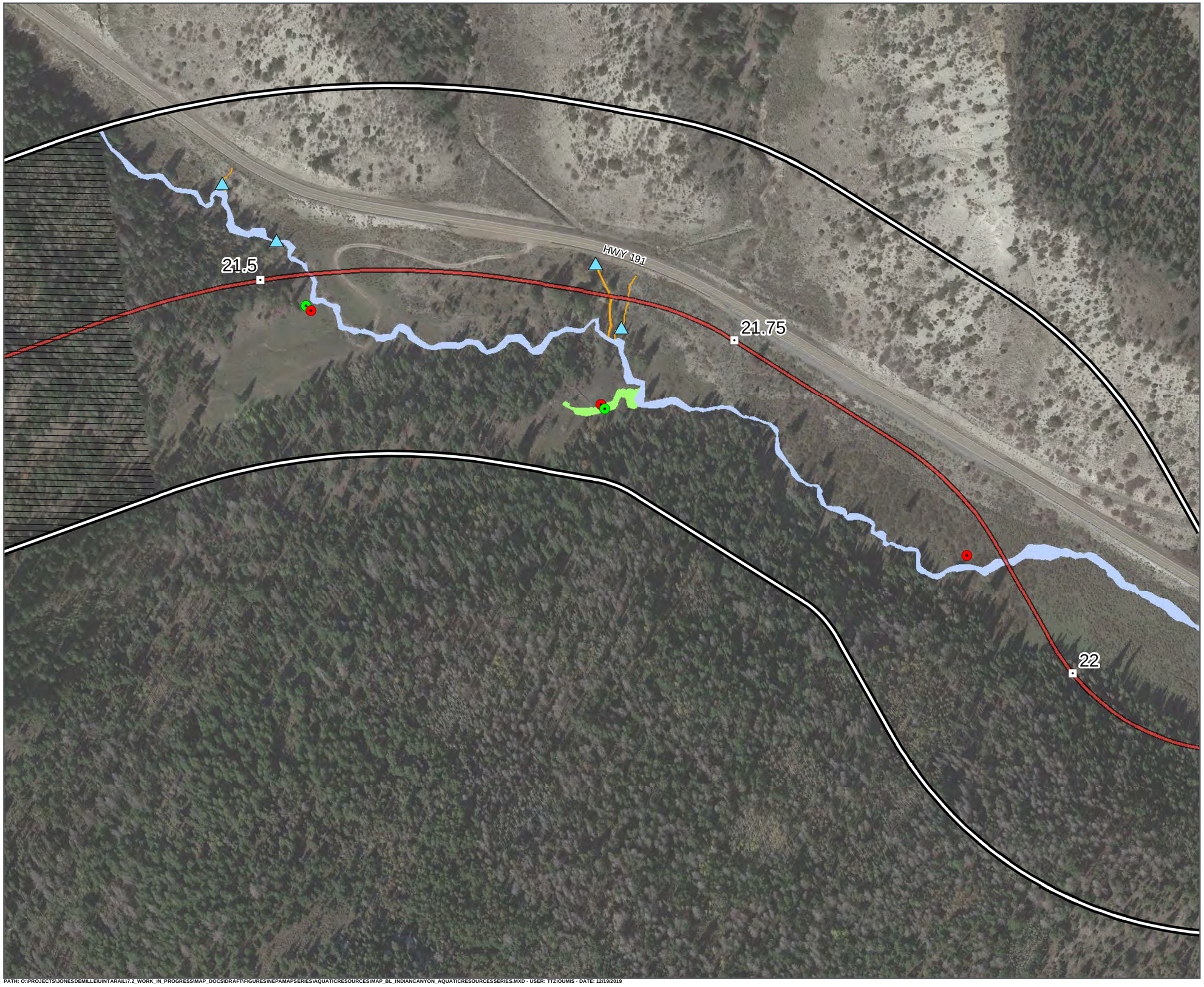
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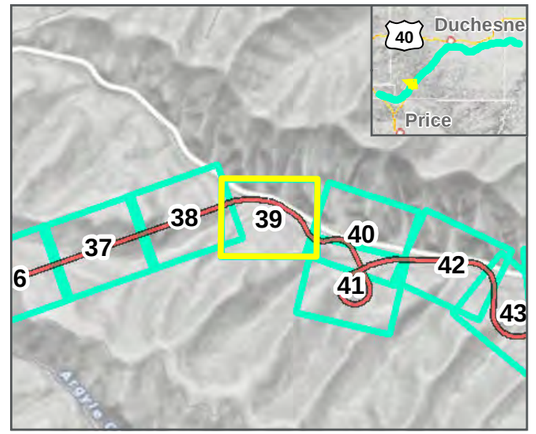
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery
Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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- Mileposts
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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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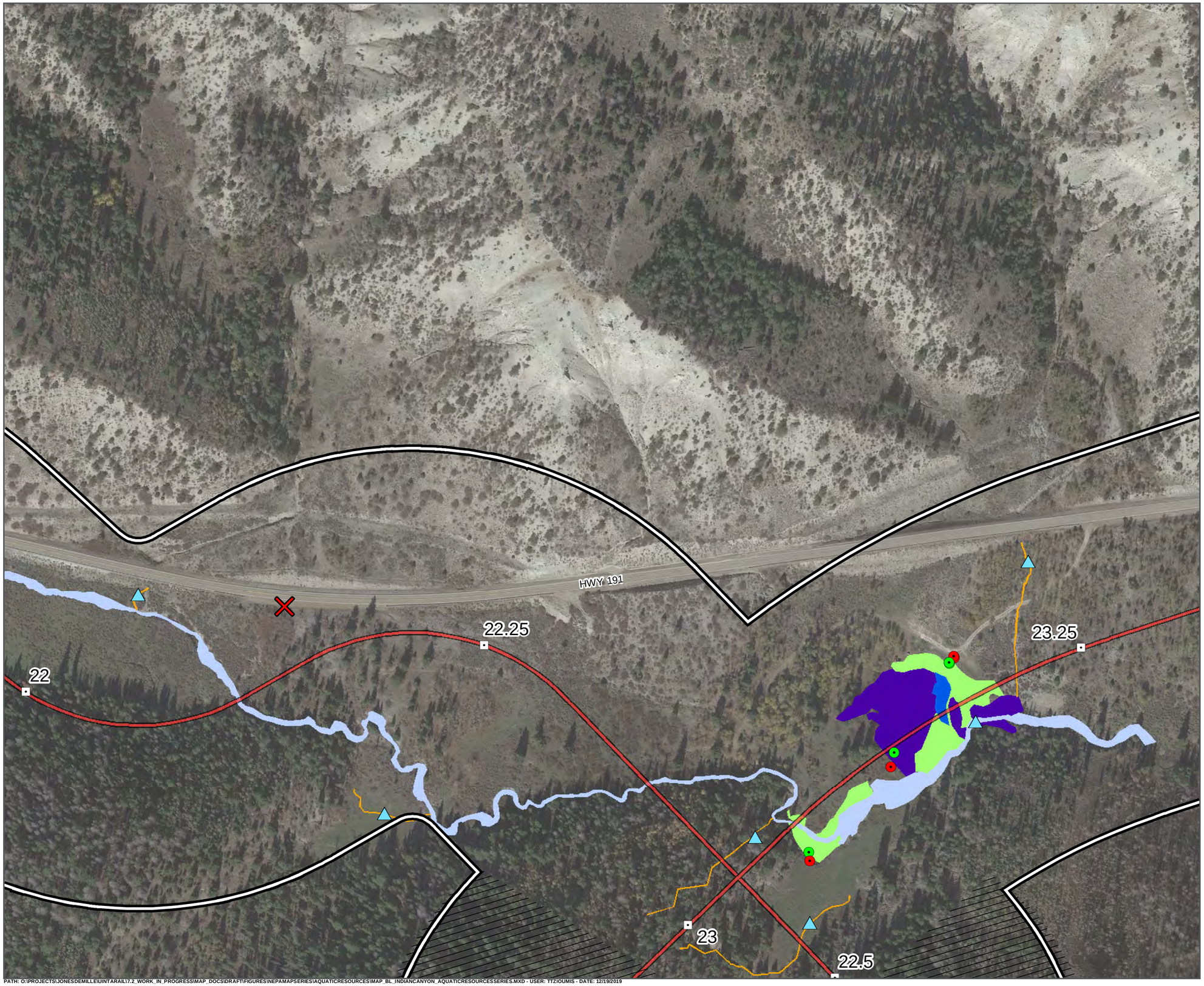
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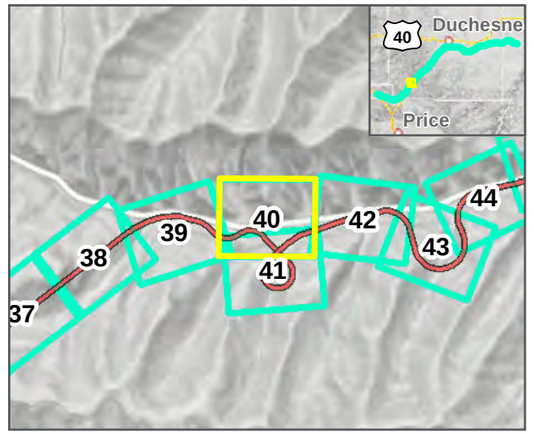
DATA SOURCES:
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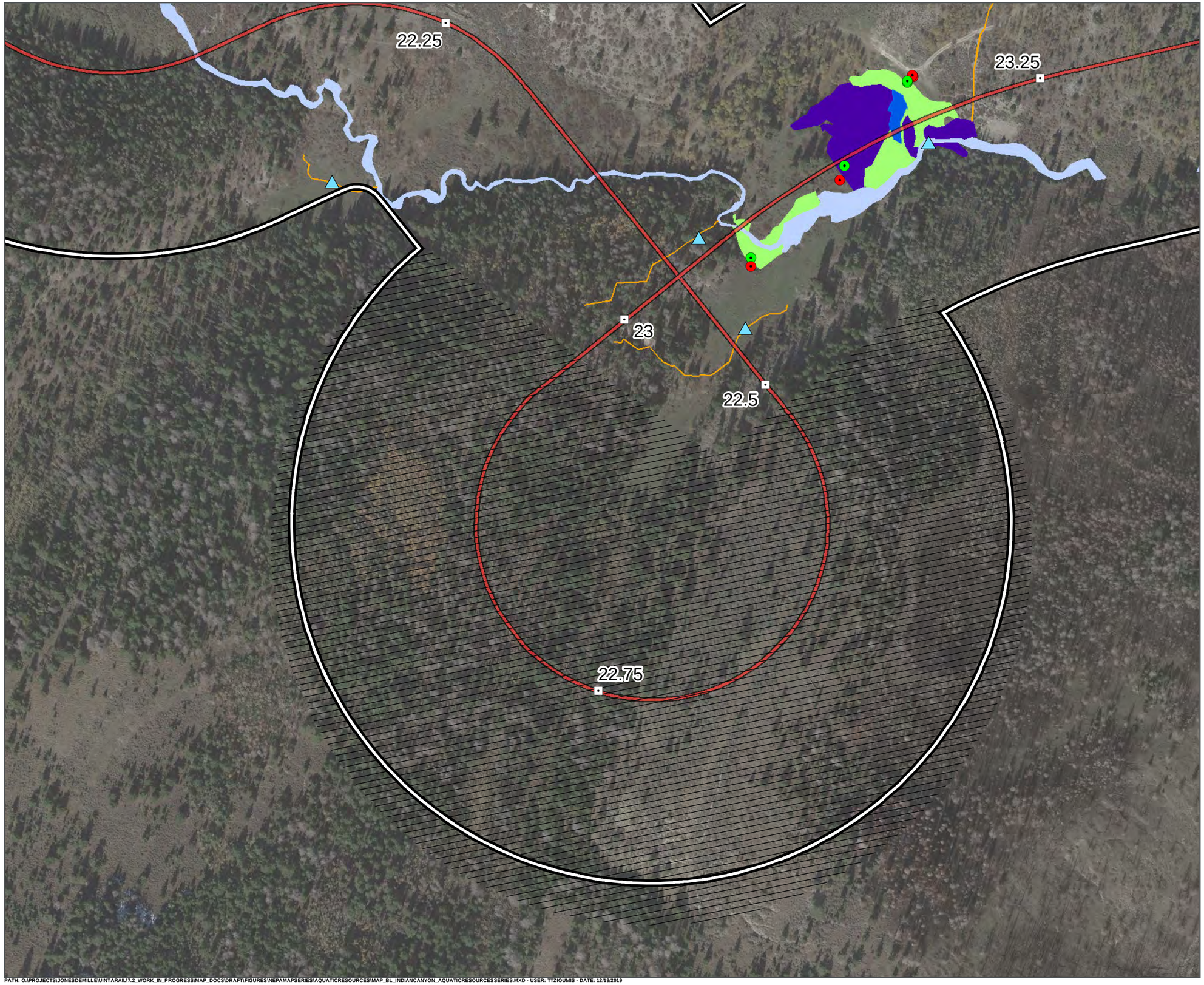
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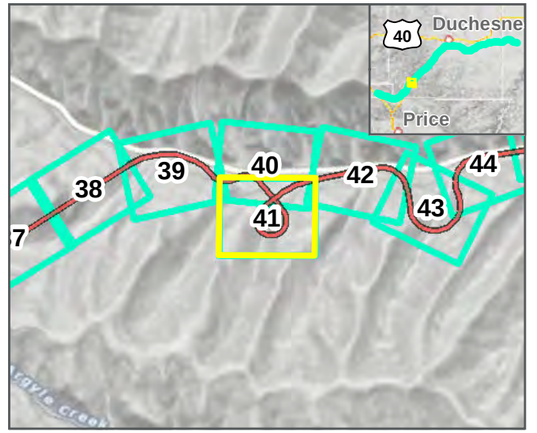
AQUATIC RESOURCES
DECEMBER 2019

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DECEMBER 2019

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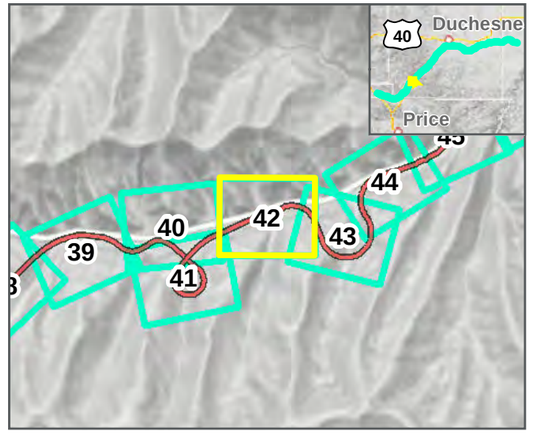
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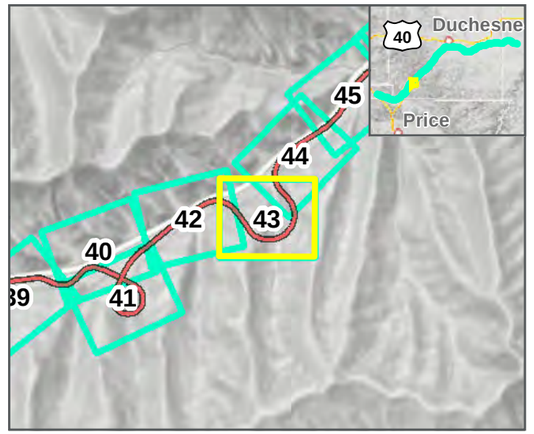
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INDIAN CANYON ALTERNATIVE: 11/22/2019

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DECEMBER 2019

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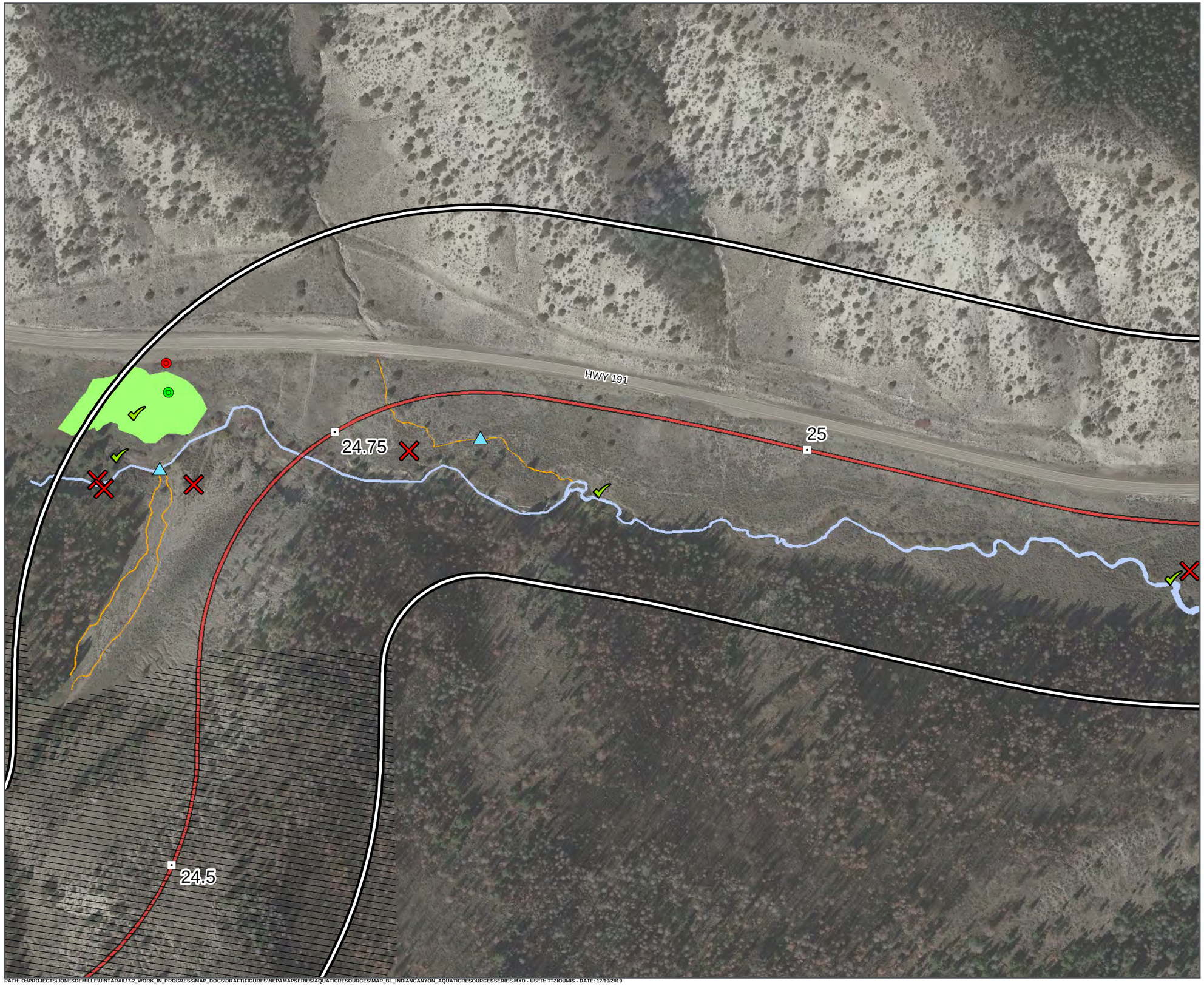
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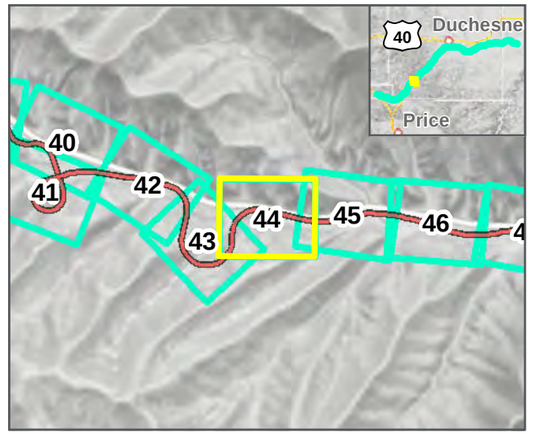
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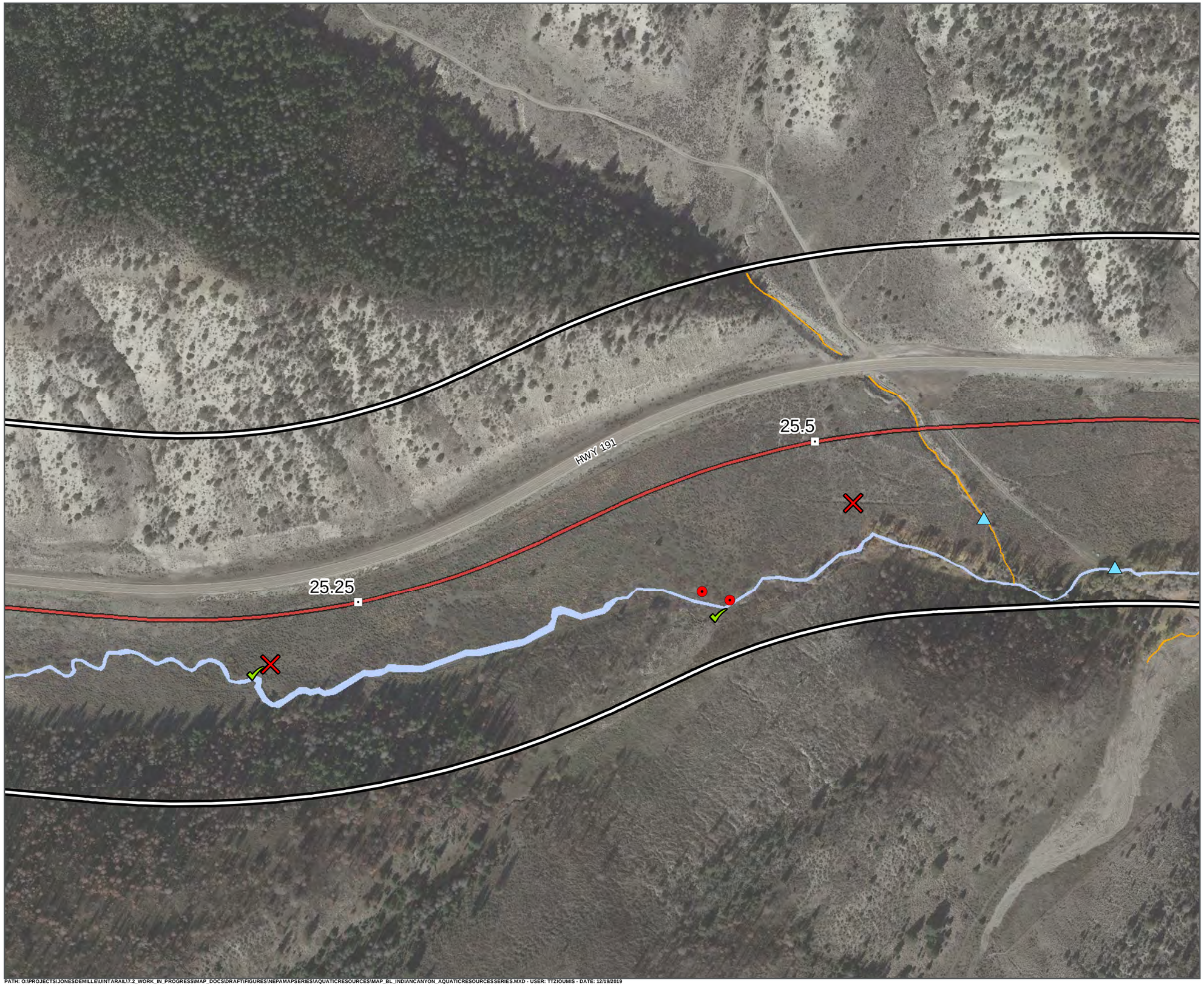
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DECEMBER 2019

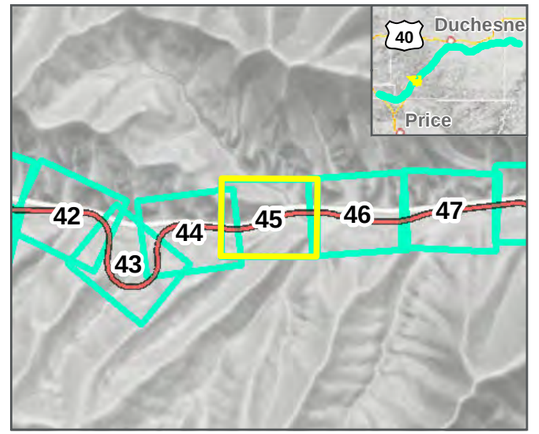
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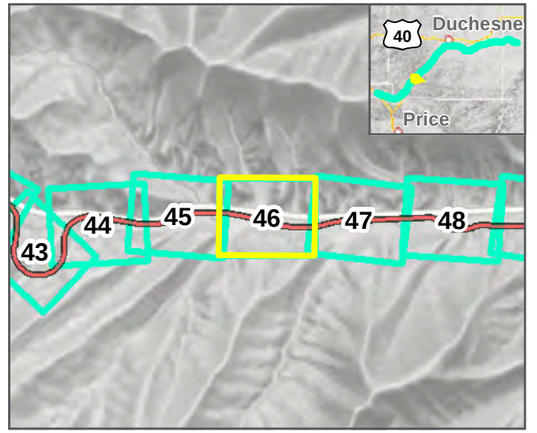
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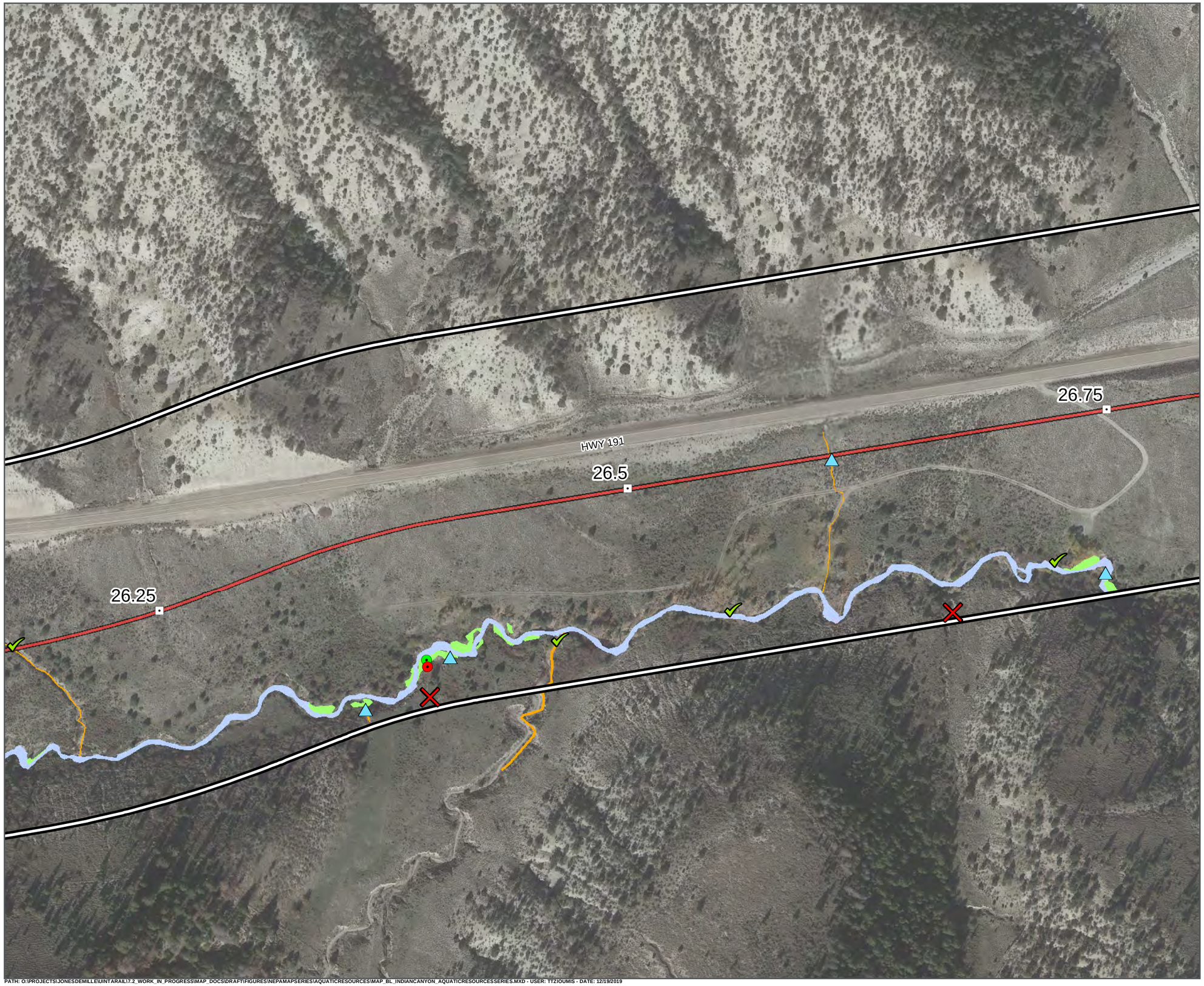
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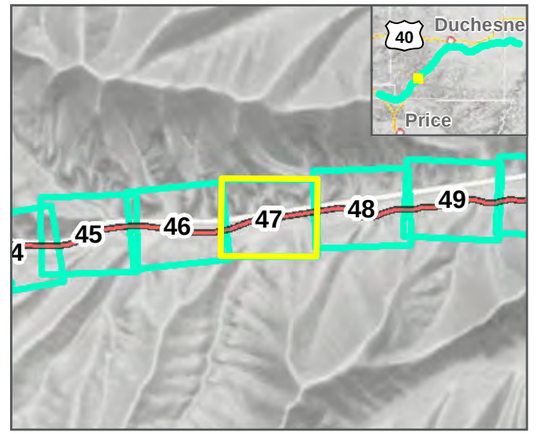
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SEVEN COUNTY INFRASTRUCTURE COALITION

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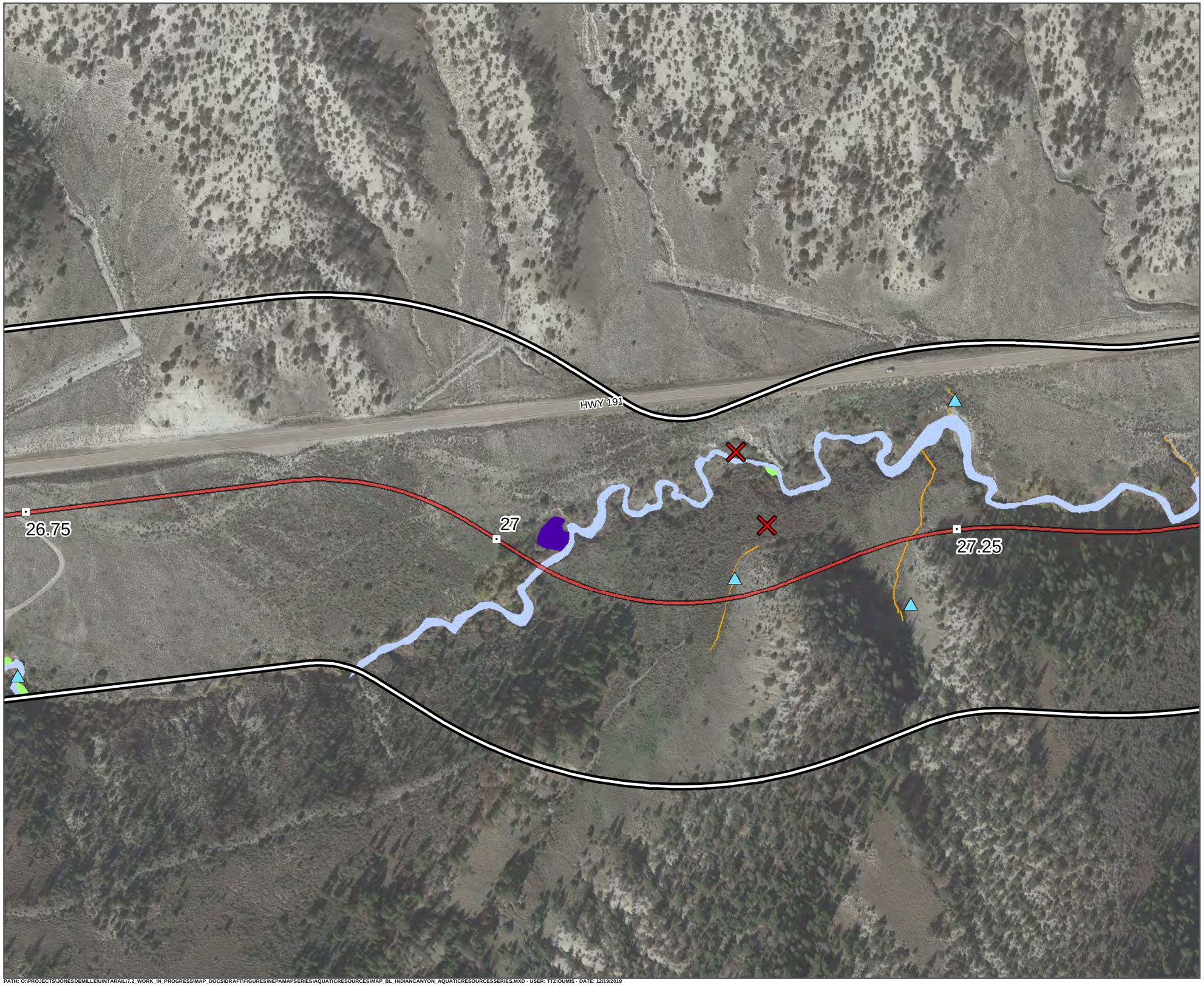
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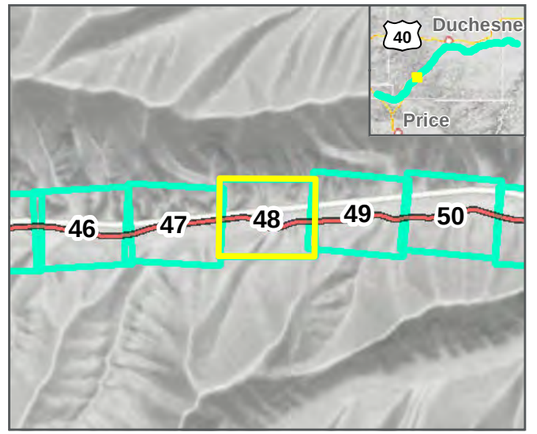
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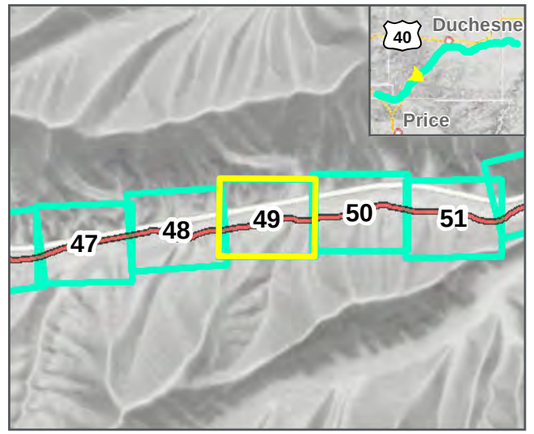
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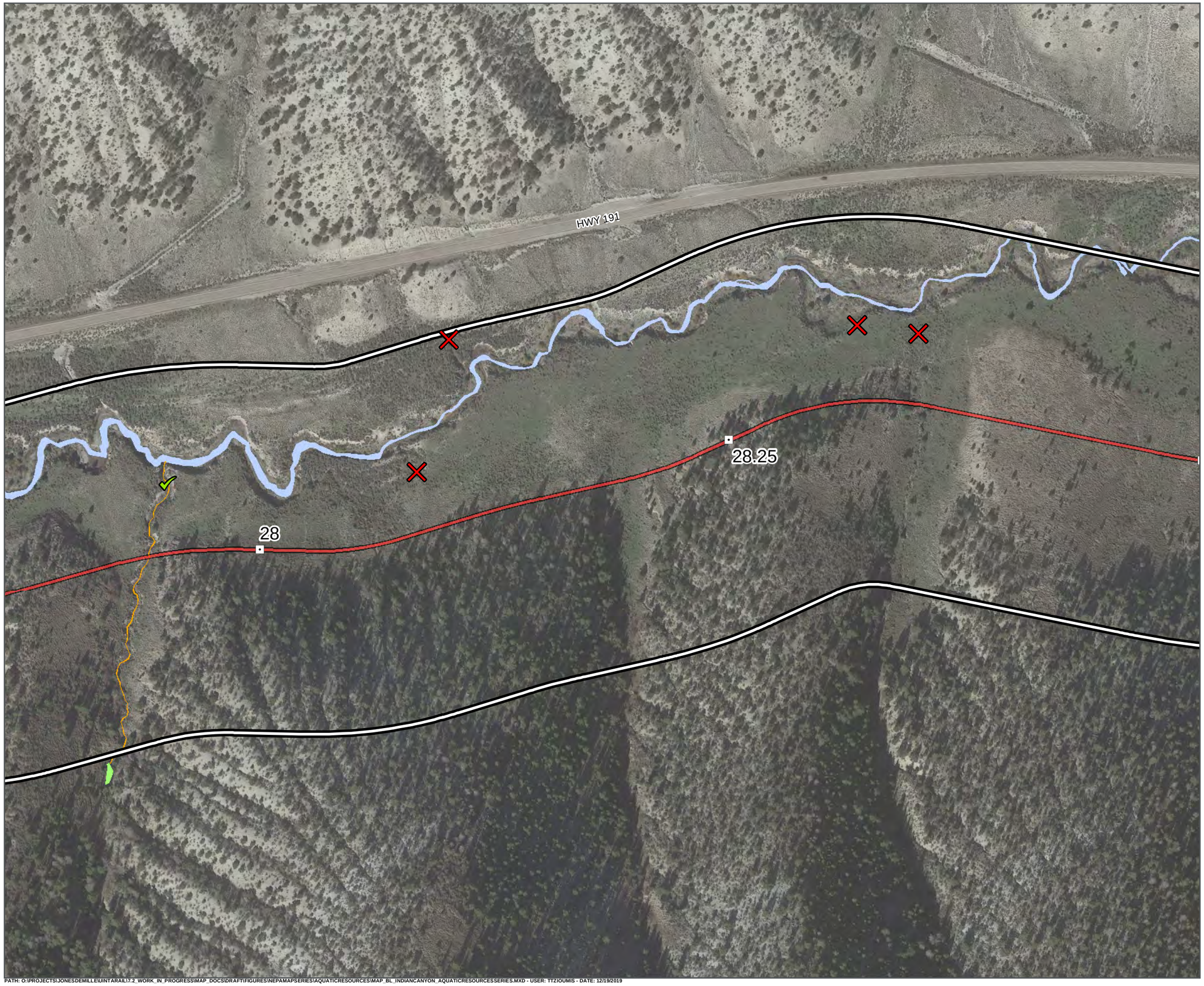
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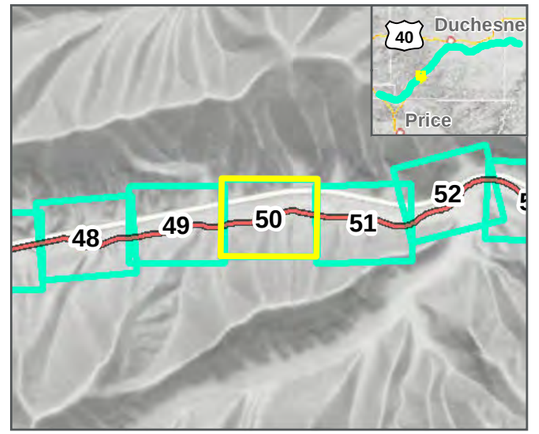
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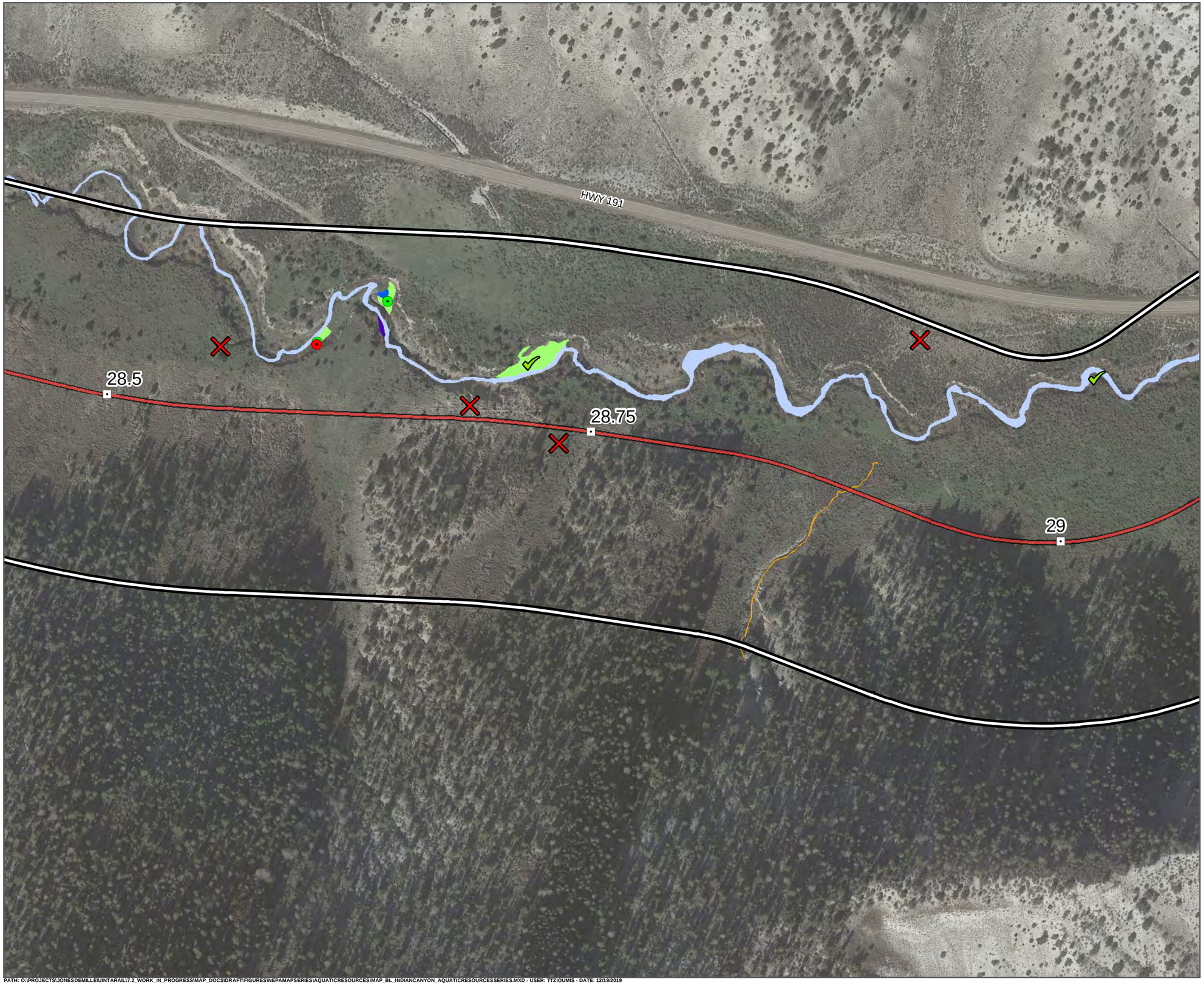
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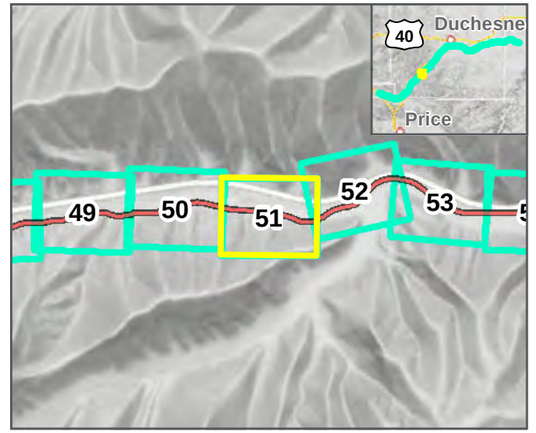
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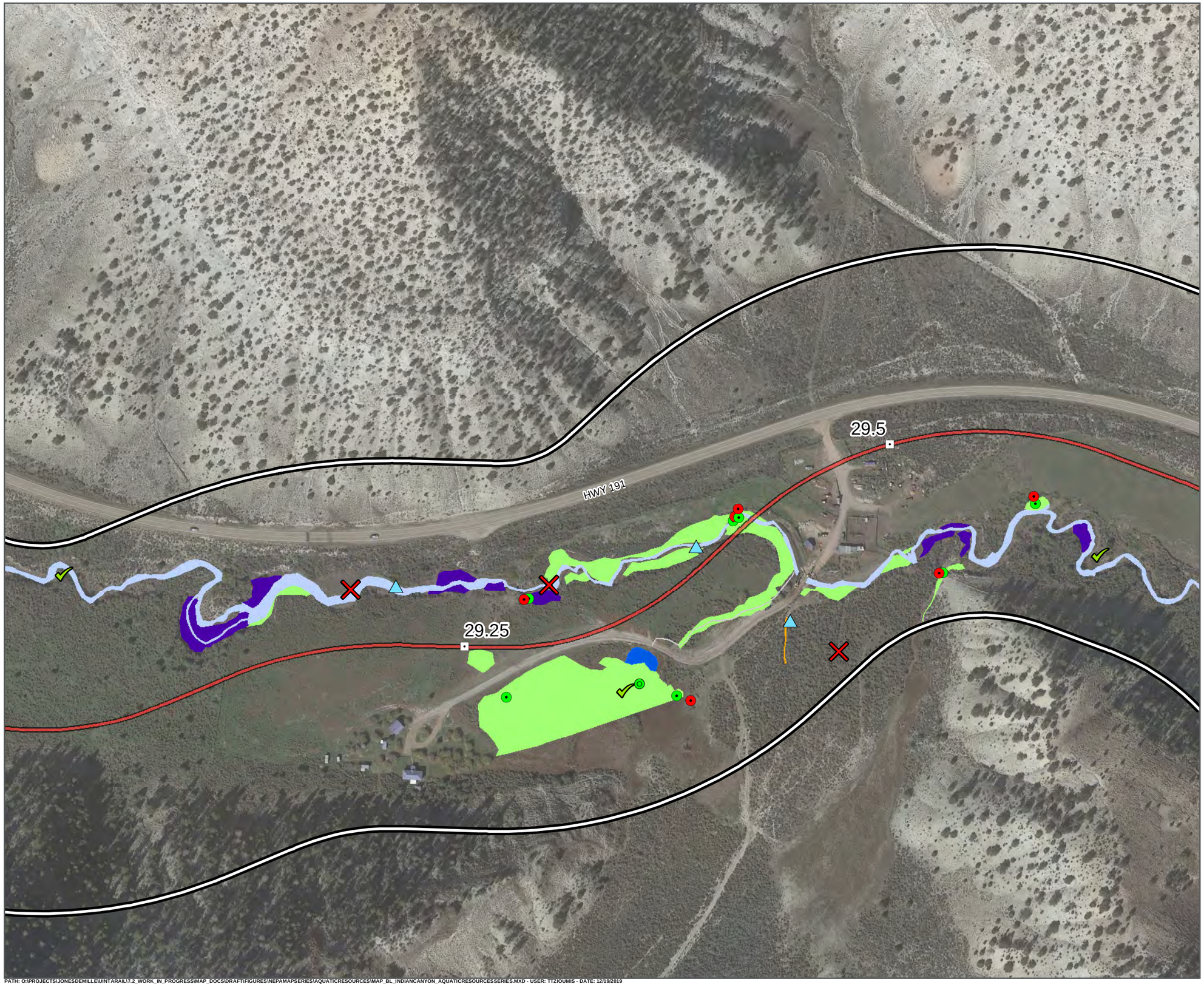
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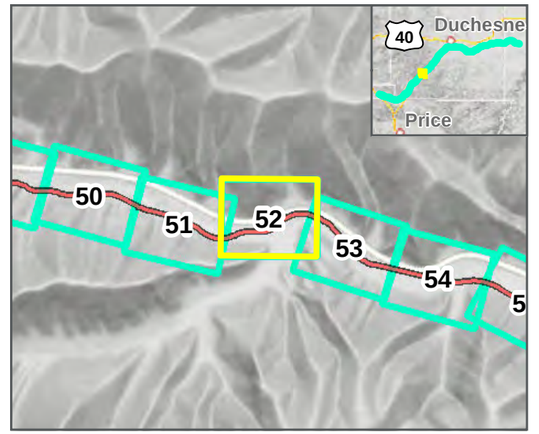
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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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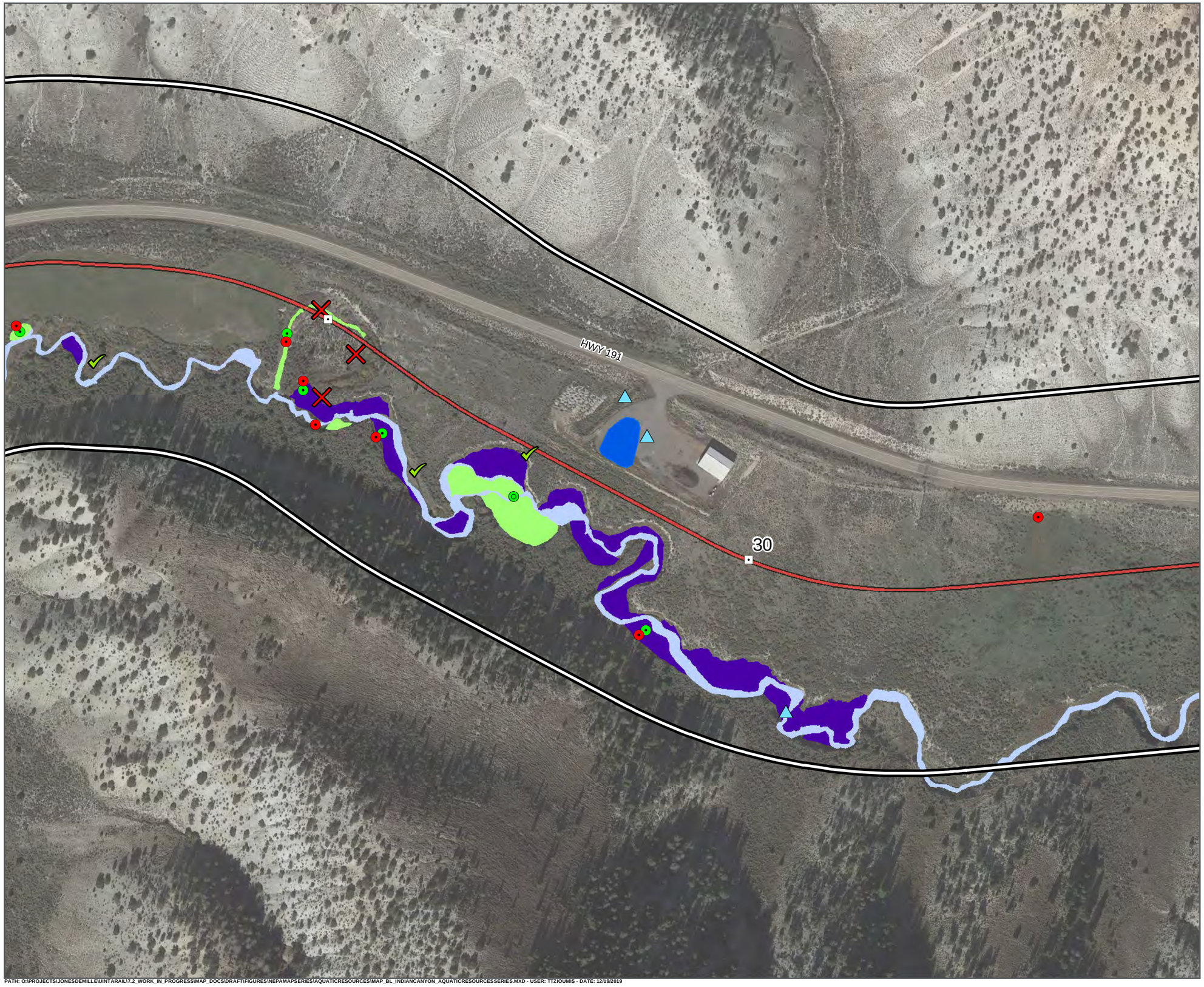
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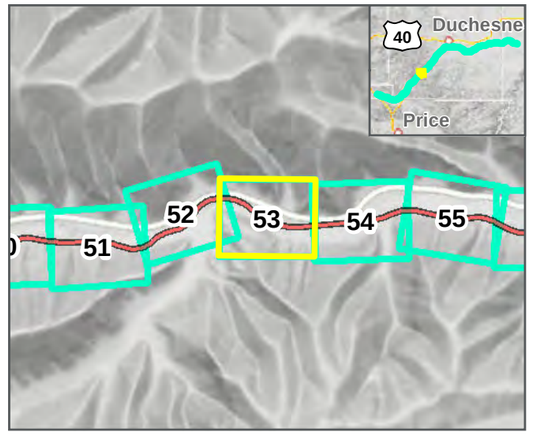
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery
Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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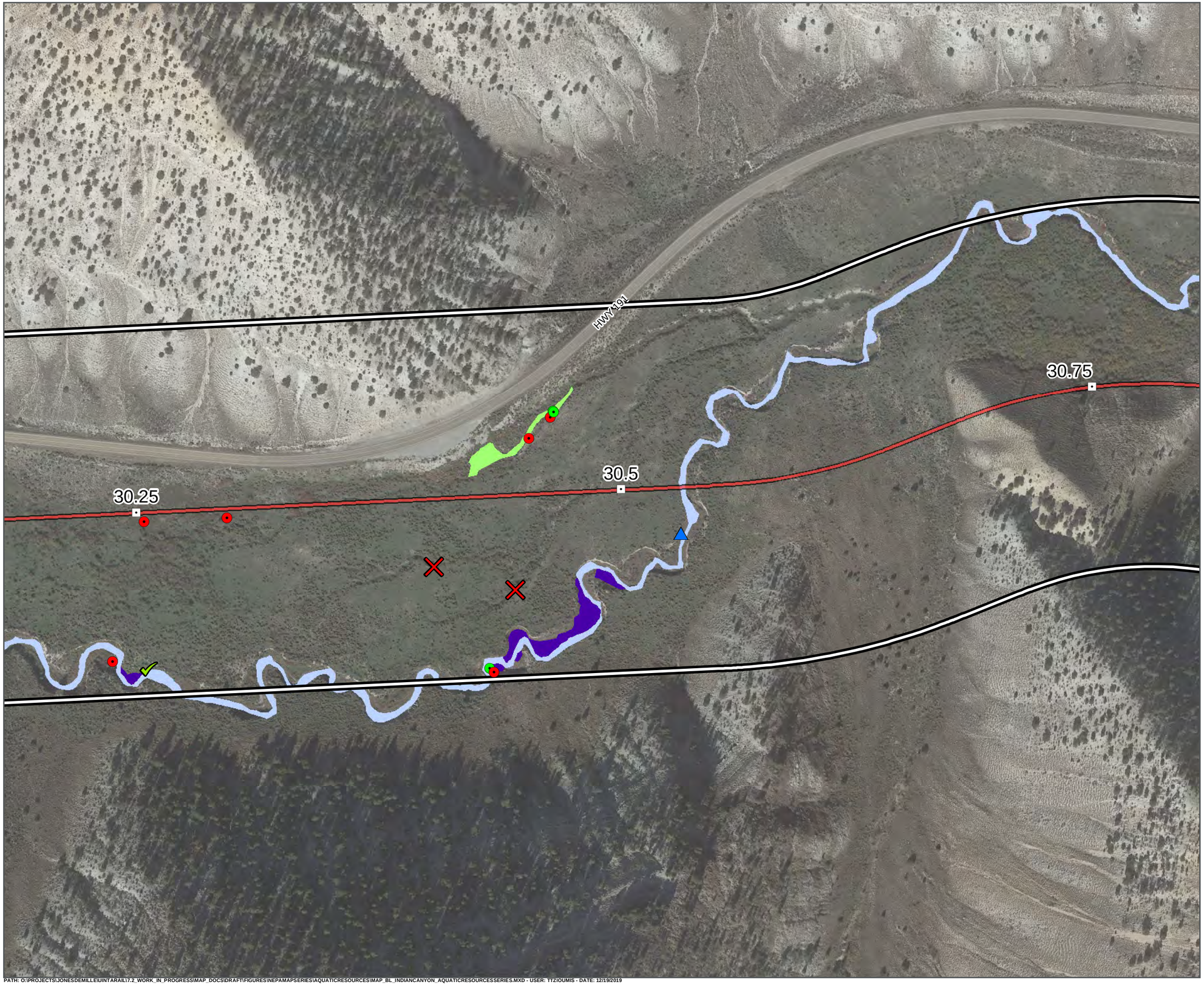
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DECEMBER 2019

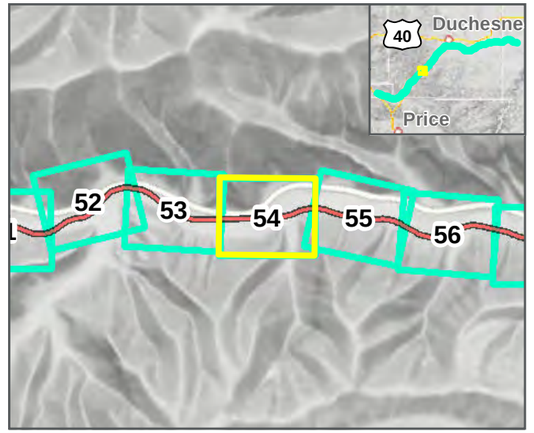
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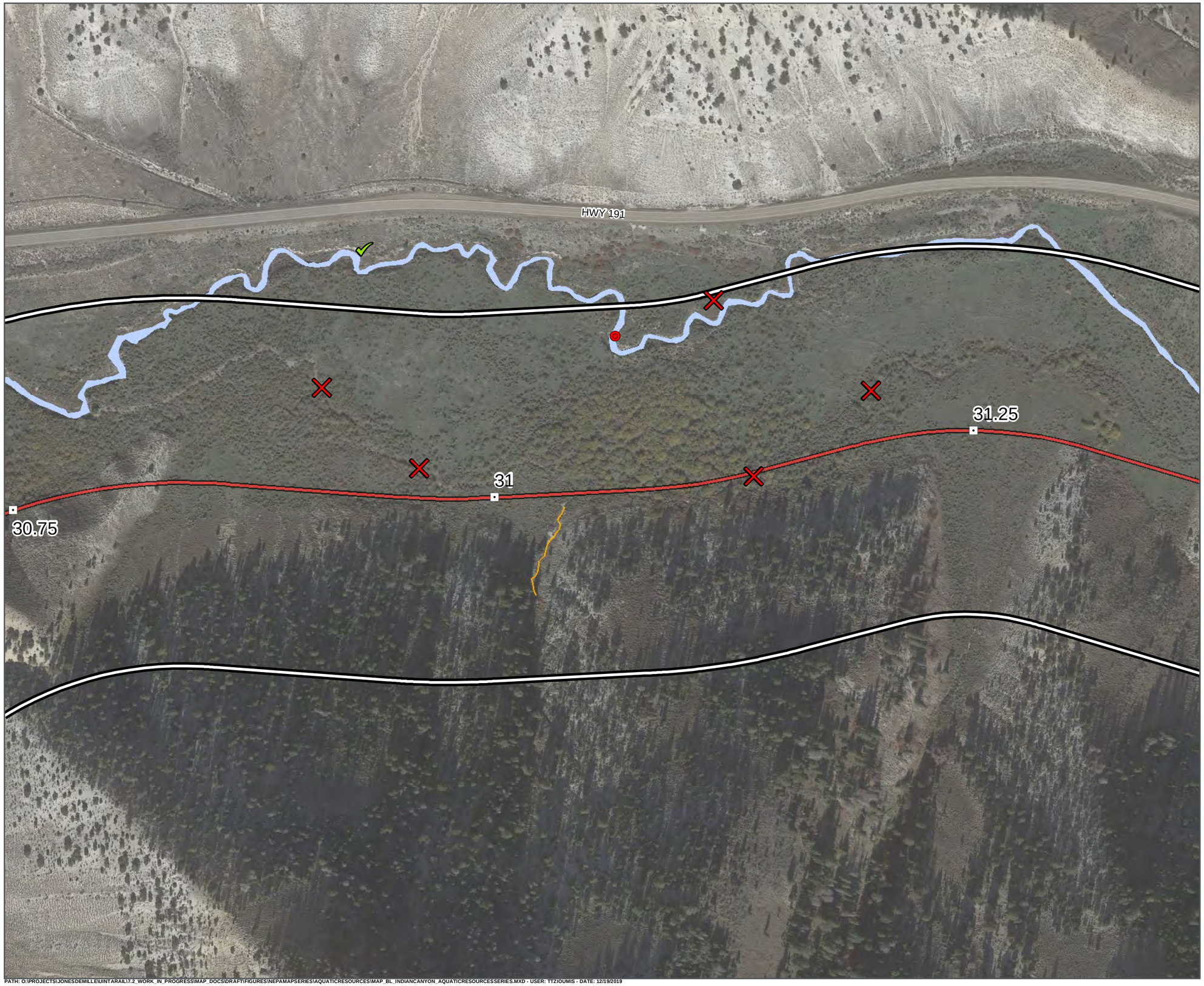
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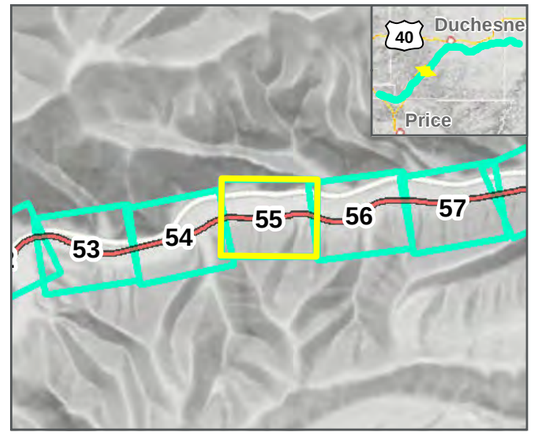
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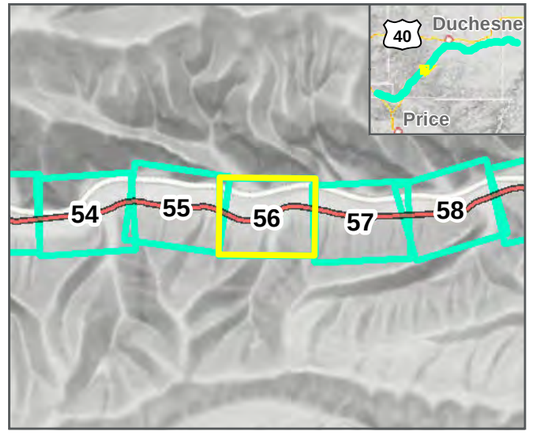
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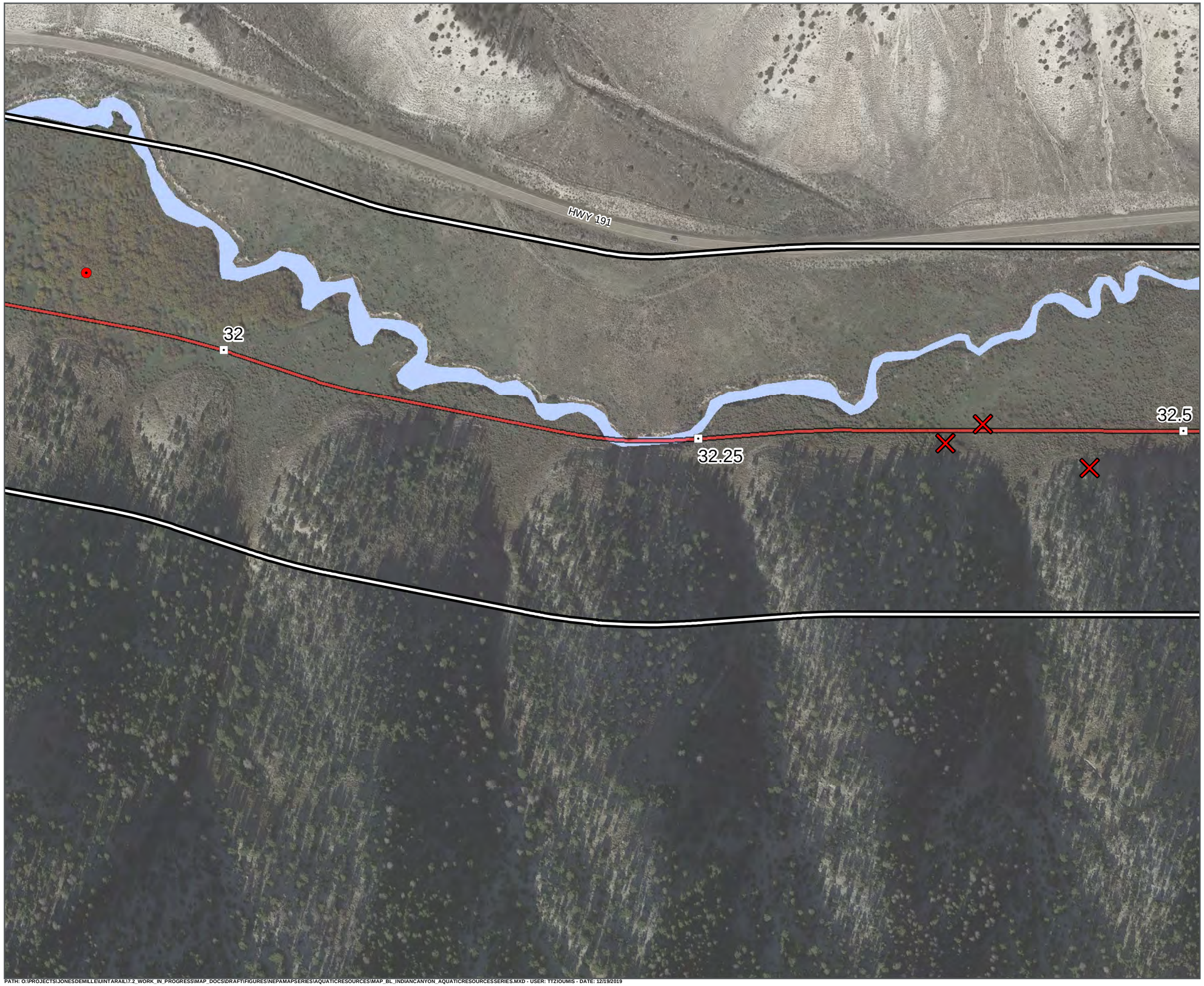
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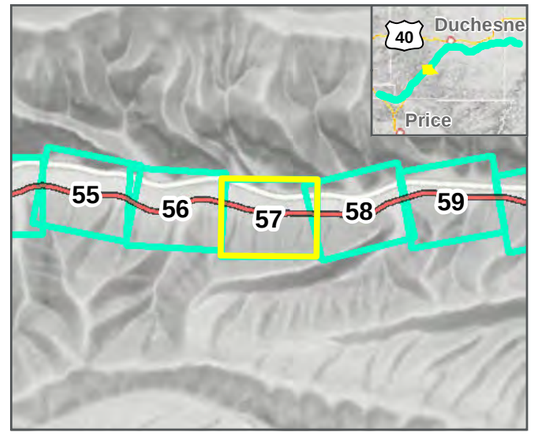
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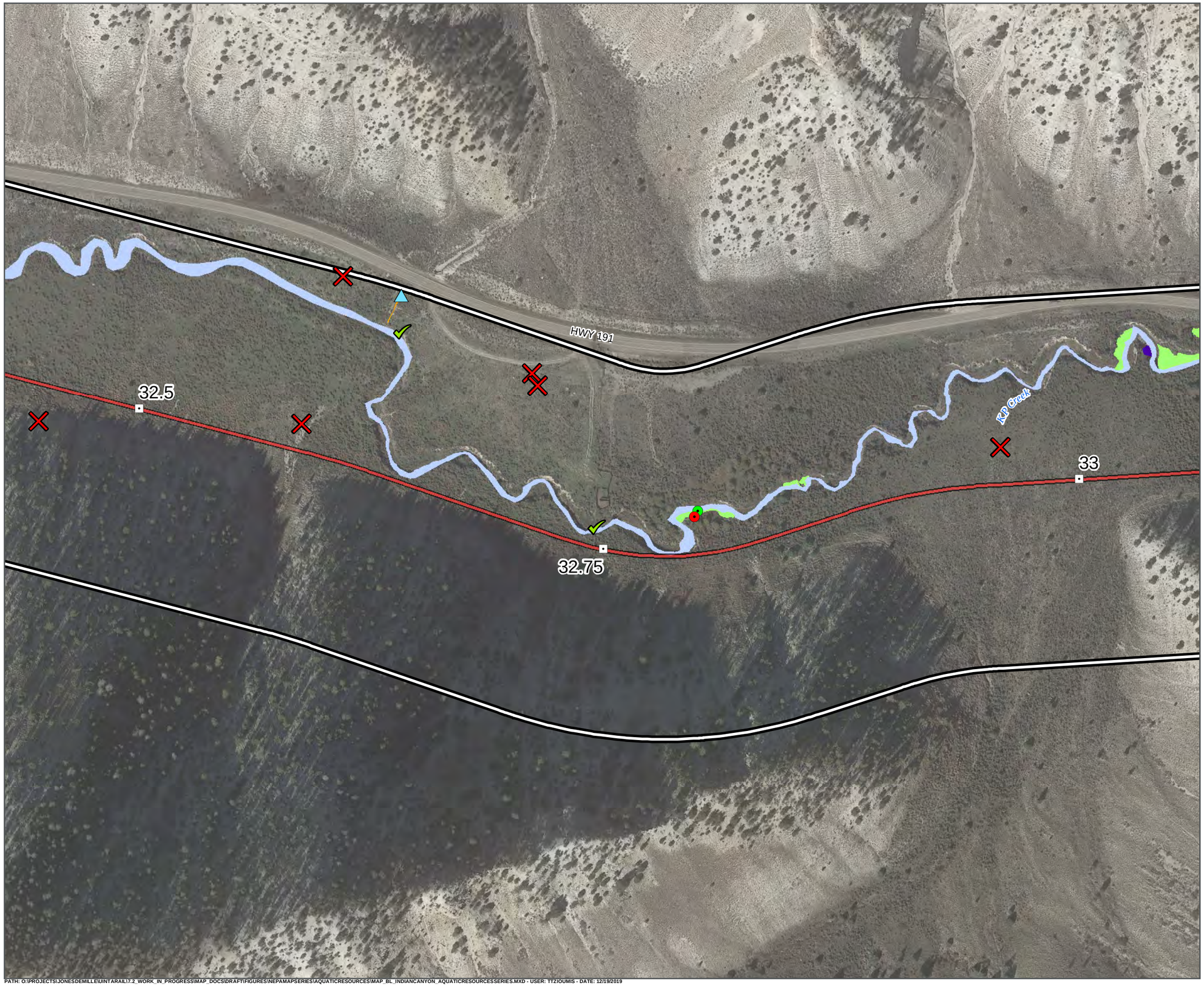
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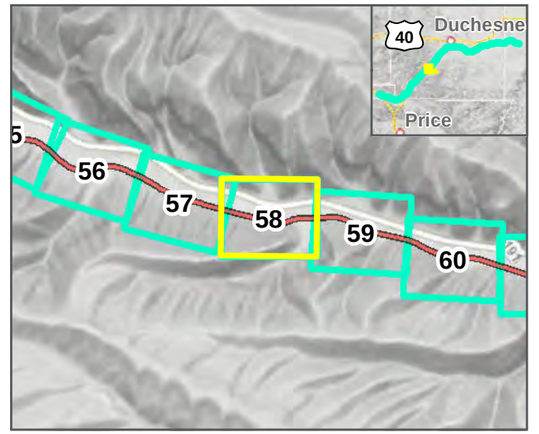
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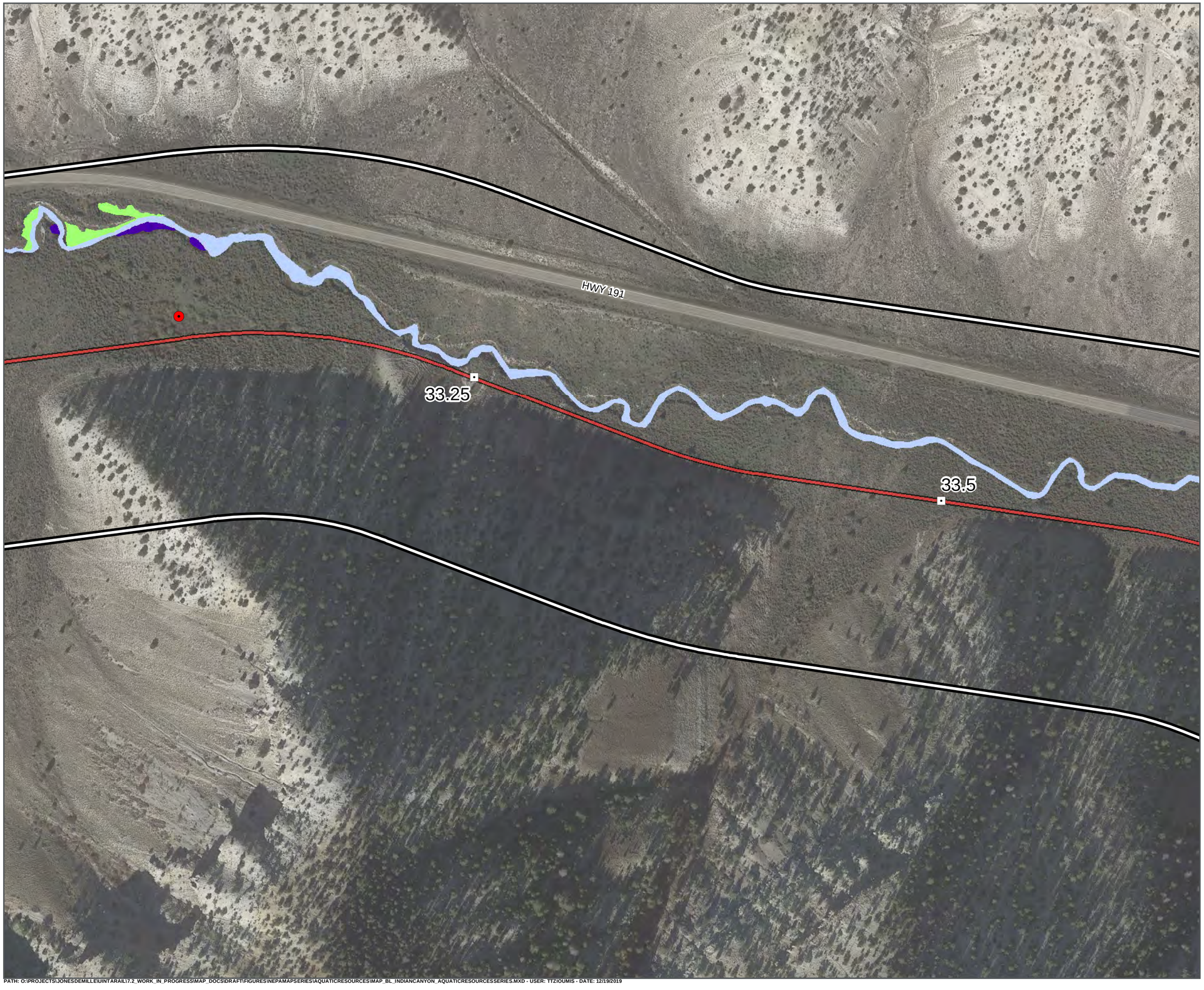
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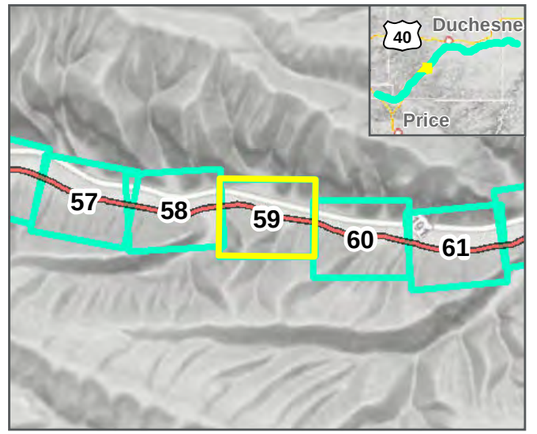
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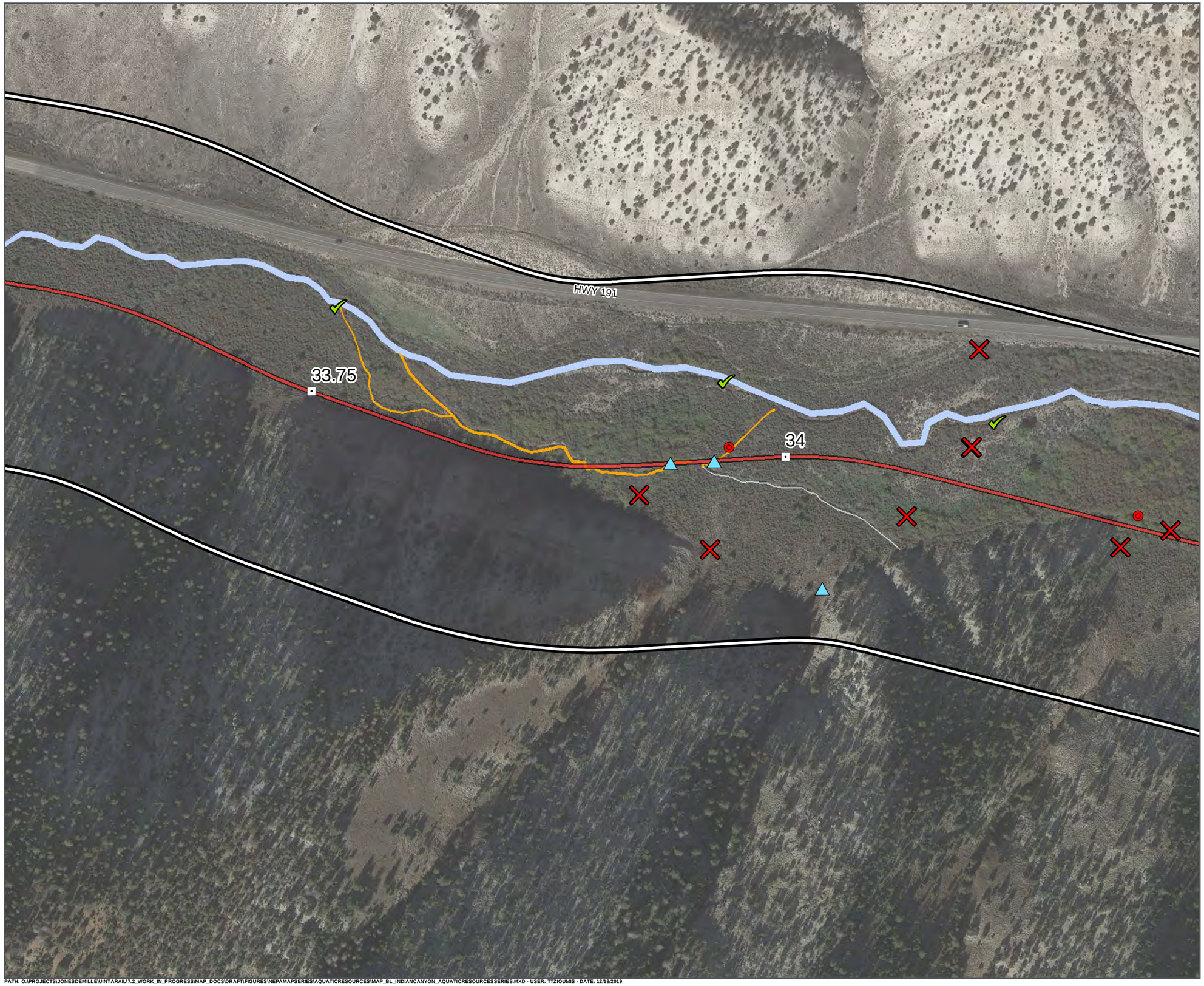
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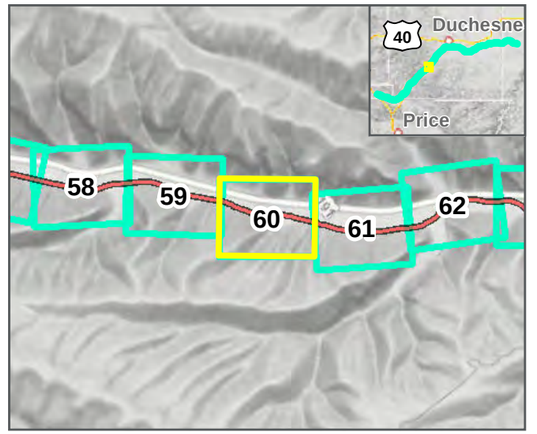
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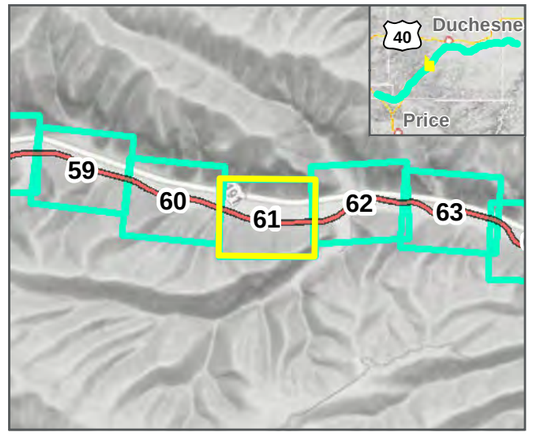
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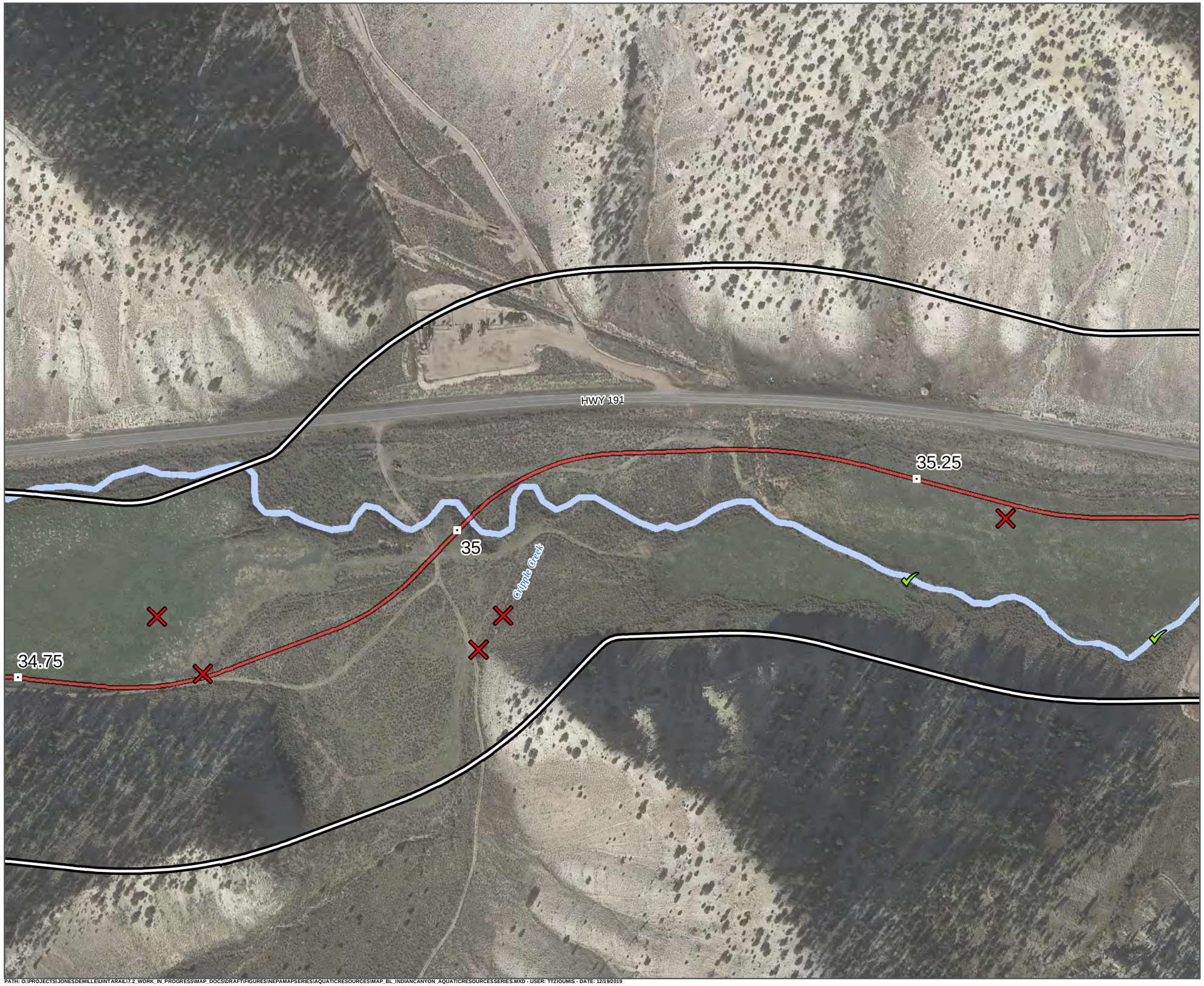
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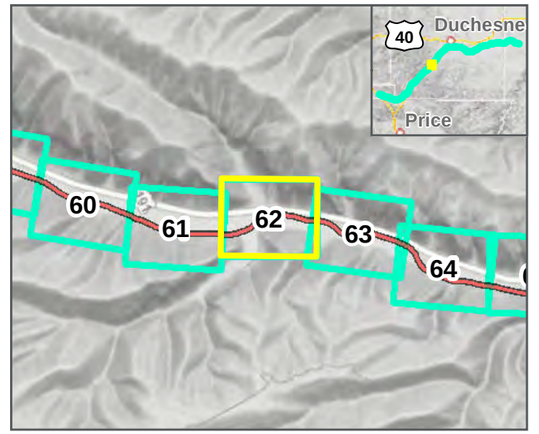
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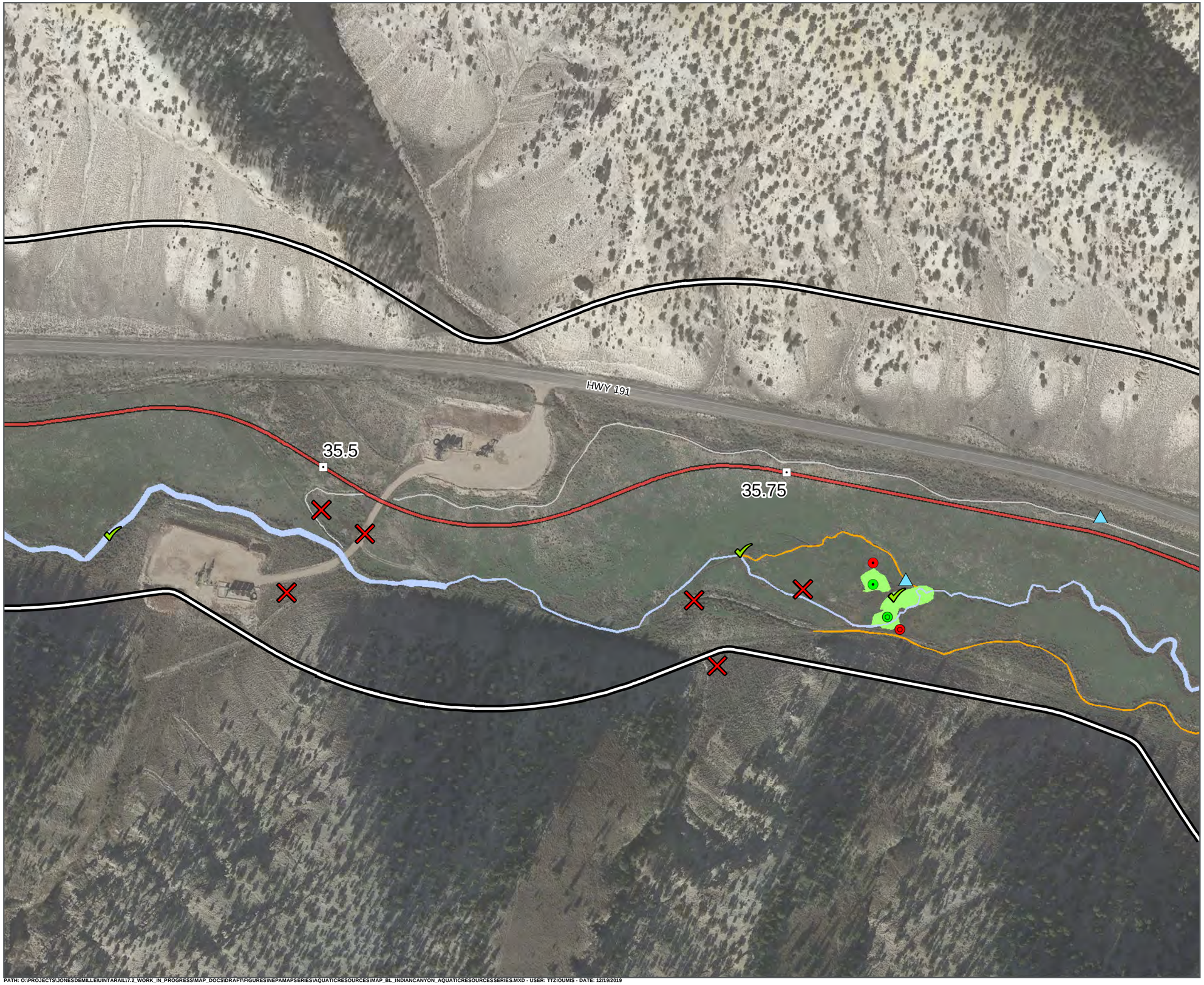
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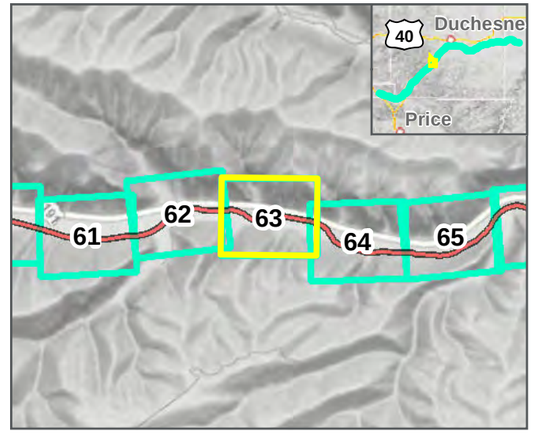
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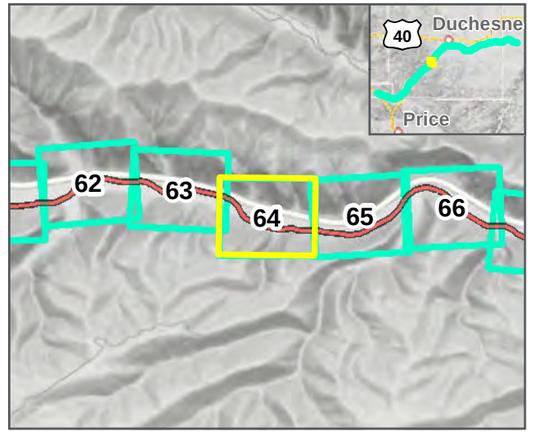
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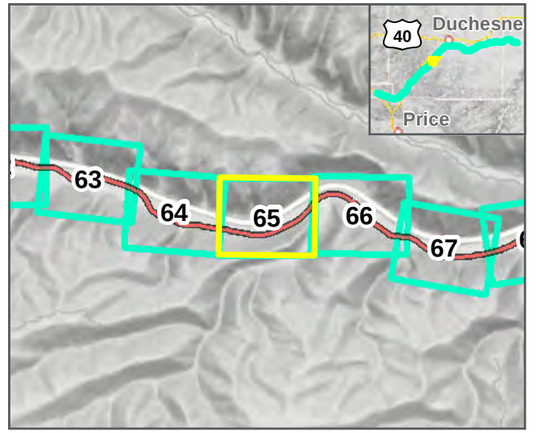
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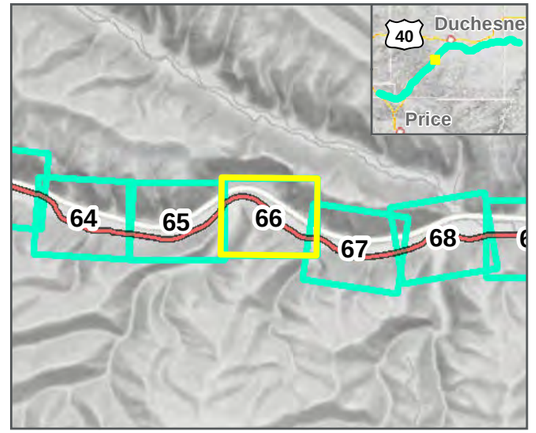
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- Ditch/Canal
- Study Area
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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

0 125 250 Feet

1 inch = 250 Feet

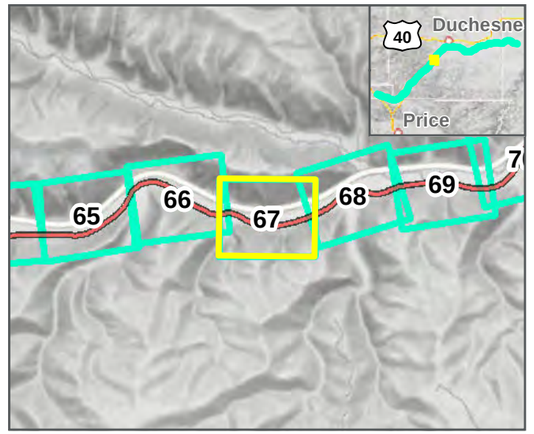
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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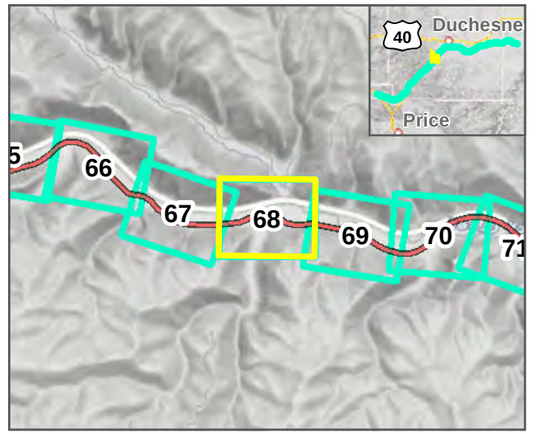
DATA SOURCES:
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SEVEN COUNTY INFRASTRUCTURE COALITION

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DECEMBER 2019

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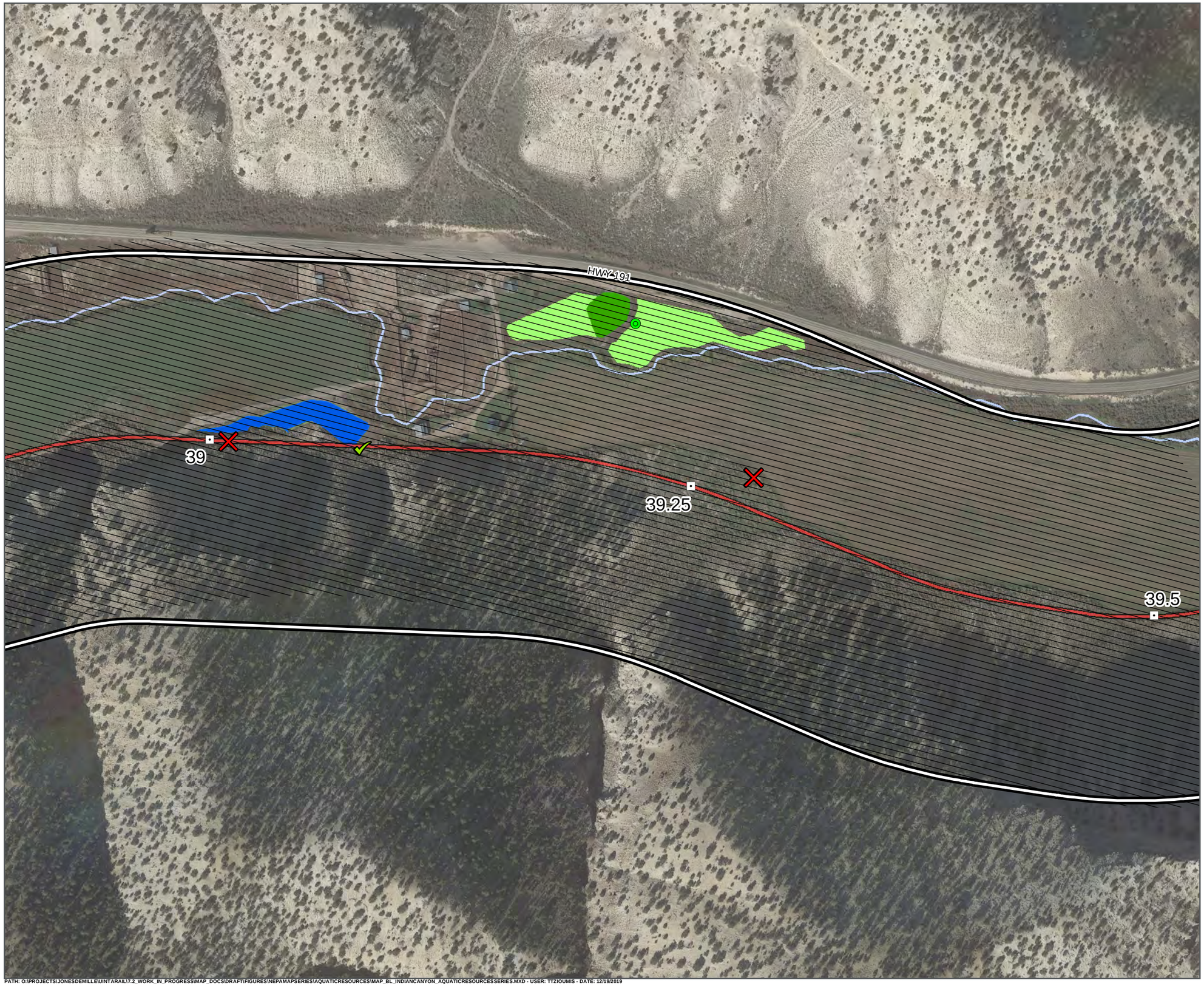
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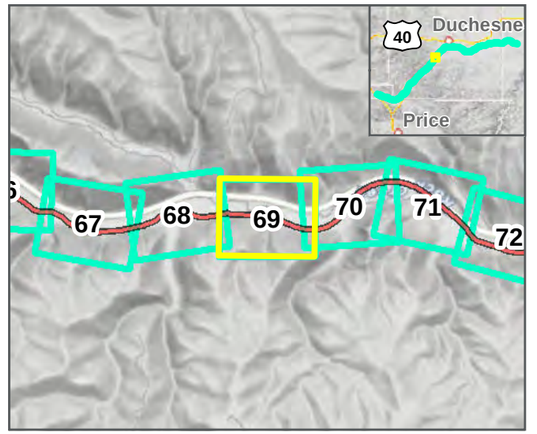
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SEVEN COUNTY INFRASTRUCTURE COALITION

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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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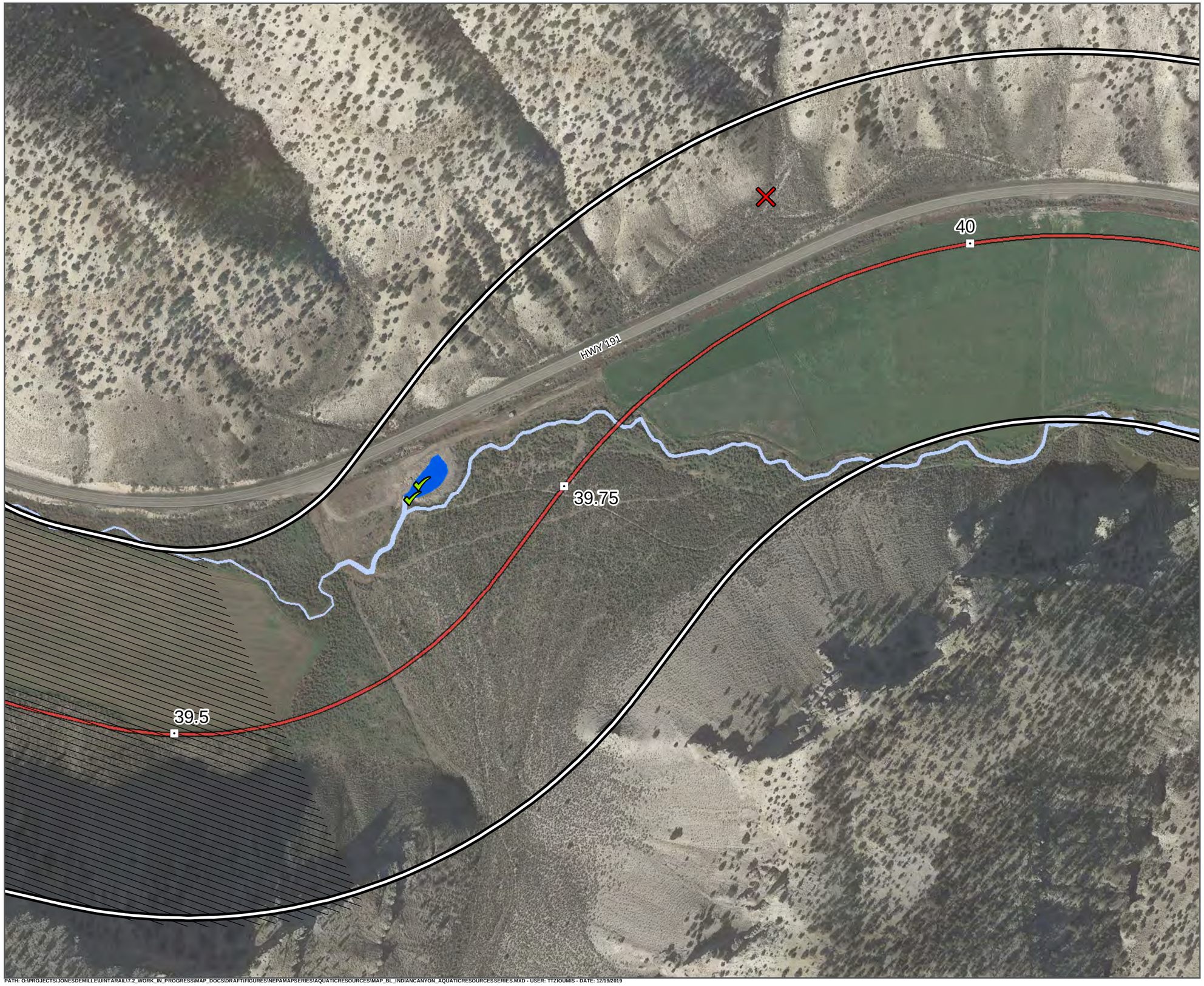
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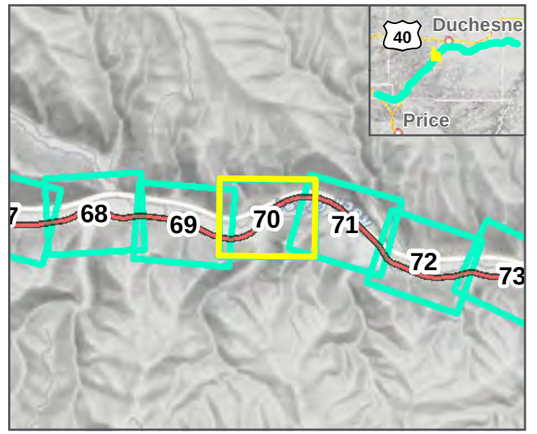
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Utah State Plane

Seven County Infrastructure Coalition

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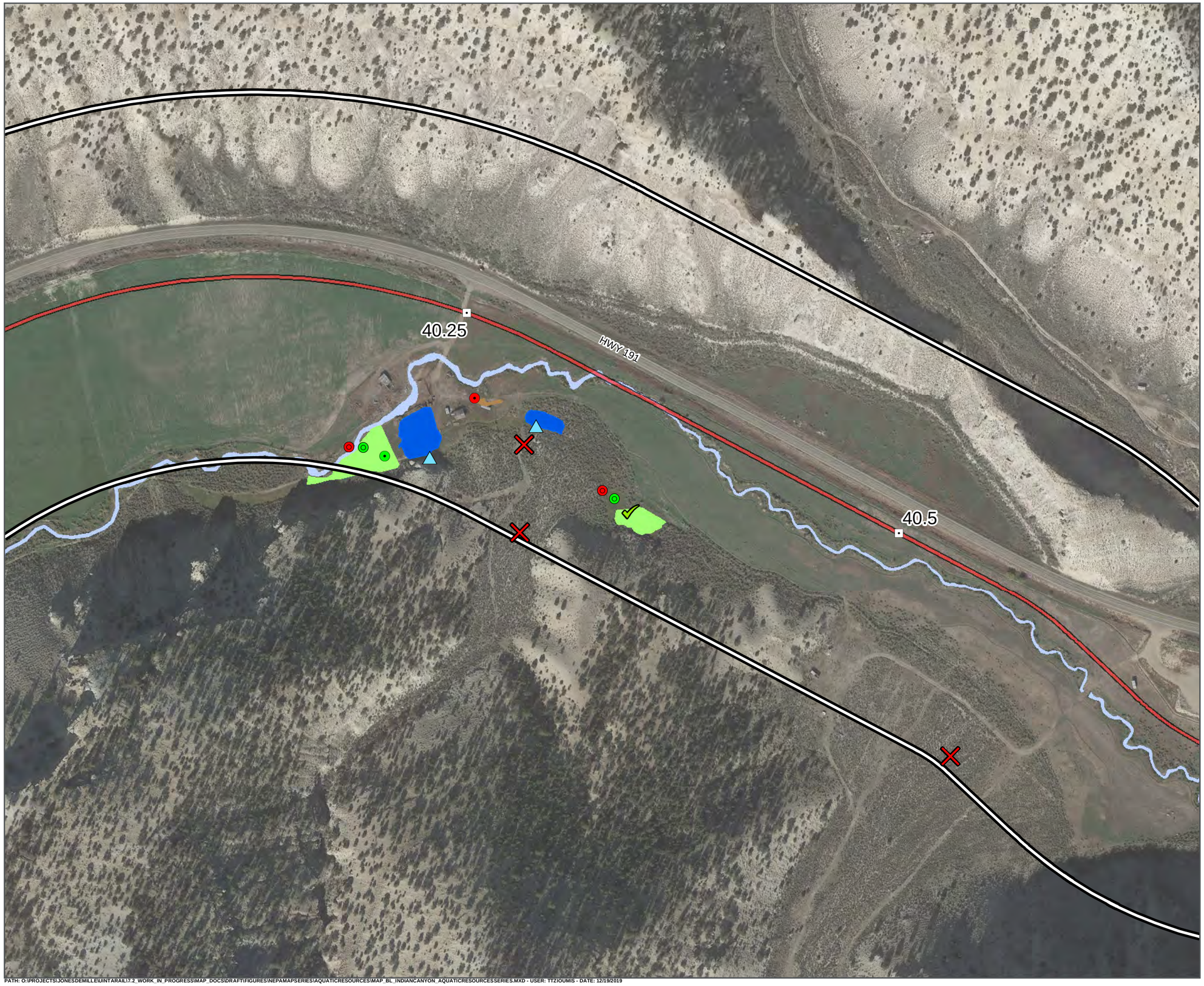
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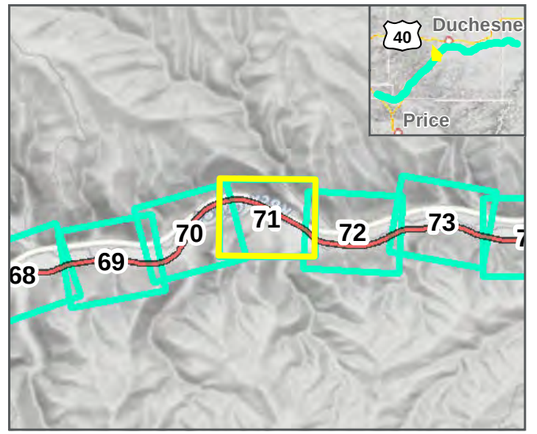
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SEVEN COUNTY INFRASTRUCTURE COALITION

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INDIAN CANYON ALTERNATIVE: 11/22/2019

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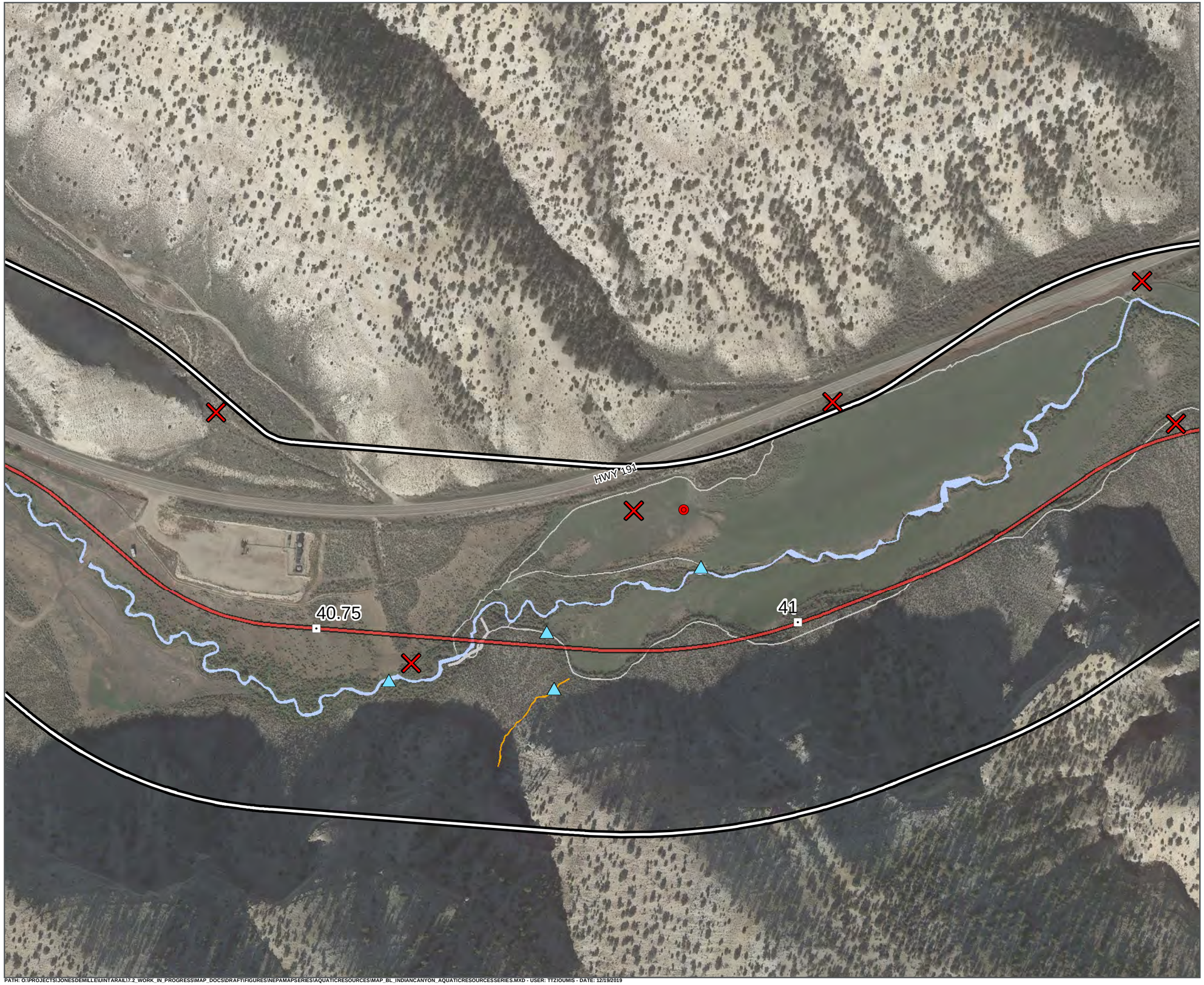
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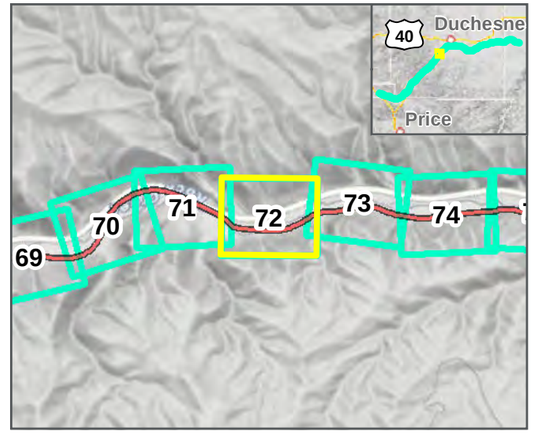
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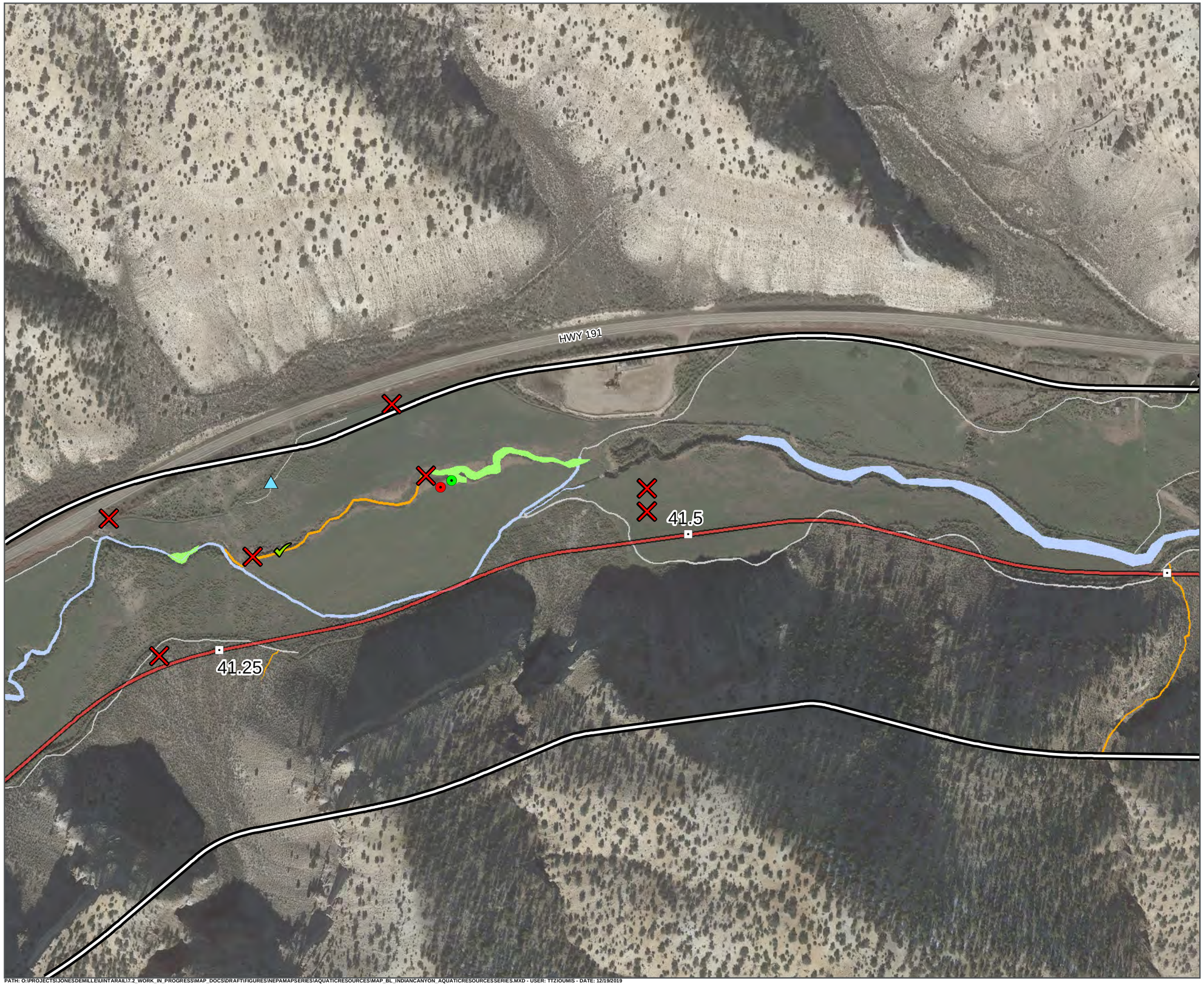
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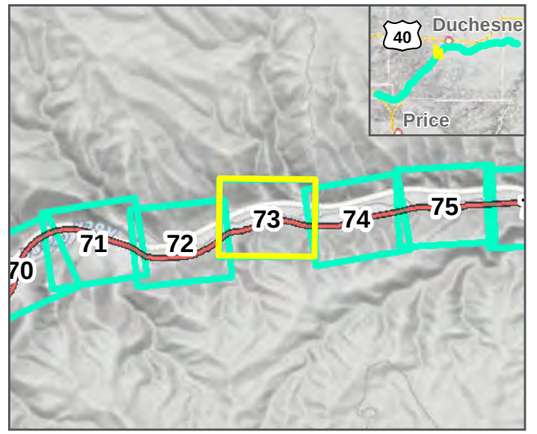
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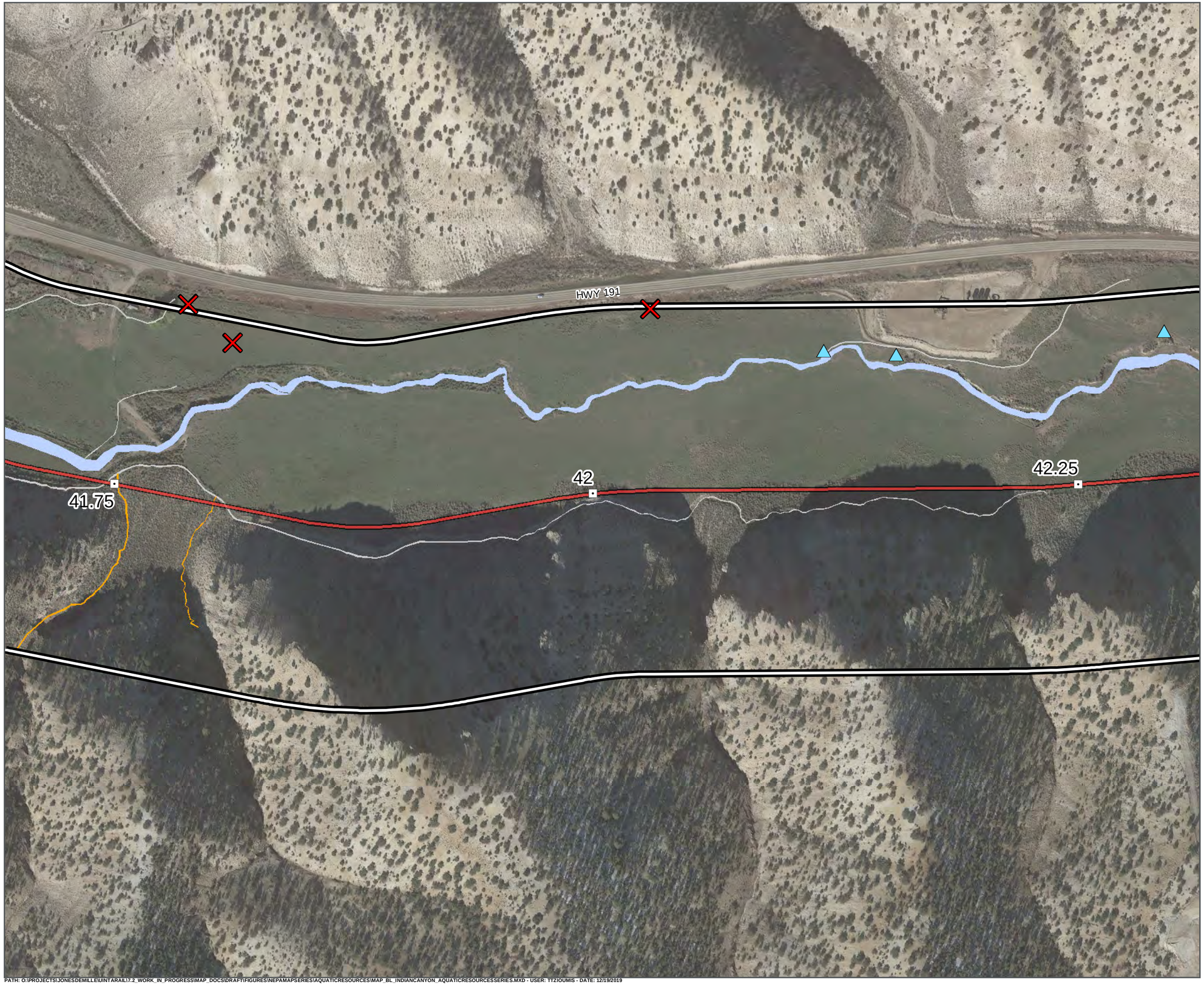
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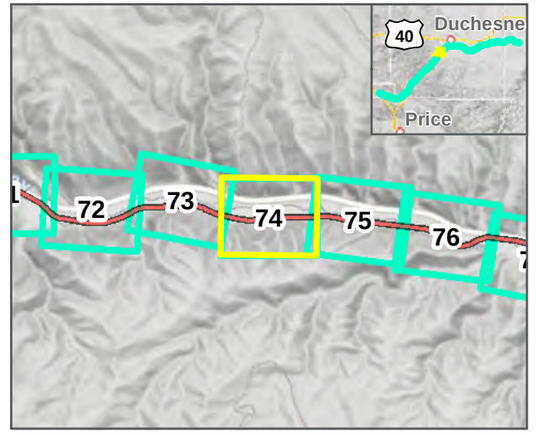
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SEVEN COUNTY INFRASTRUCTURE COALITION

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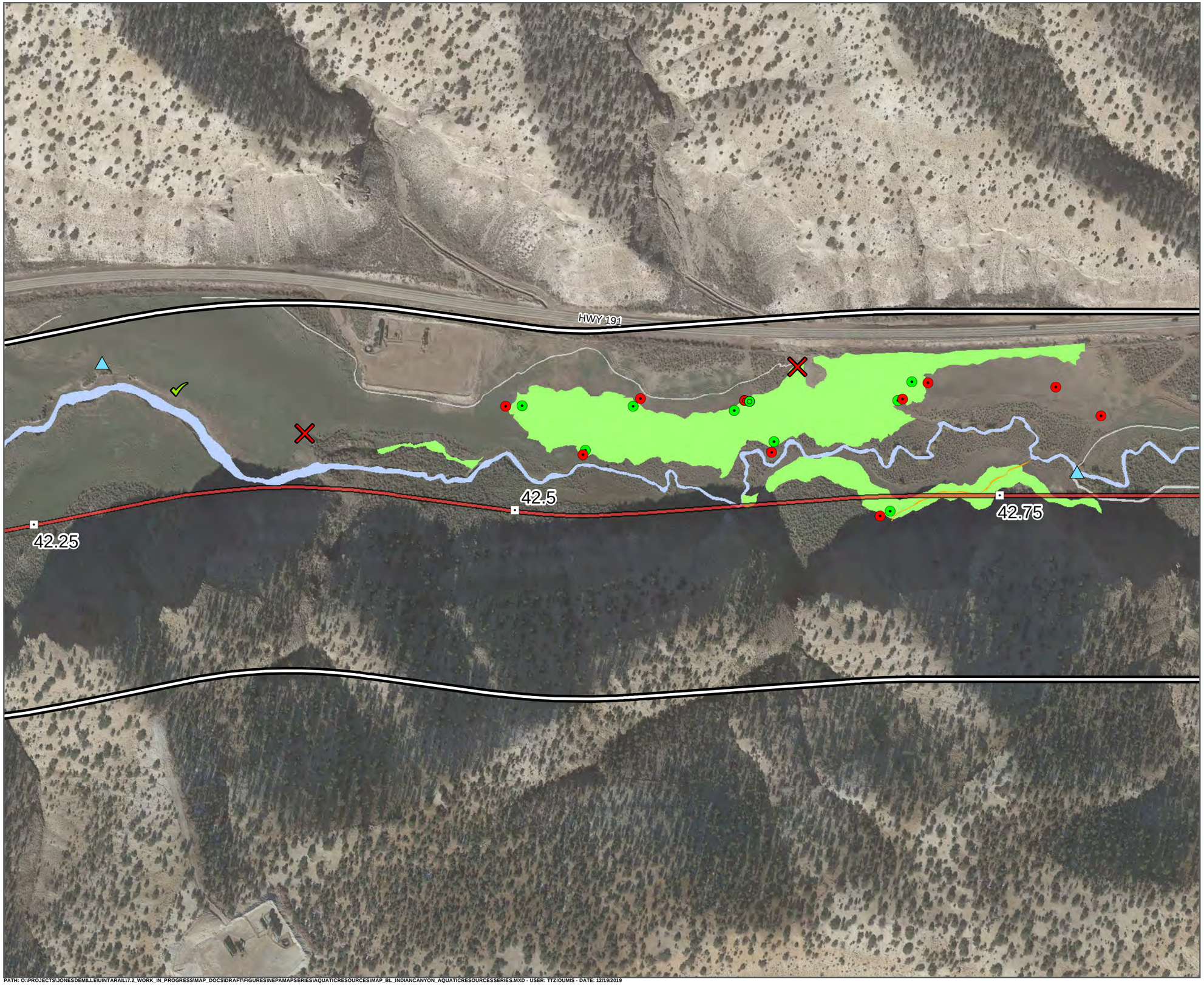
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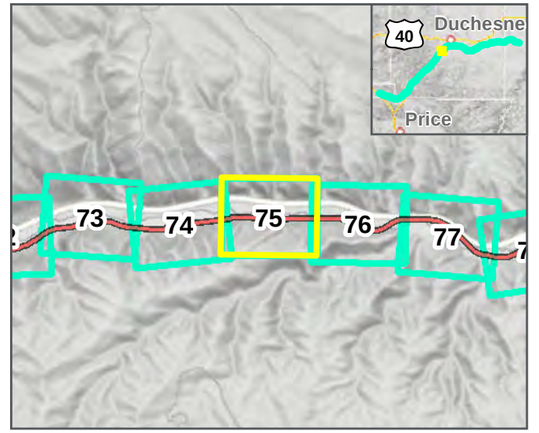
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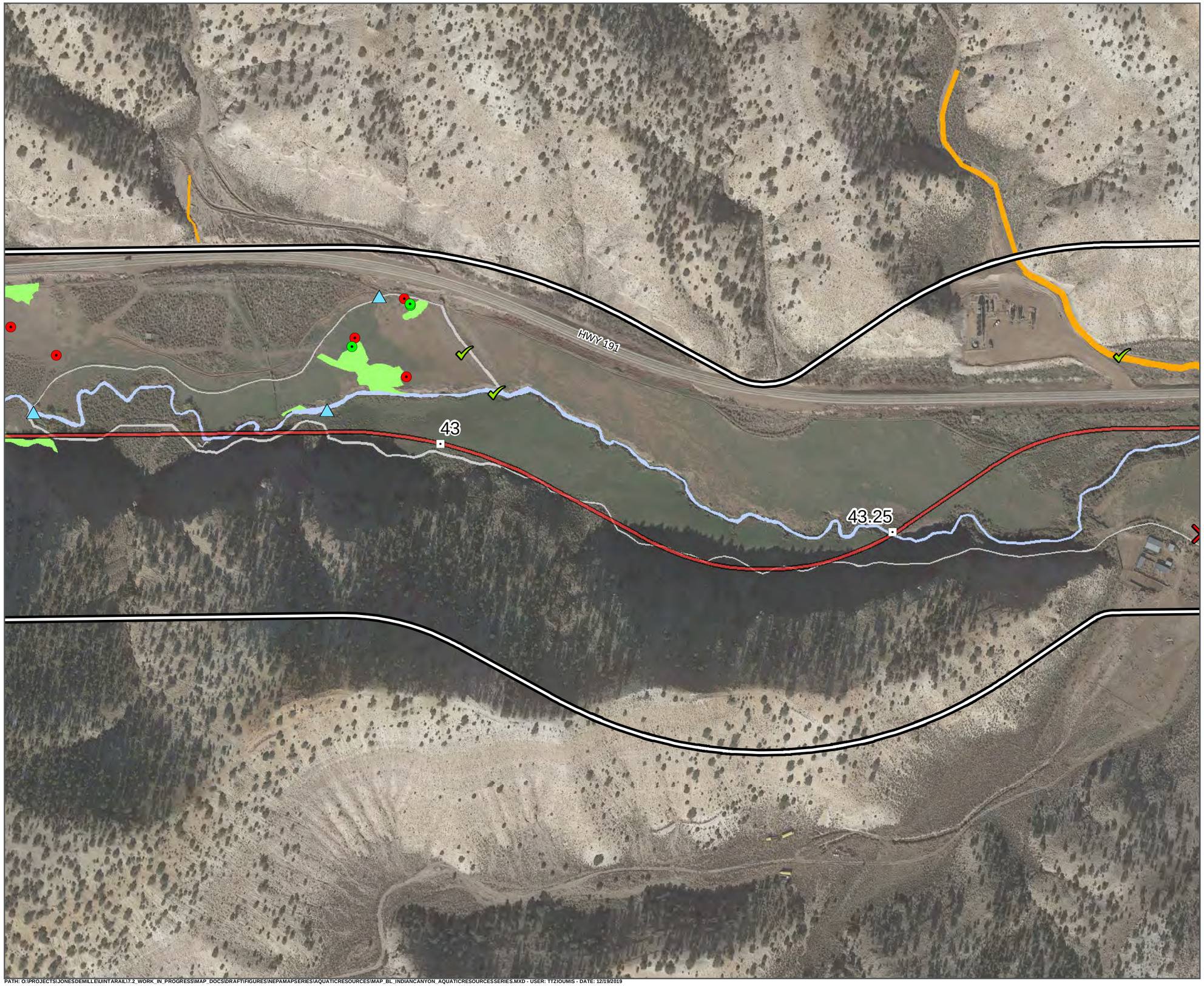
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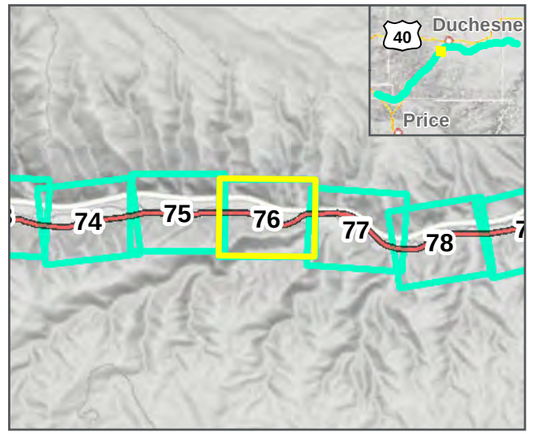
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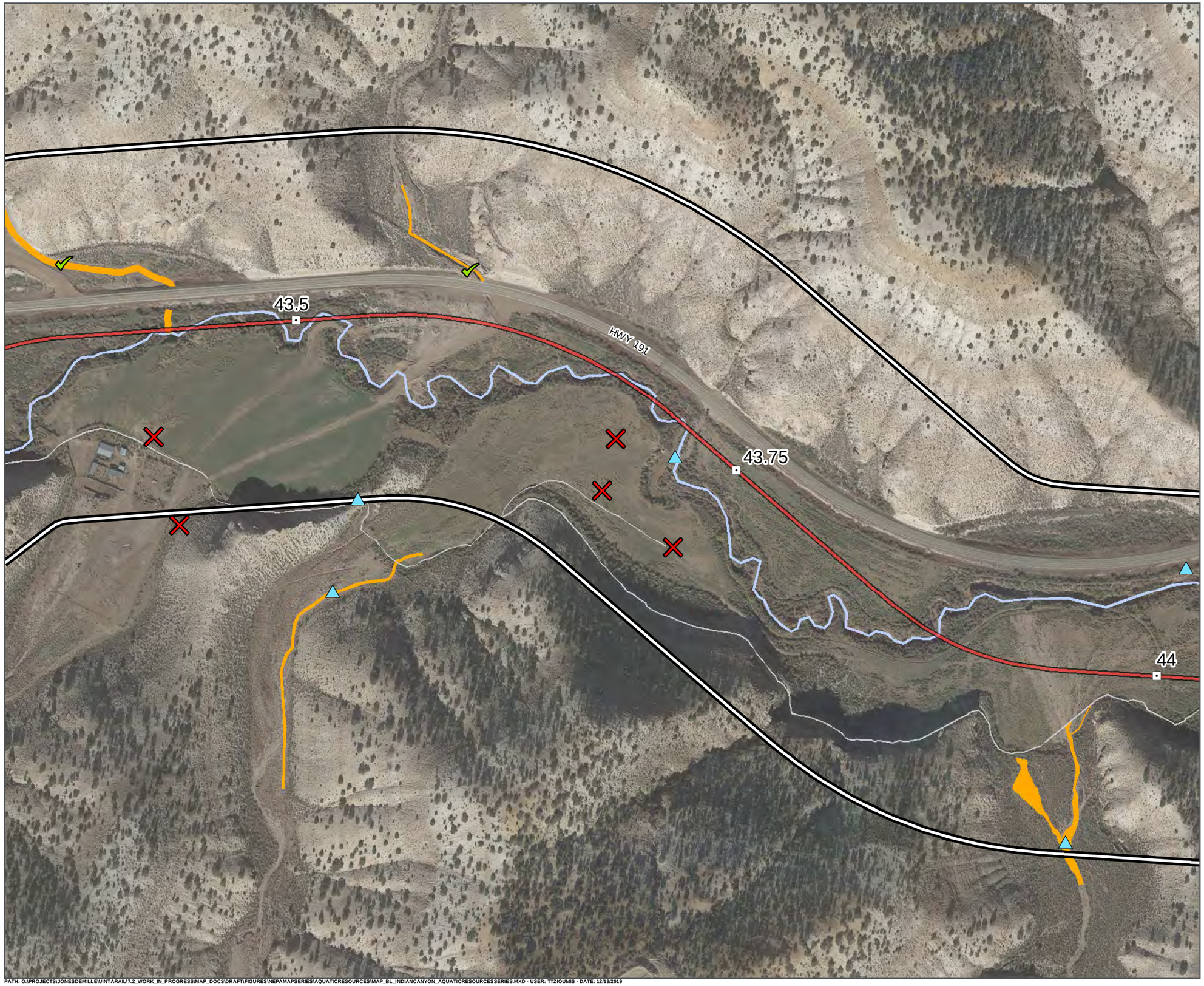
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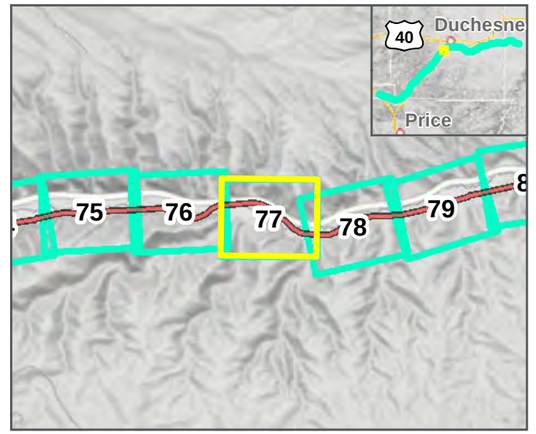
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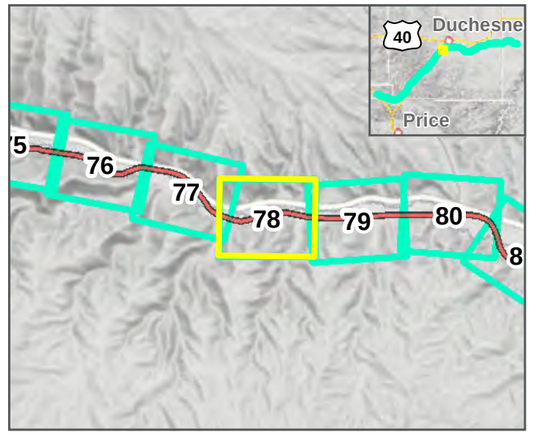
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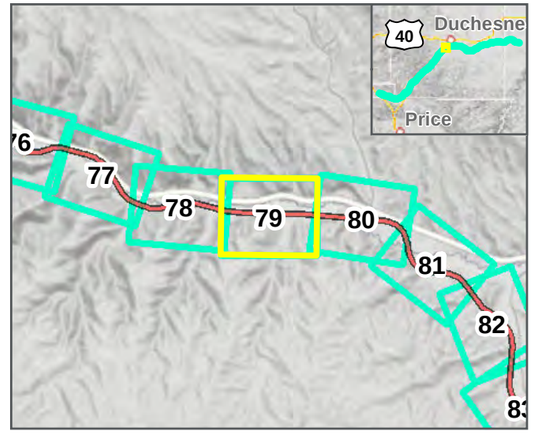
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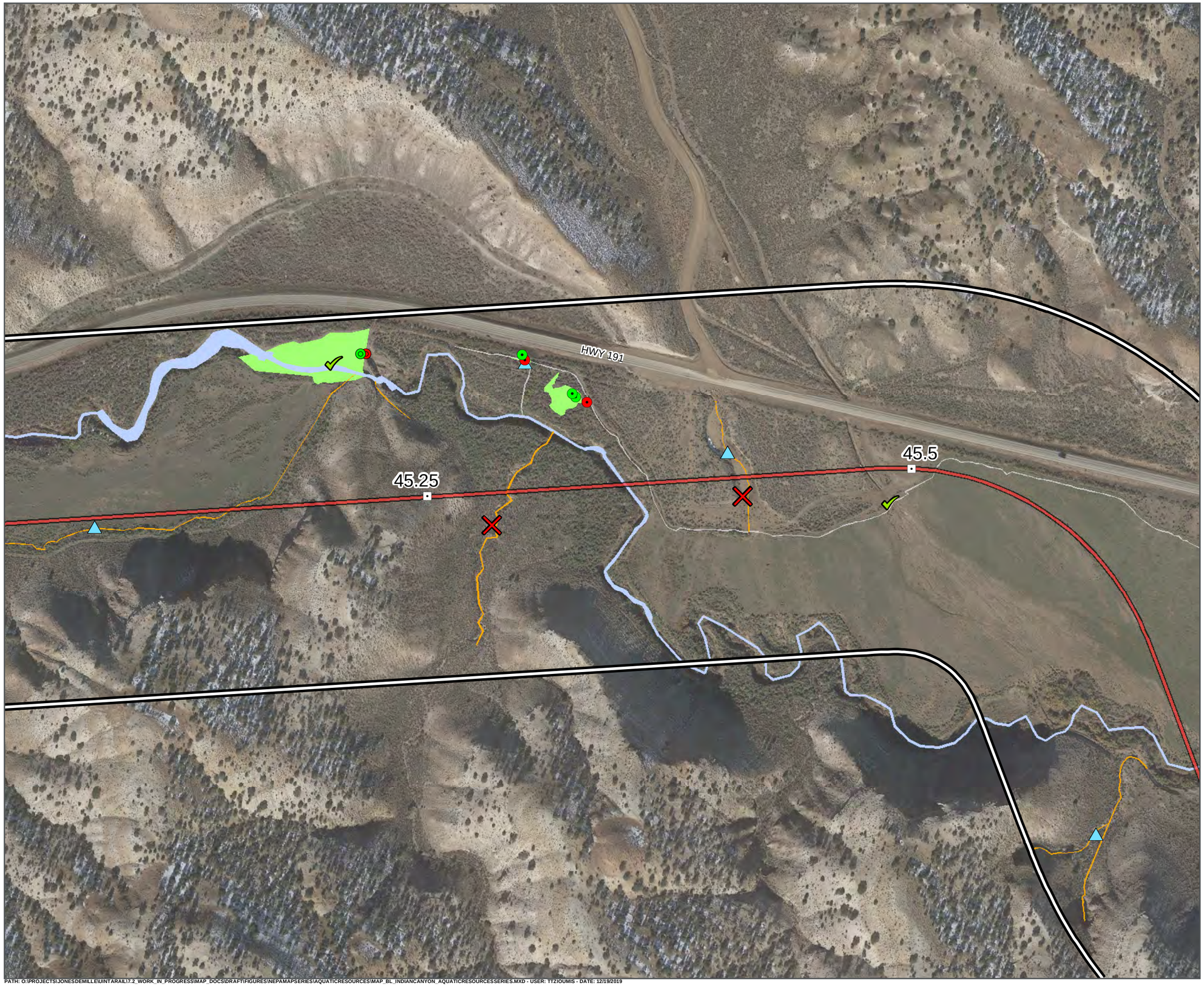
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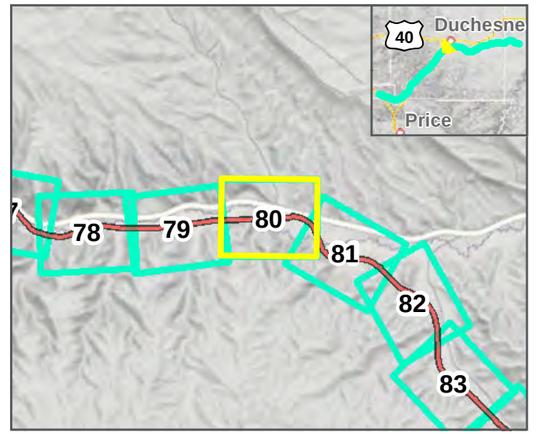
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HDR Field Work & Engineering 2019
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COODINATE SYSTEM:
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SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

PATH: O:\PROJECTS\JONESDEMILLE\UINTARAIL\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\FIGURES\NEPAMAPSERIES\AQUATICRESOURCES\MAP_BL_INDIANCANYON_AQUATICRESOURCESSERIES.MXD - USER: TTZIOUMIS - DATE: 12/19/2019





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- Study Area
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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

0 125 250 Feet

1 inch = 250 Feet

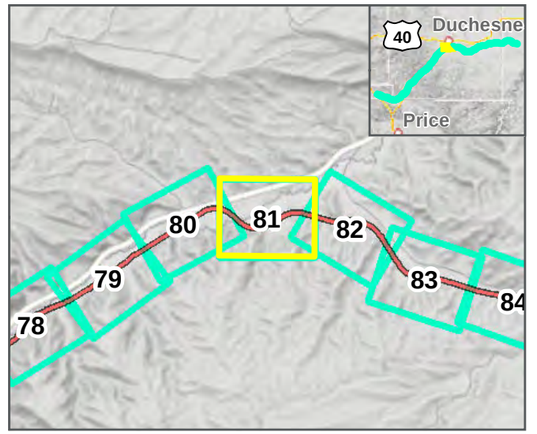
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DECEMBER 2019

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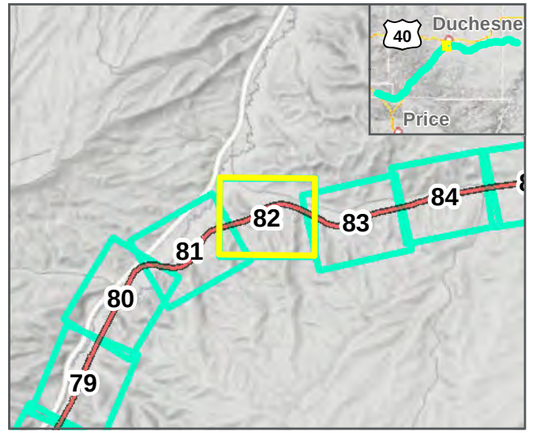
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DECEMBER 2019

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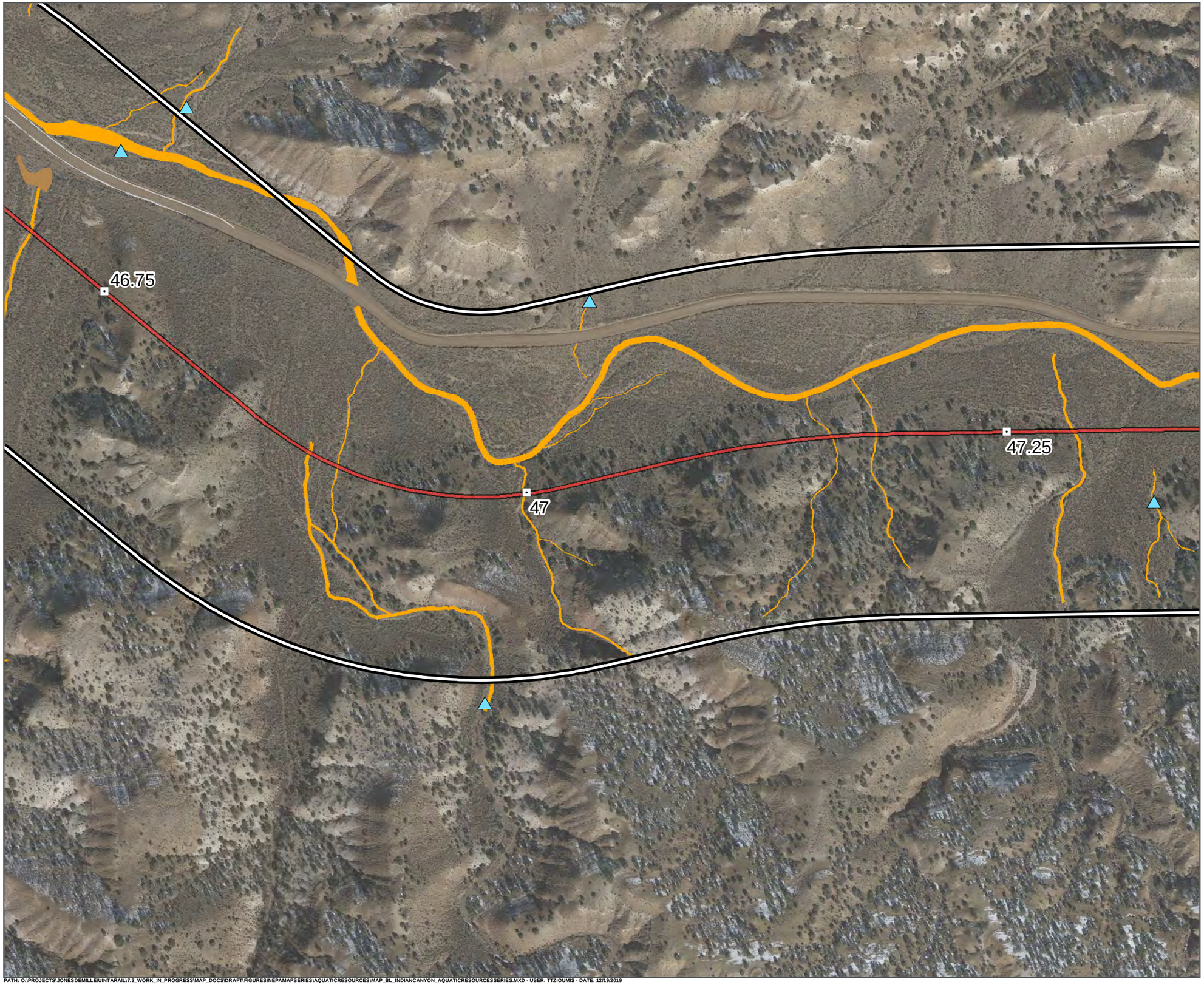
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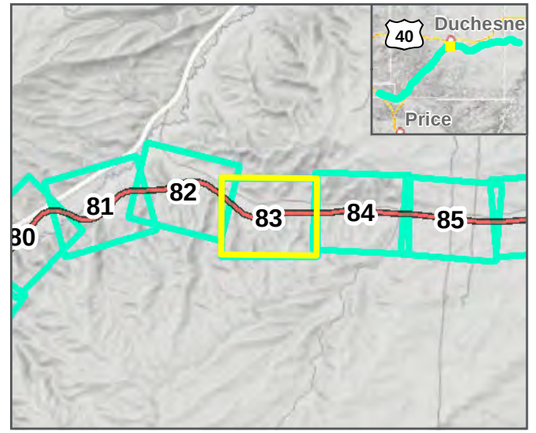
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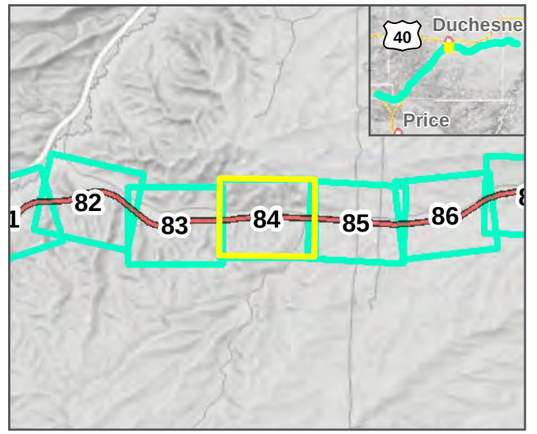
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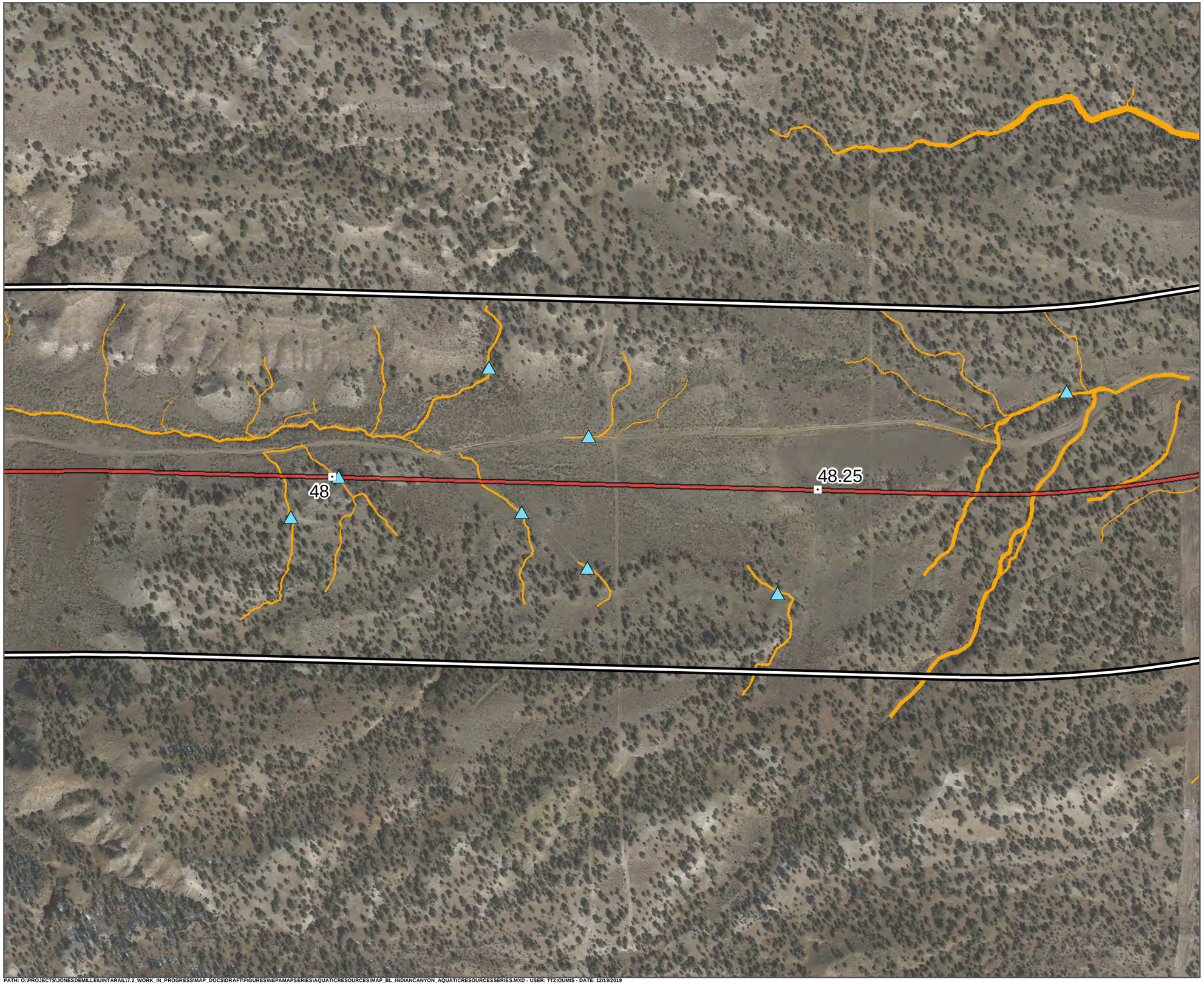
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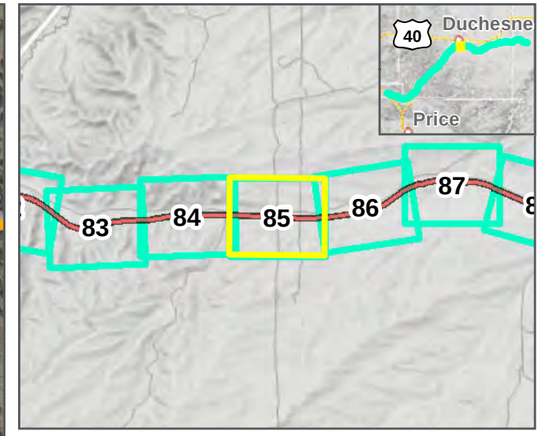
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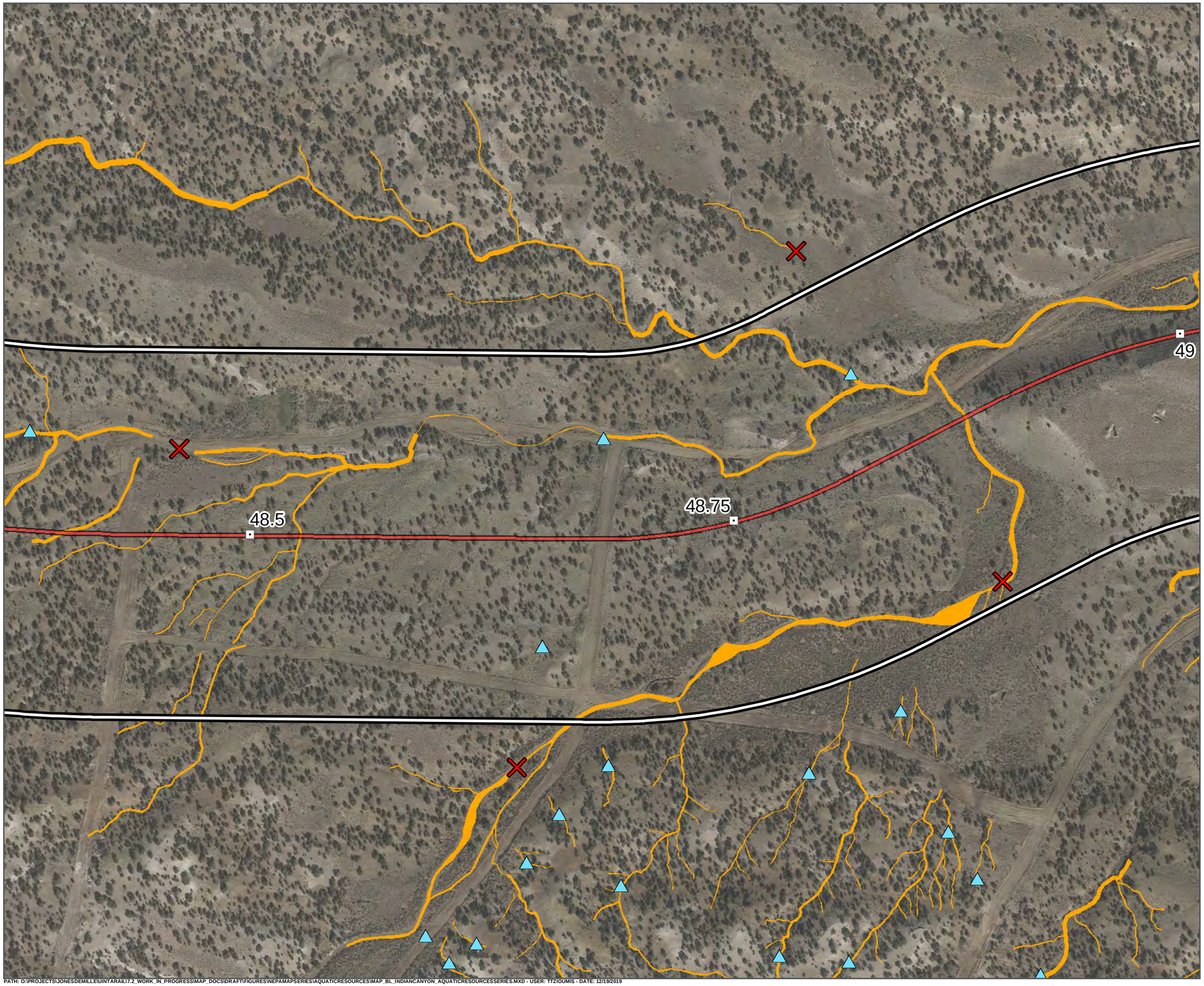
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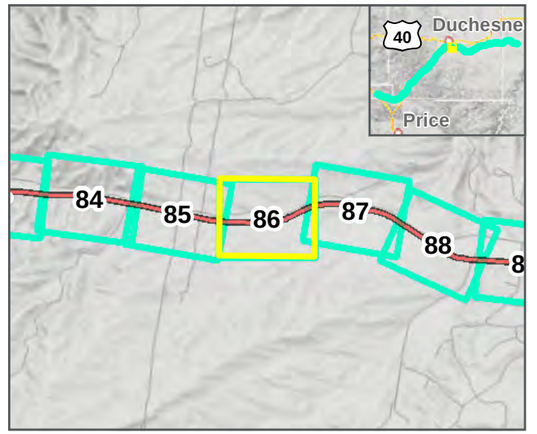
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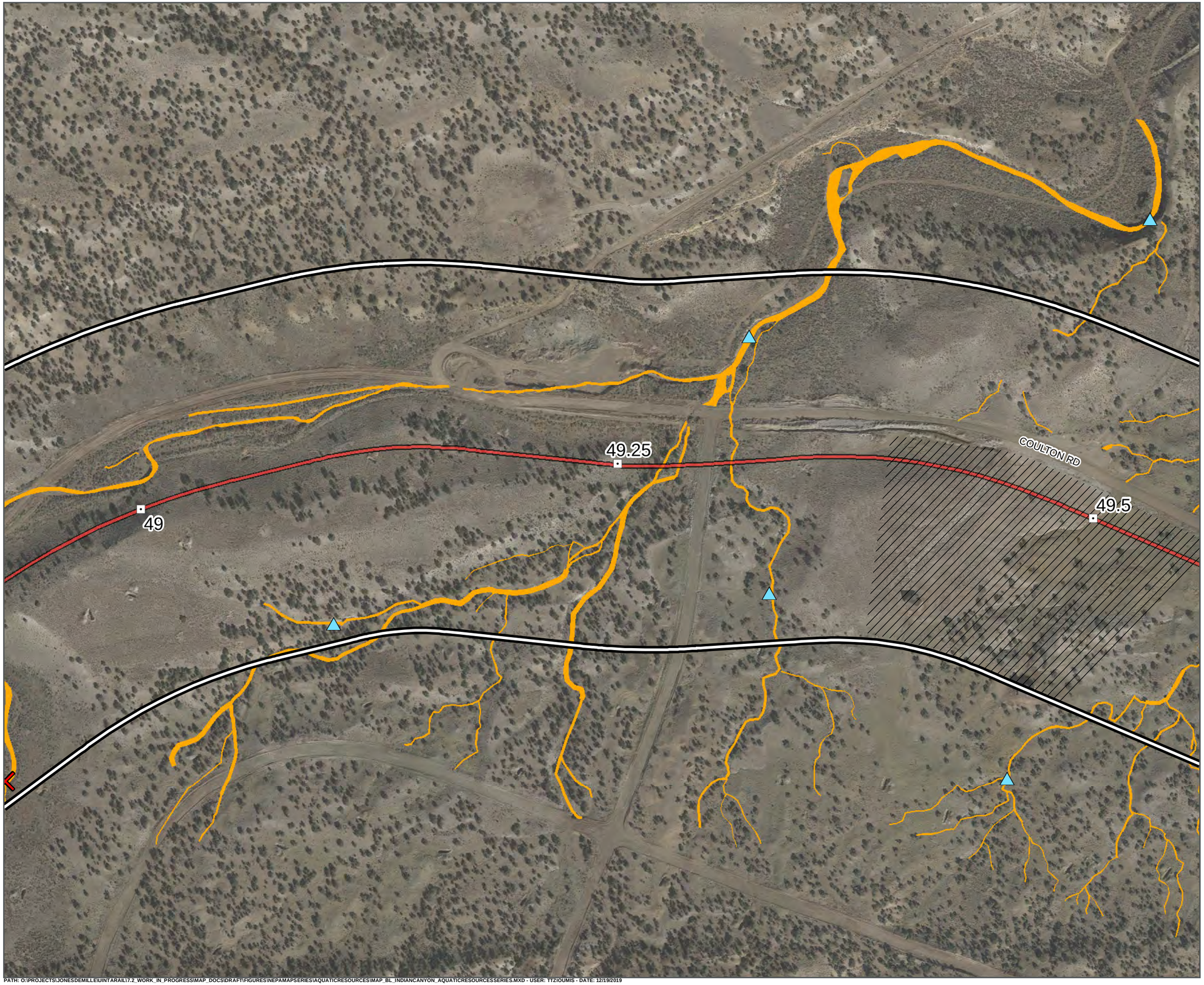
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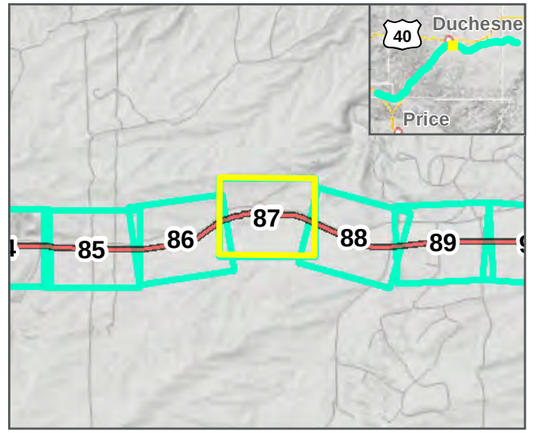
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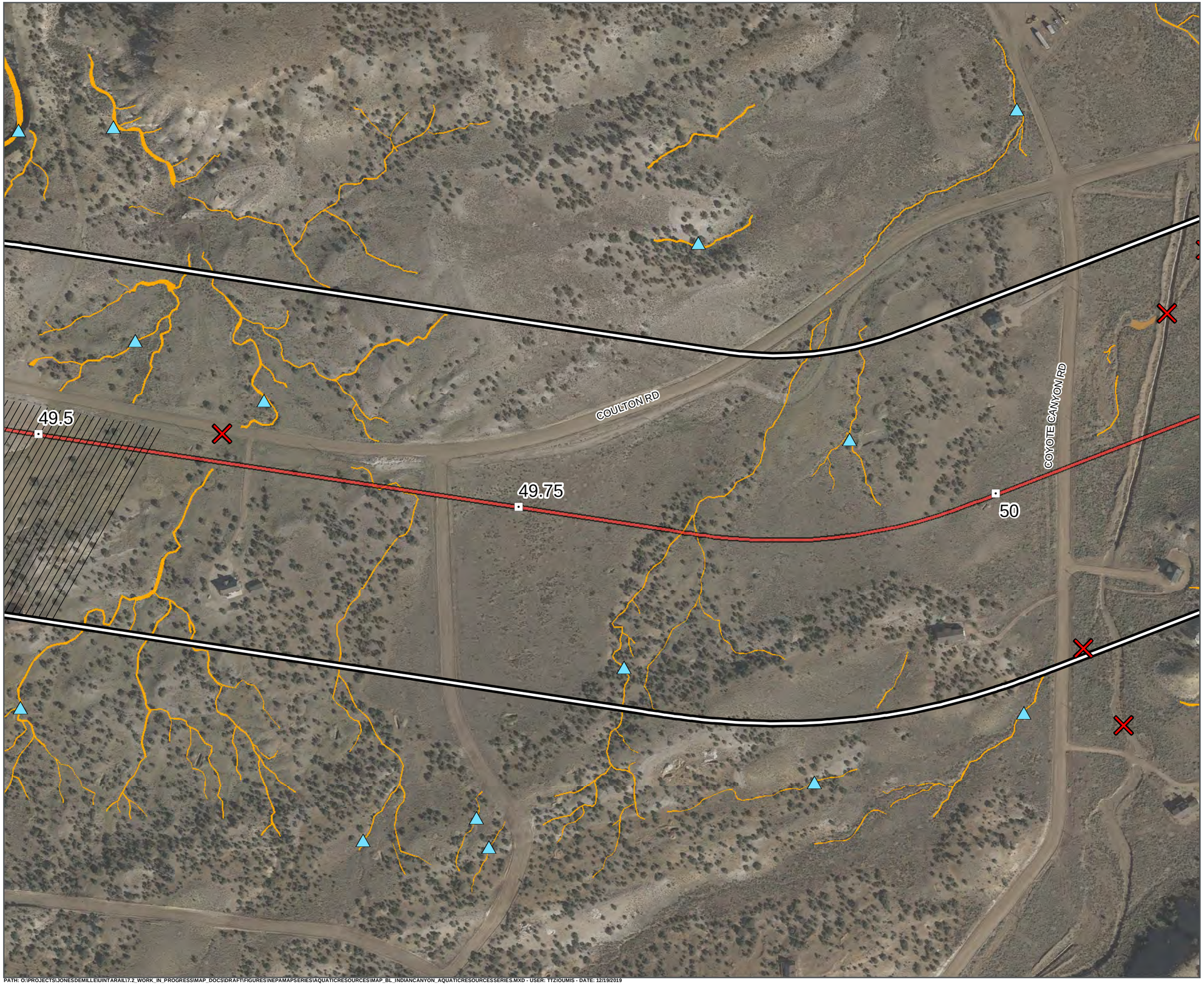
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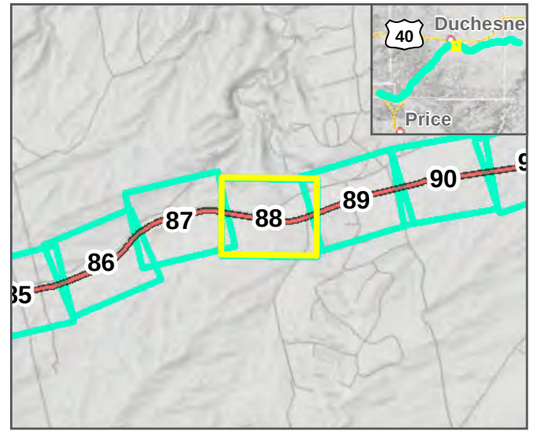
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DECEMBER 2019

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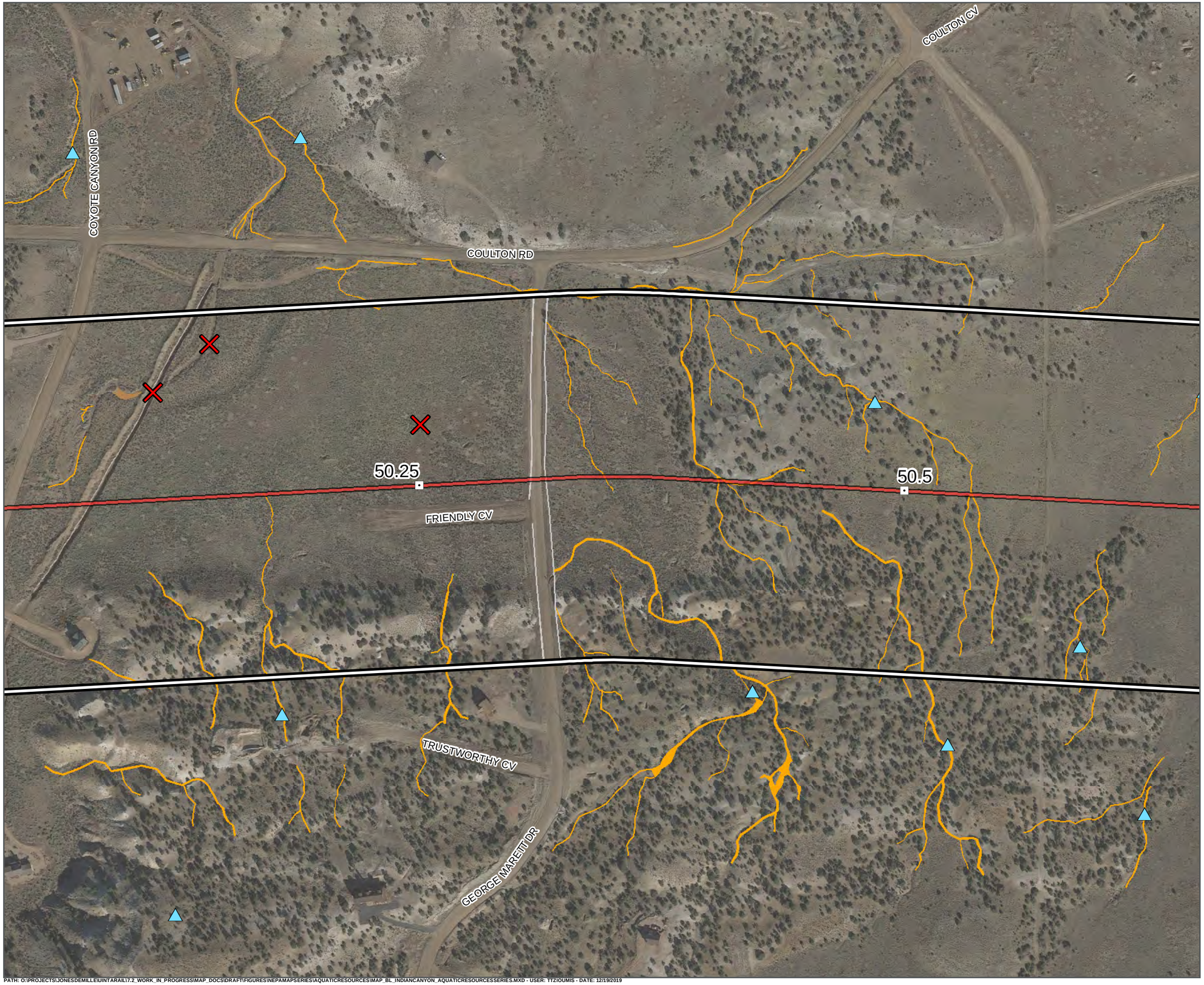
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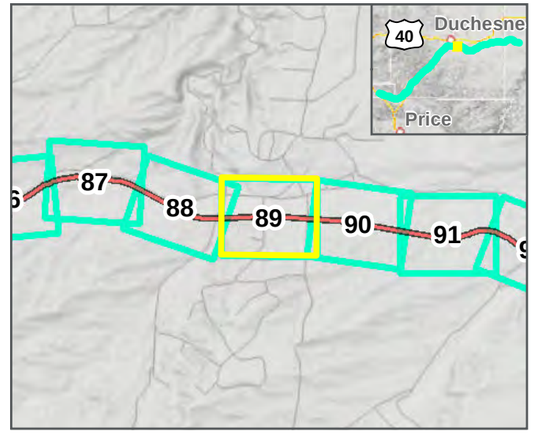
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SEVEN COUNTY INFRASTRUCTURE COALITION

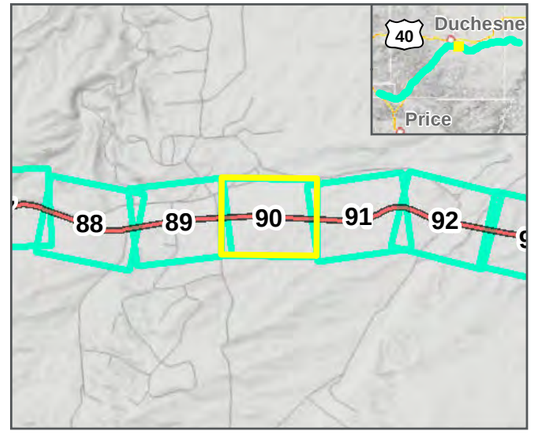
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COUNTY RD 29

50.75

51



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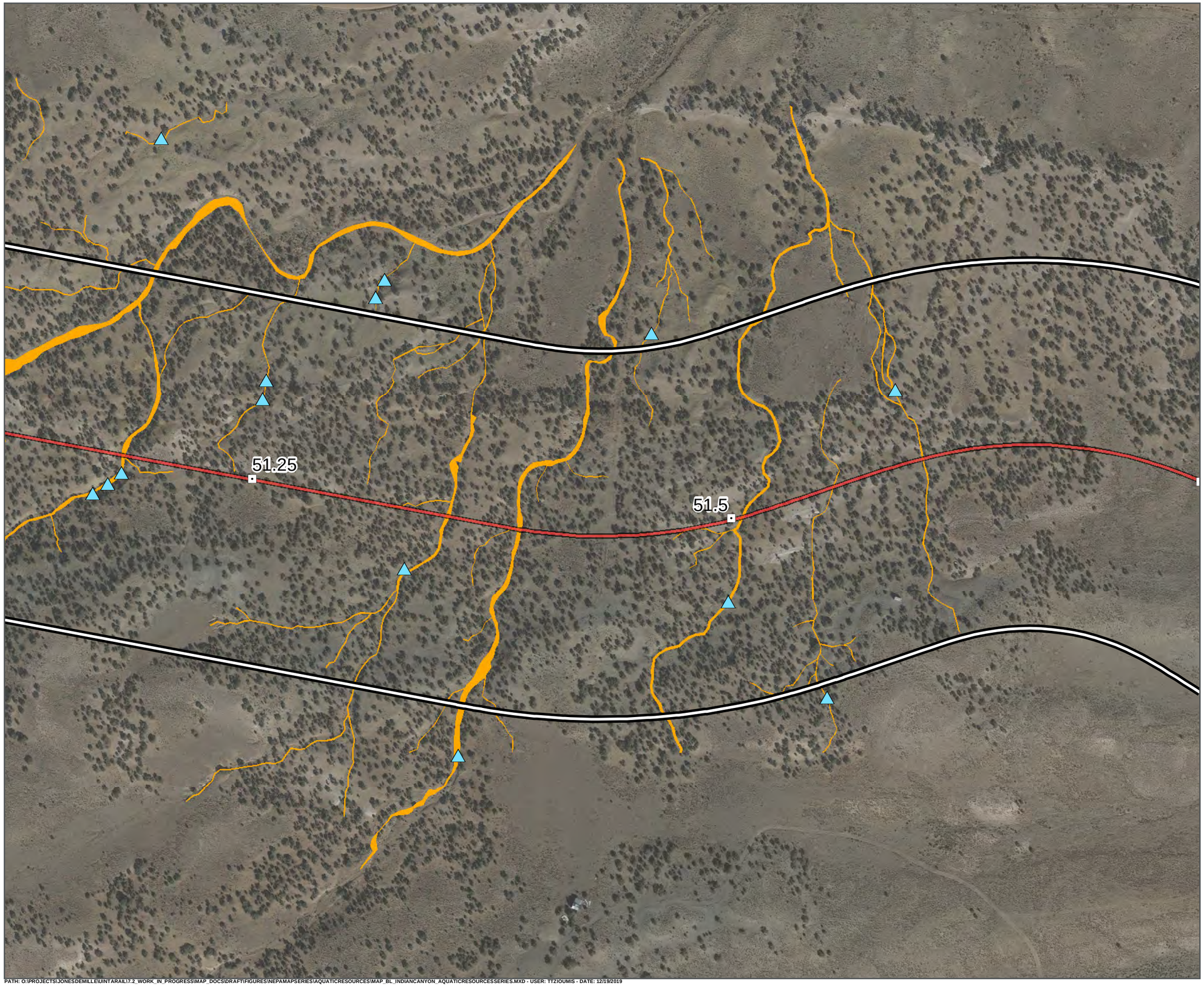
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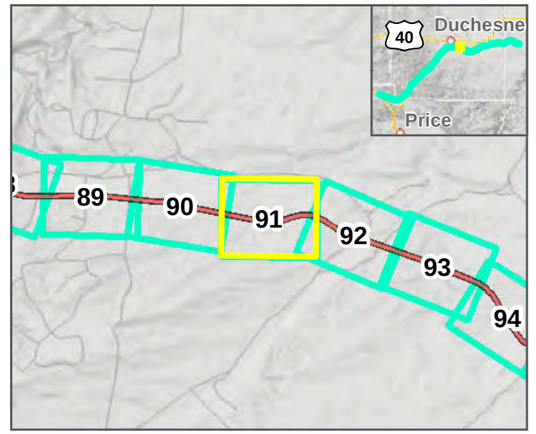
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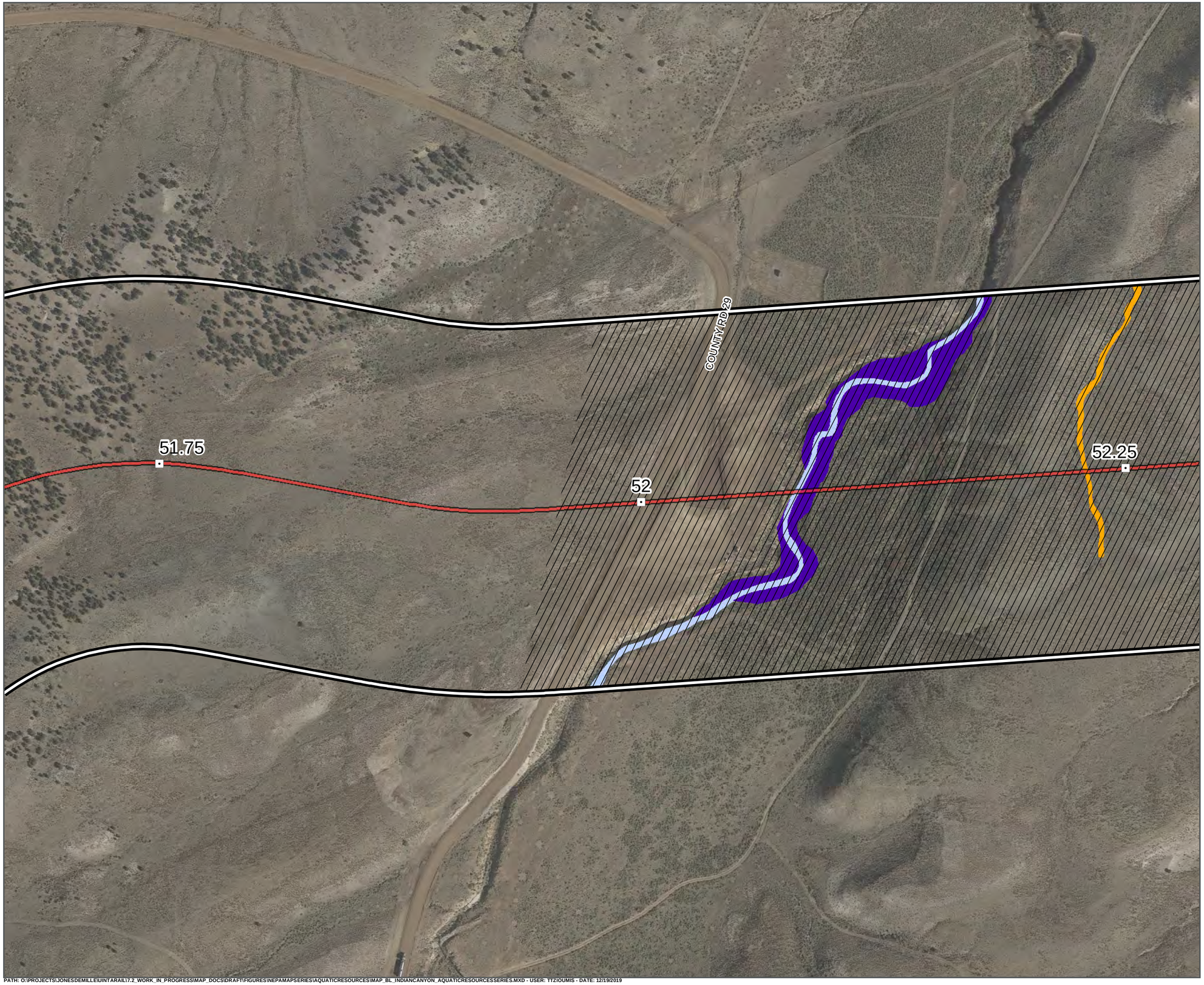
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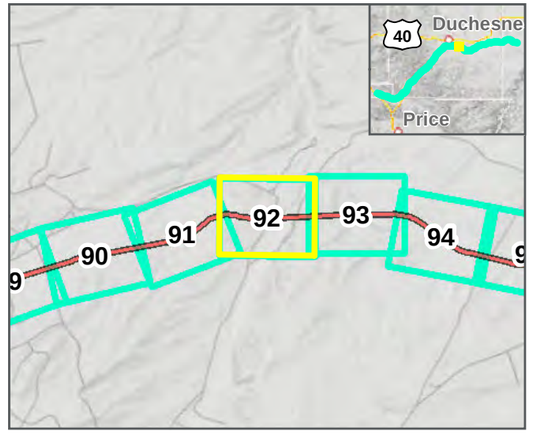
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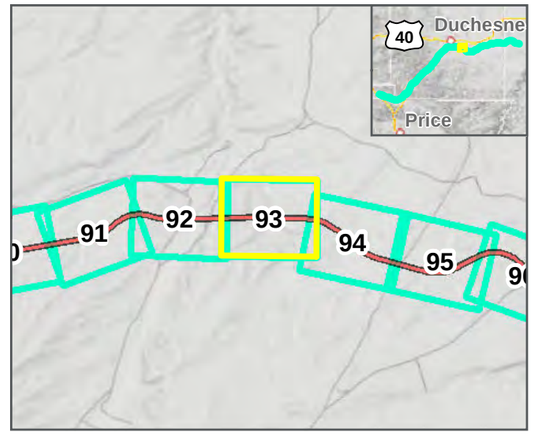
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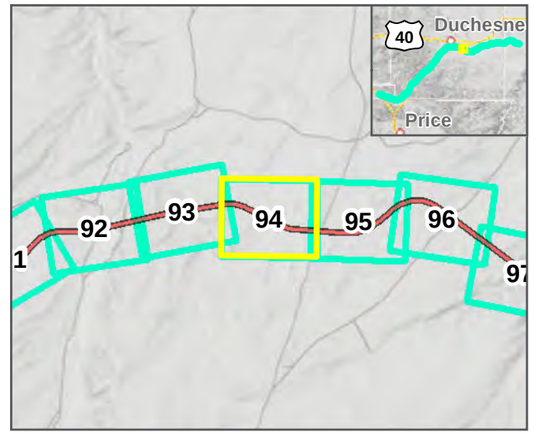
DATA SOURCES:
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COODINATE SYSTEM:
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SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

N

0 125 250 Feet

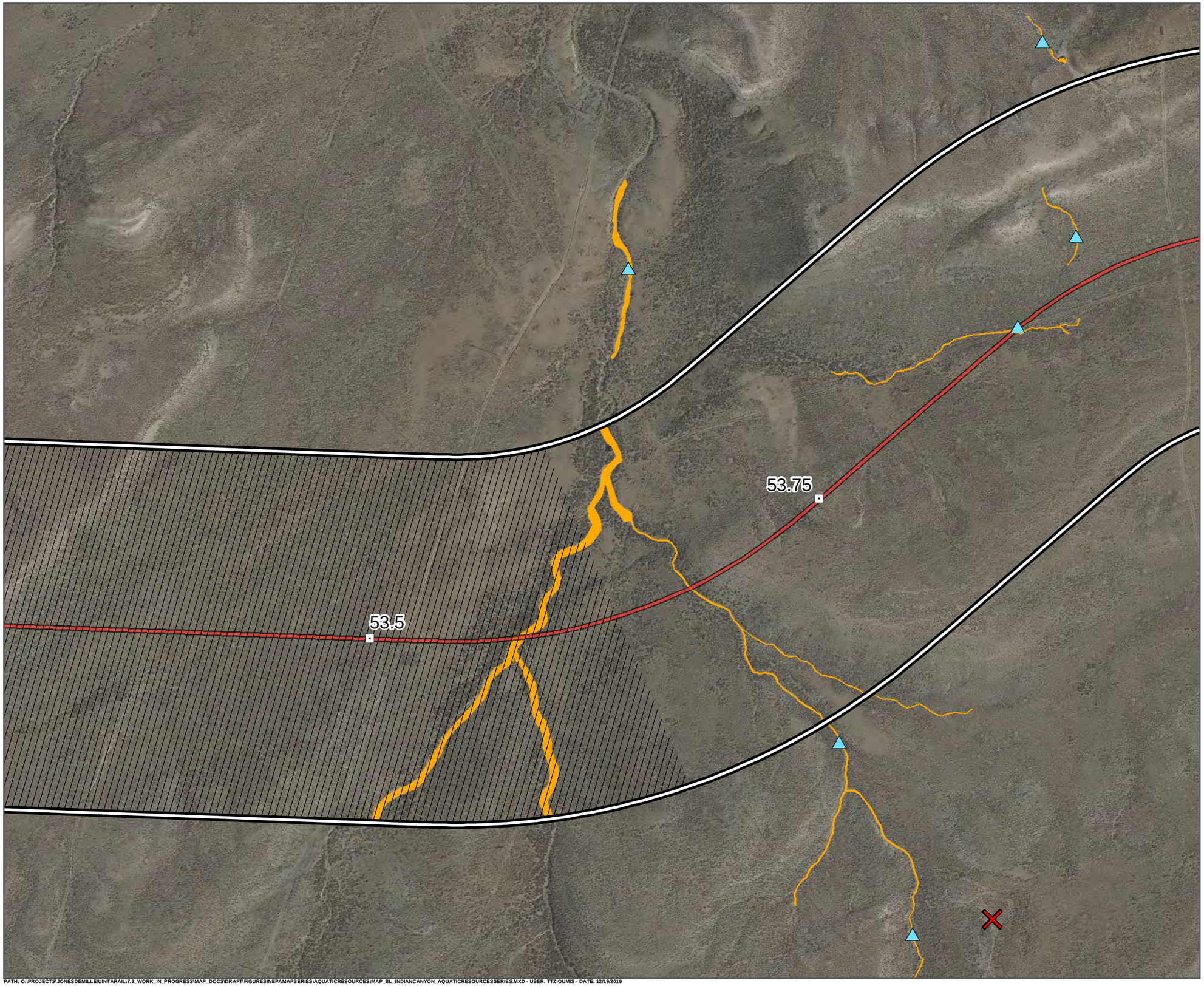
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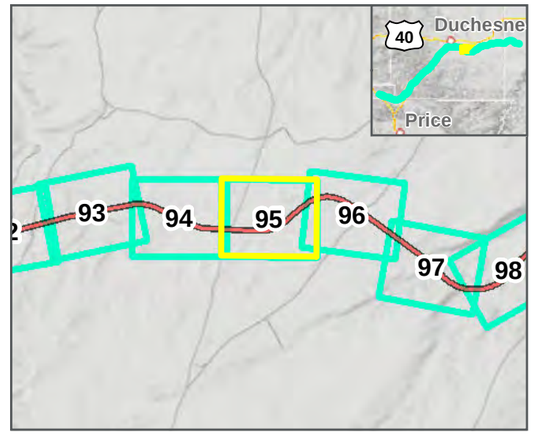
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INDIAN CANYON ALTERNATIVE: 11/22/2019

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DECEMBER 2019

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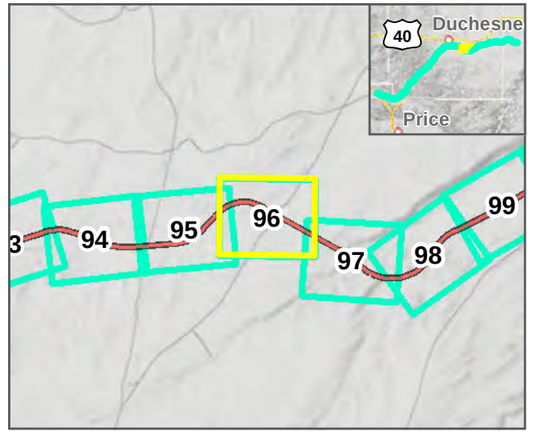
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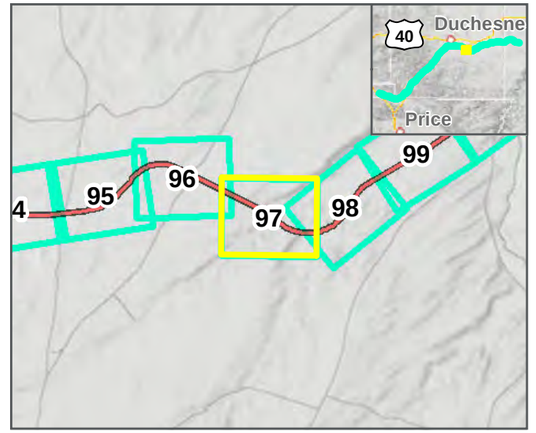
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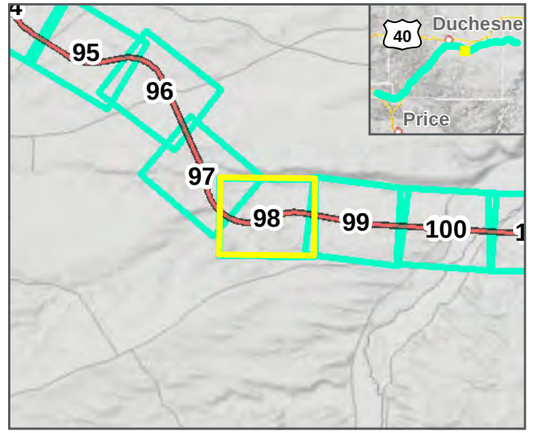
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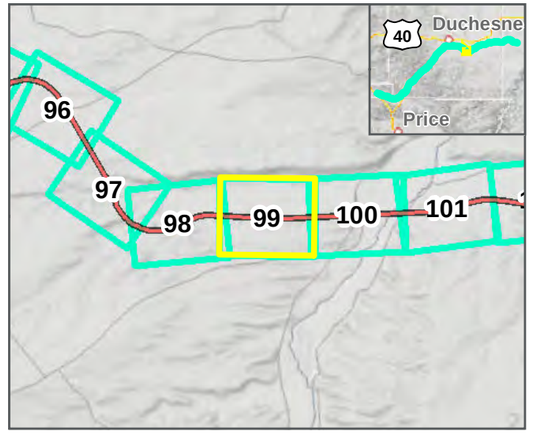
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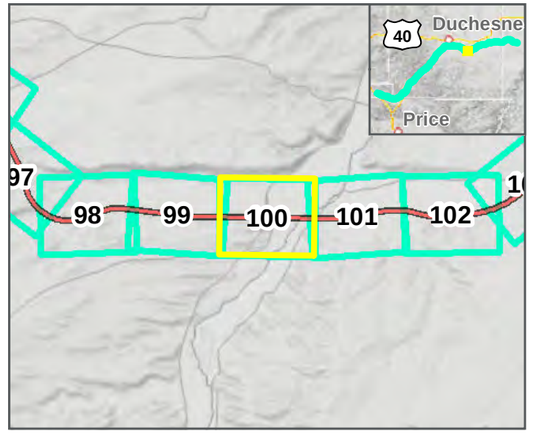
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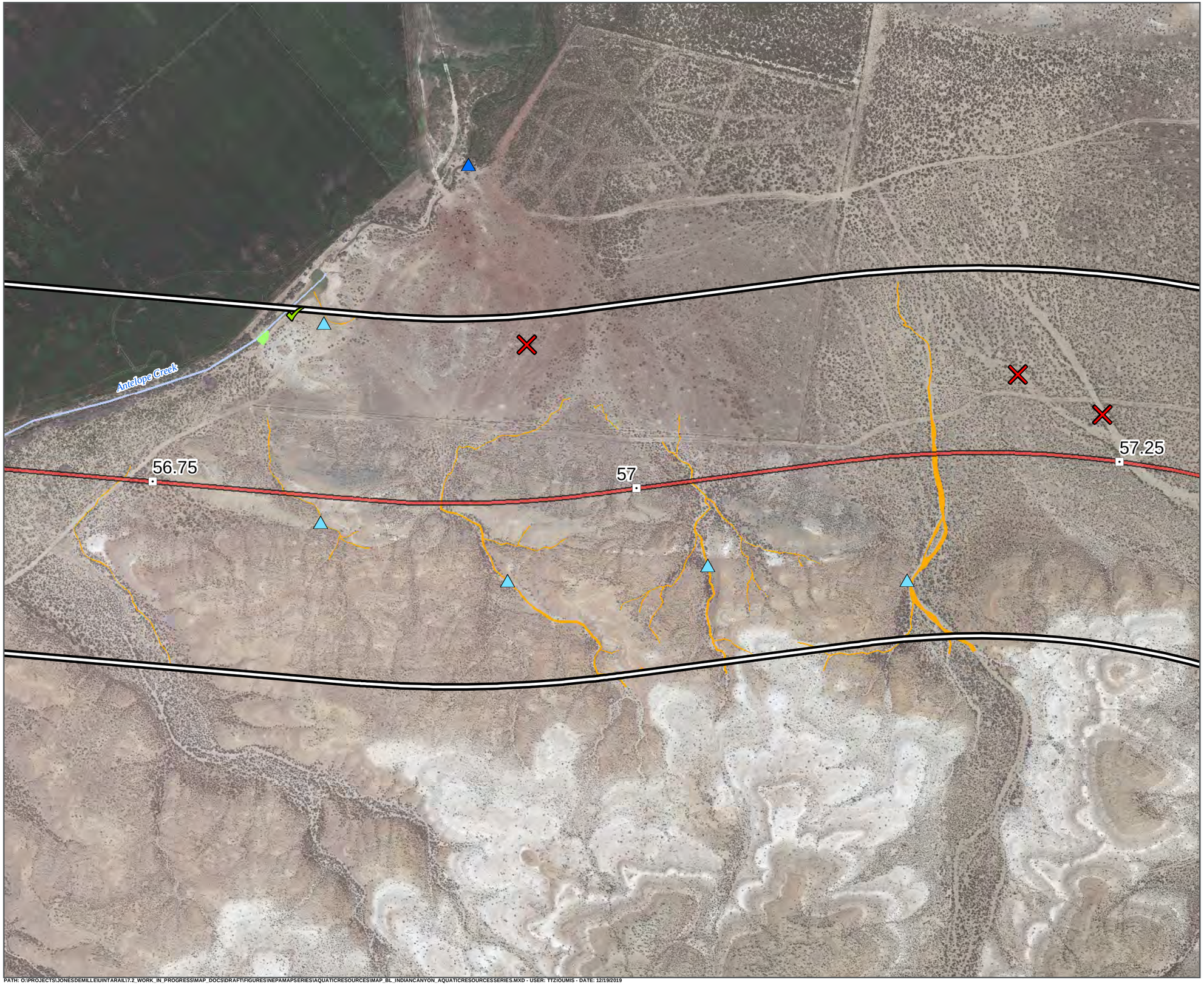
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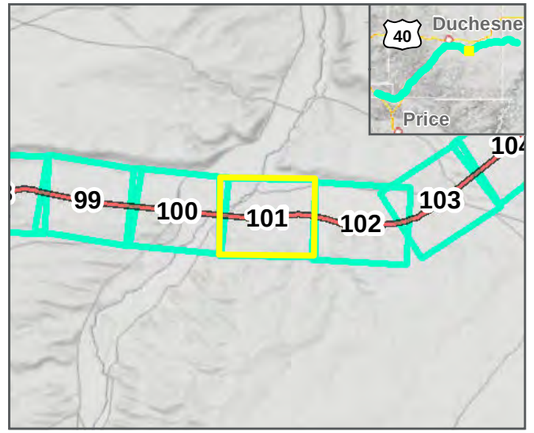
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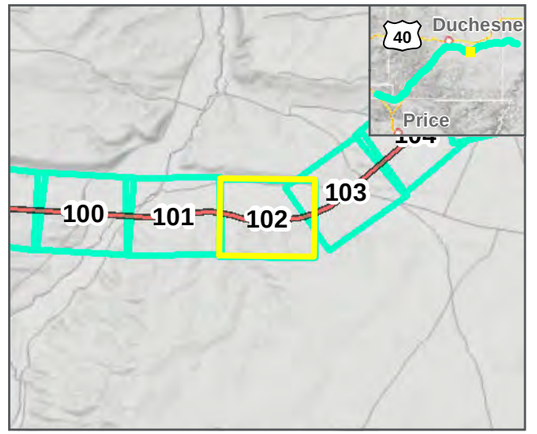
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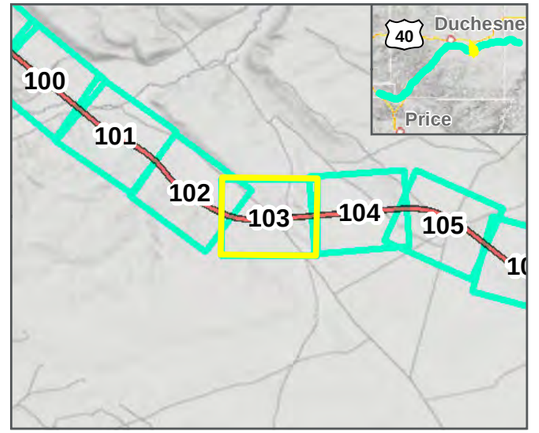
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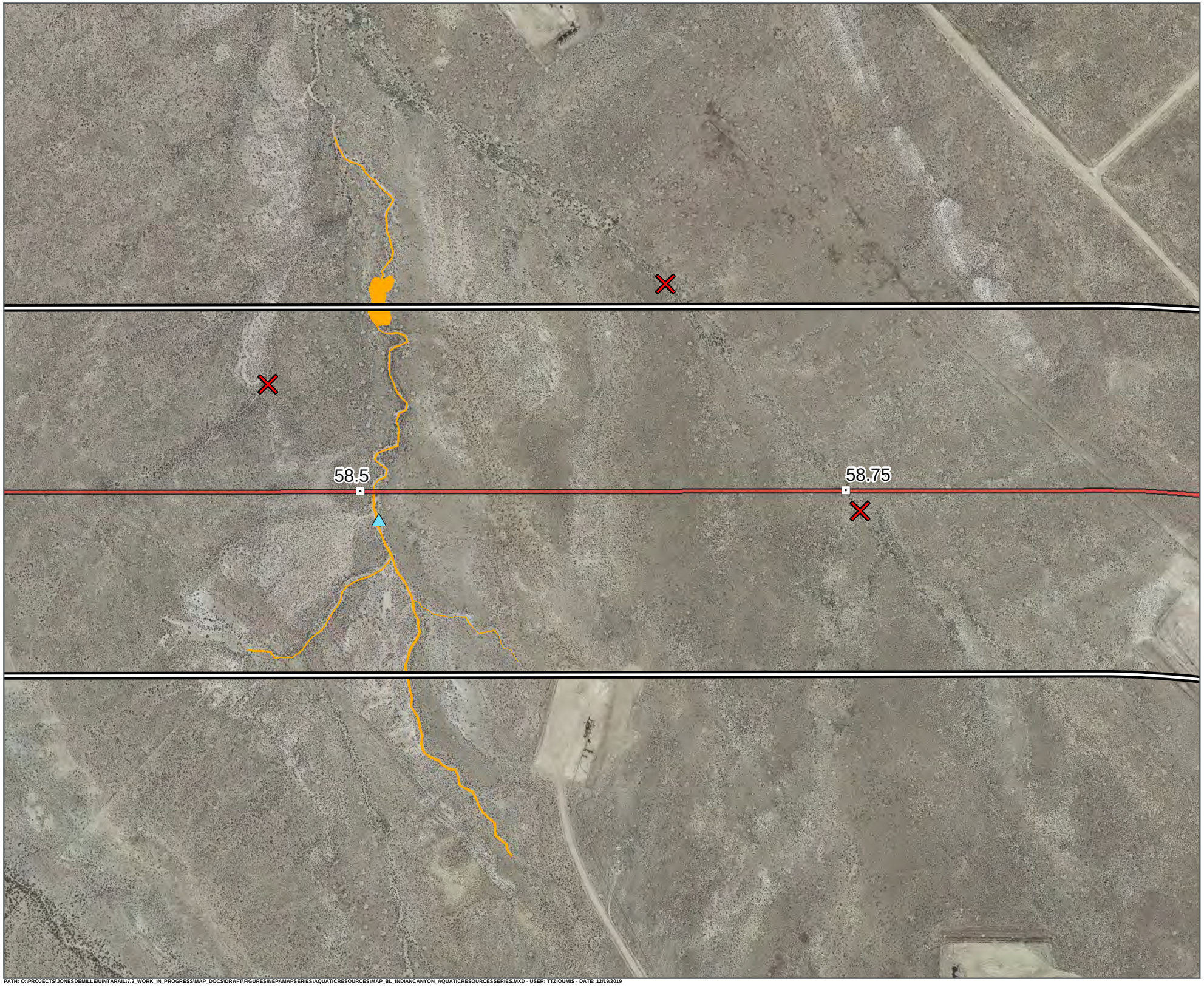
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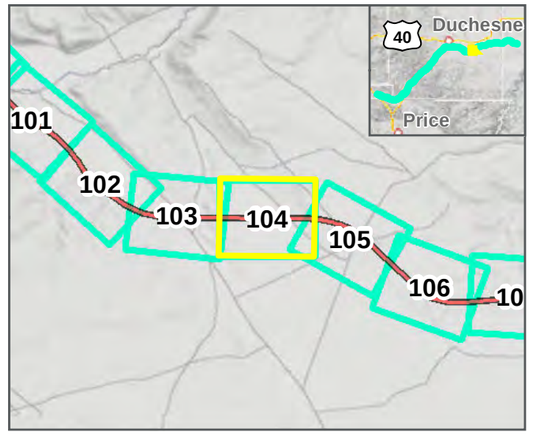
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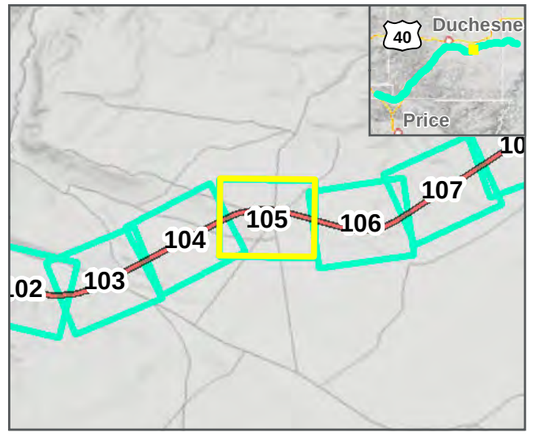
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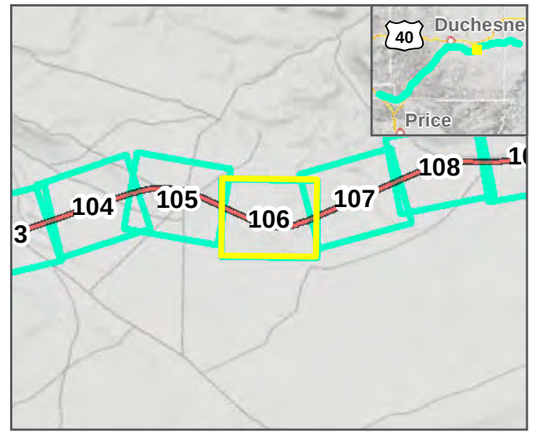
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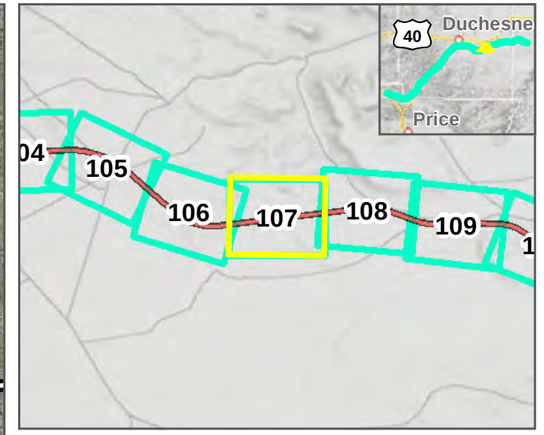
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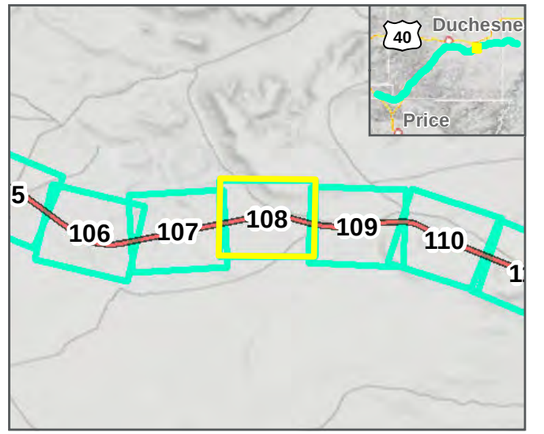
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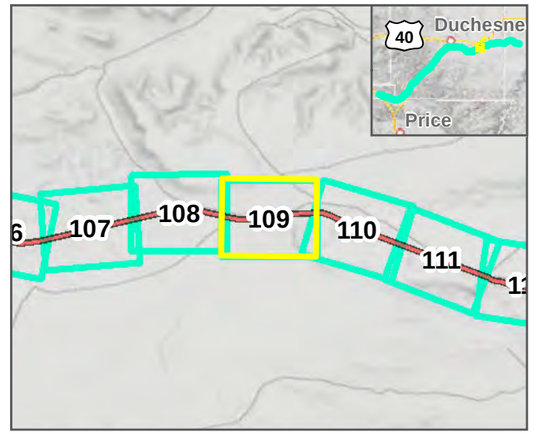
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- Mileposts
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- Out Point 2019
- In Point 2014
- Out Point 2014
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- Verified Point
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- Emergent Marsh
- Shrub-Scrub
- Playa
- Open Water
- Perennial Stream
- Ephemeral/Intermittent Stream
- Ditch/Canal
- Study Area
- Map Extent (current view in yellow)

INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

0 125 250 Feet

1 inch = 250 Feet

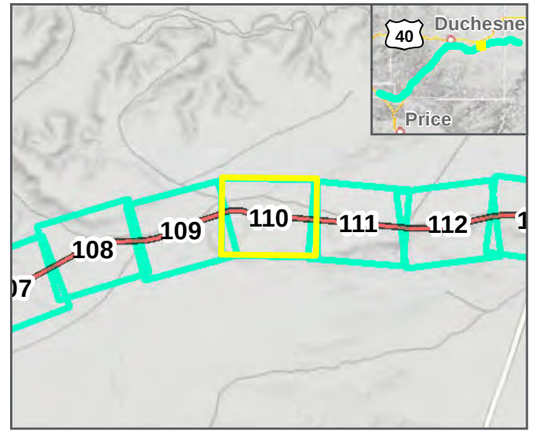
DATA SOURCES:
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DECEMBER 2019

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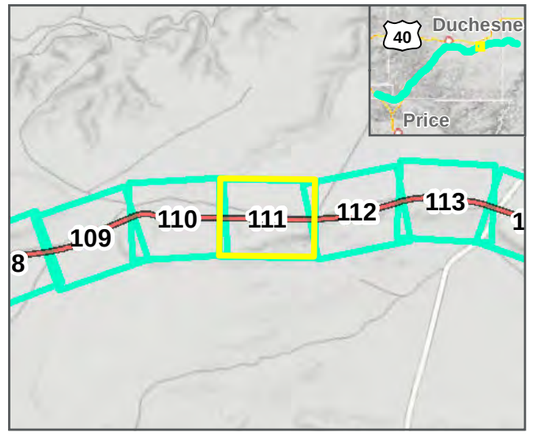
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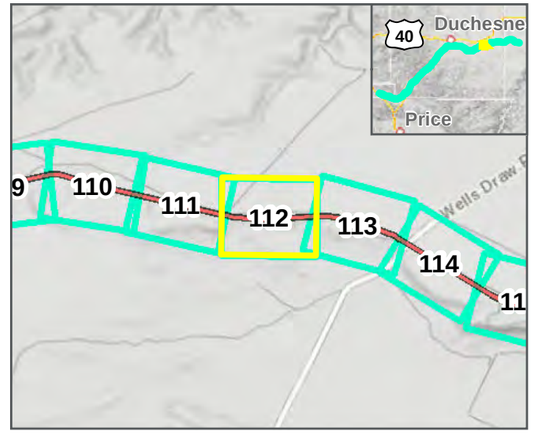
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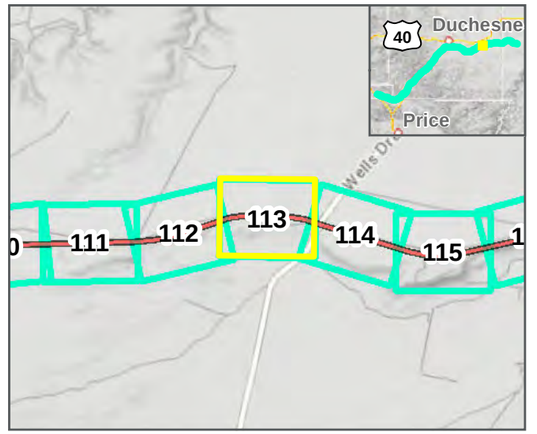
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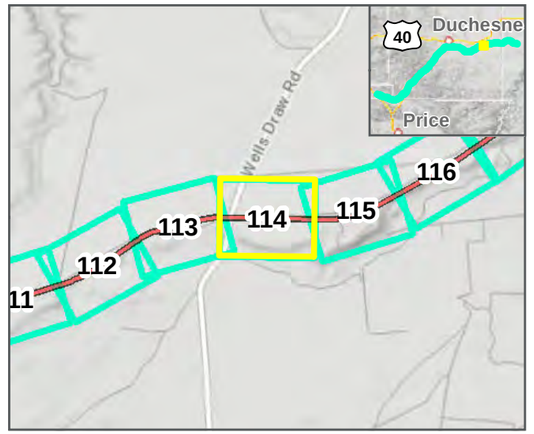
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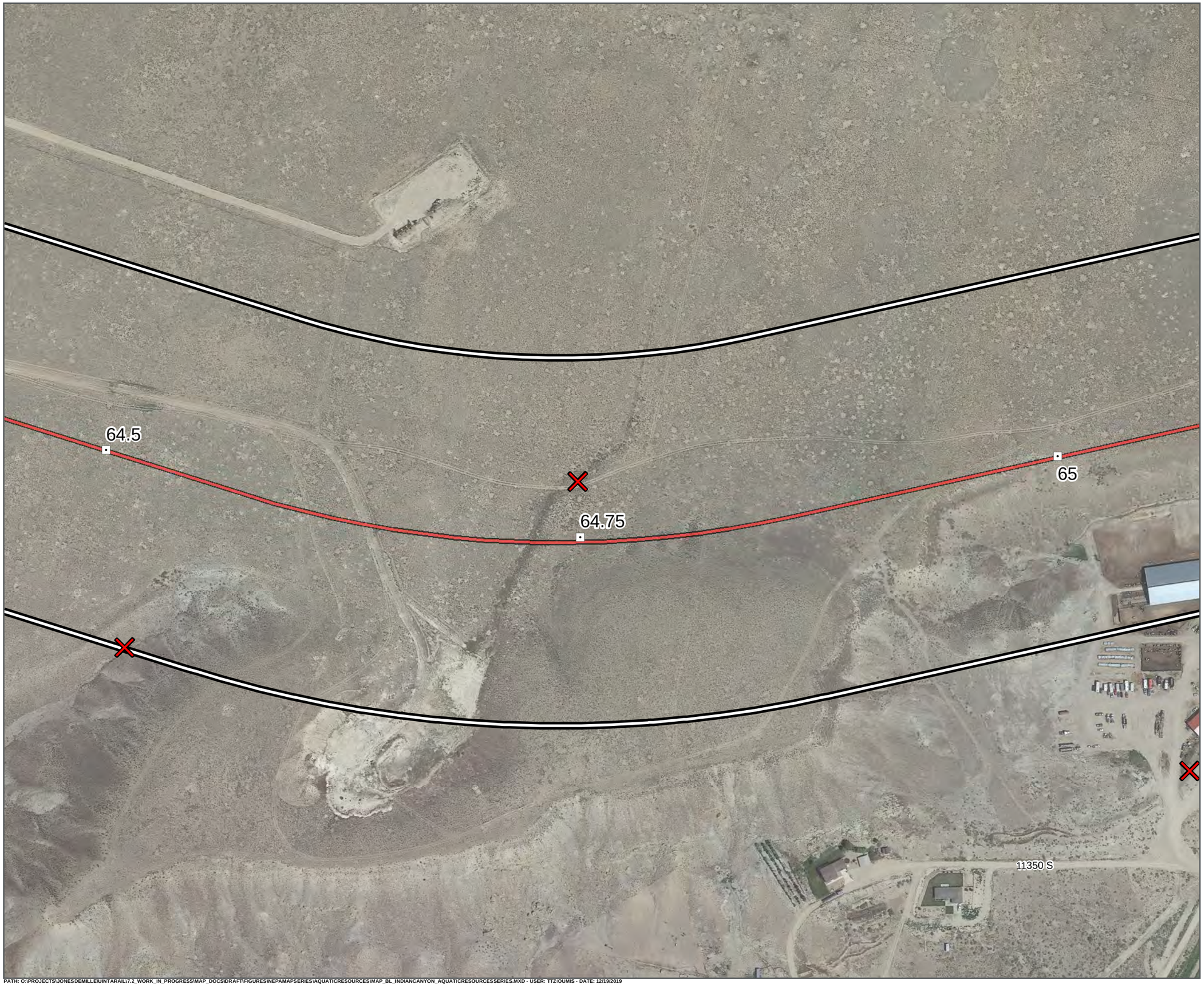
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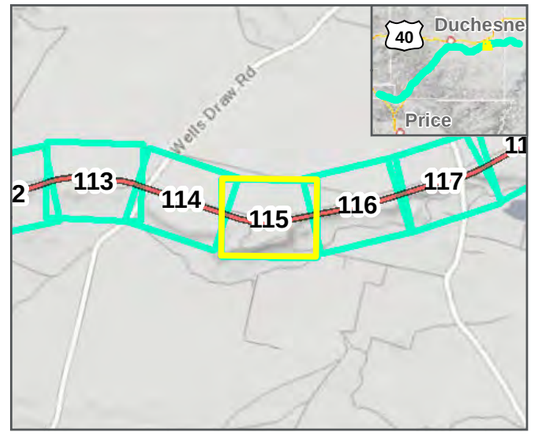
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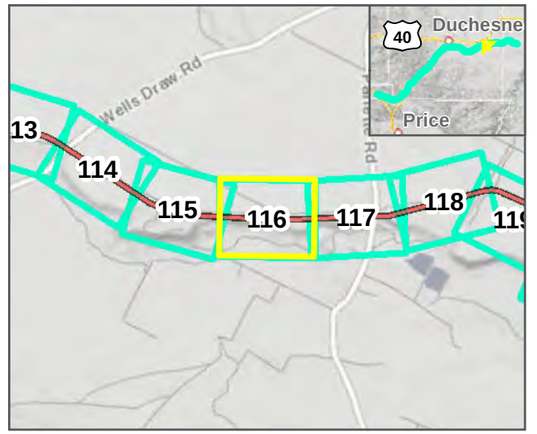
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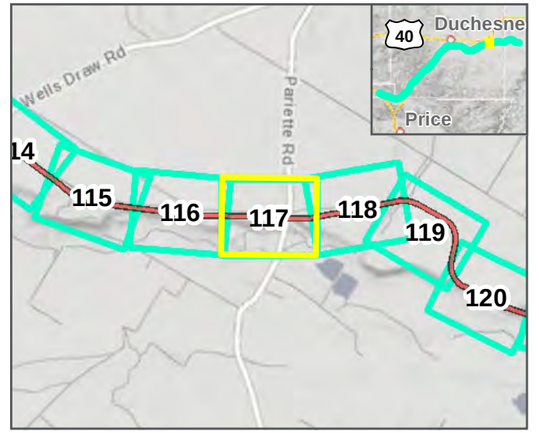
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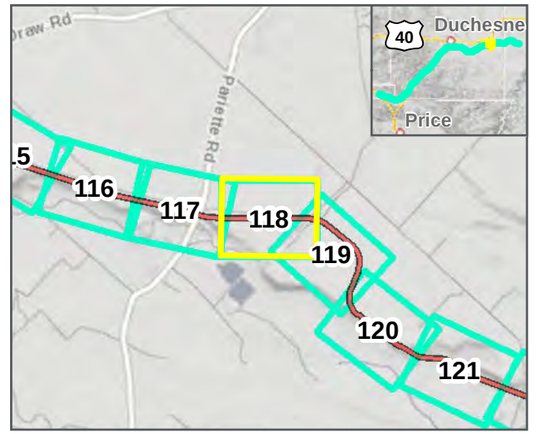
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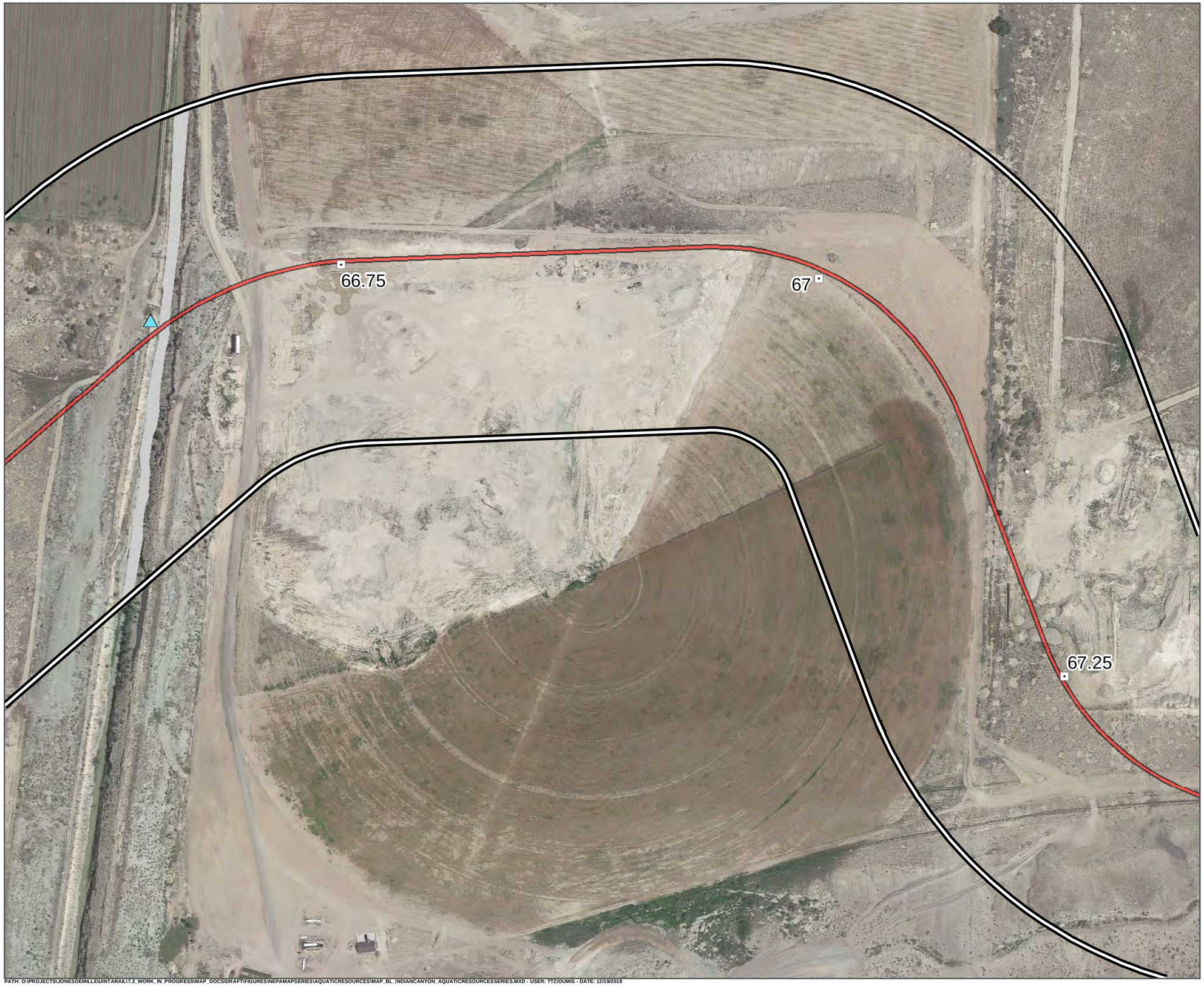
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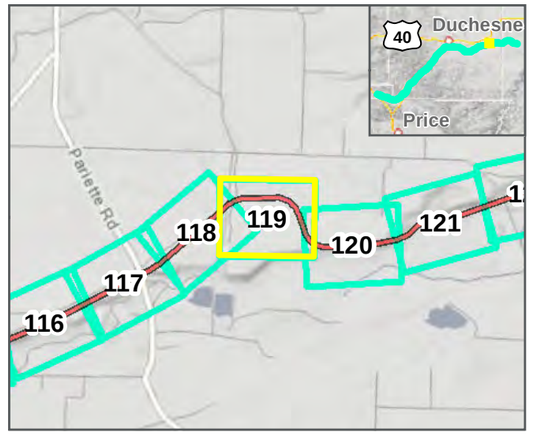
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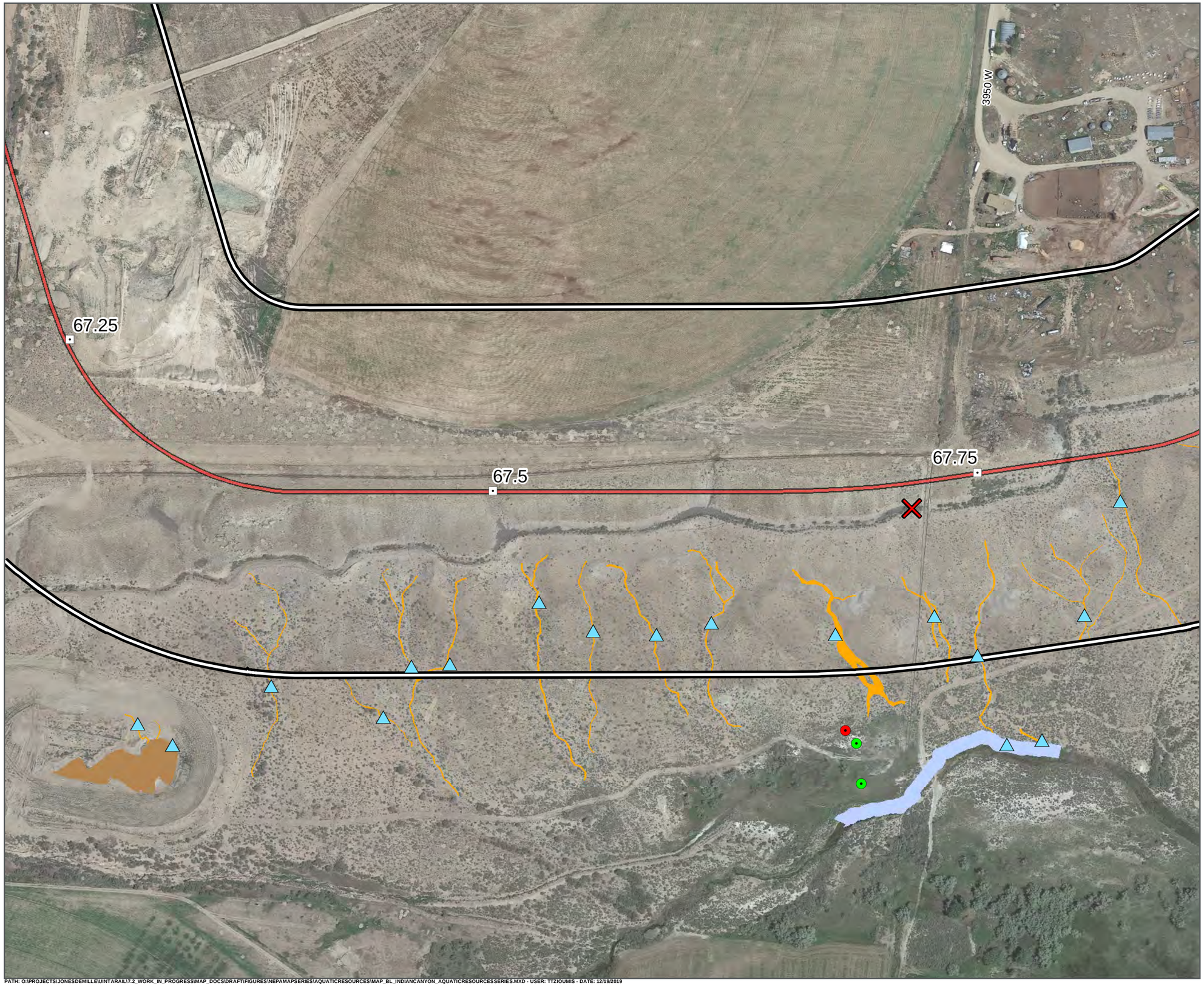
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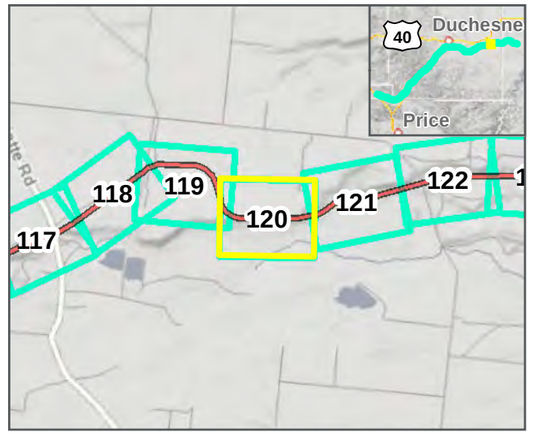
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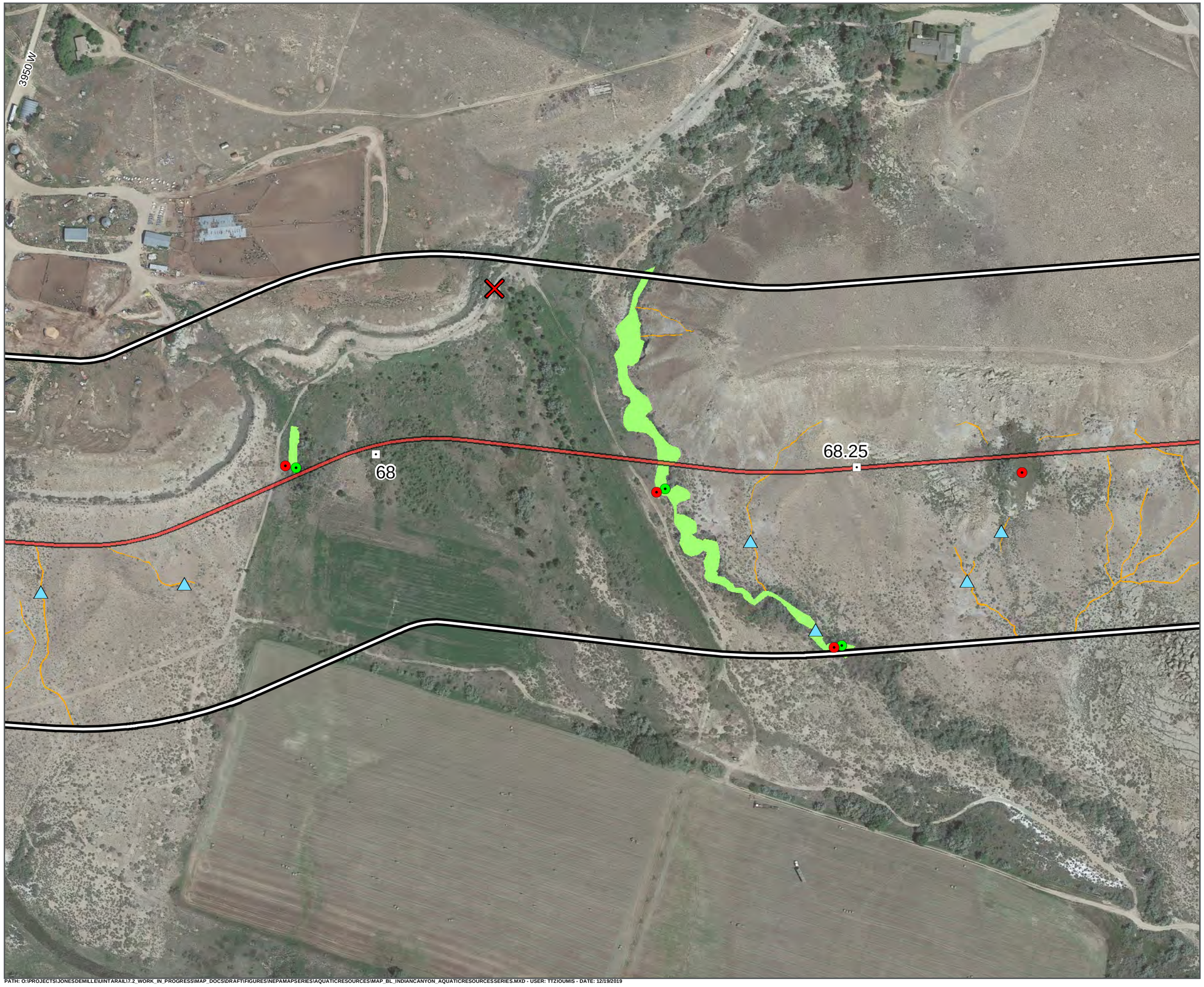
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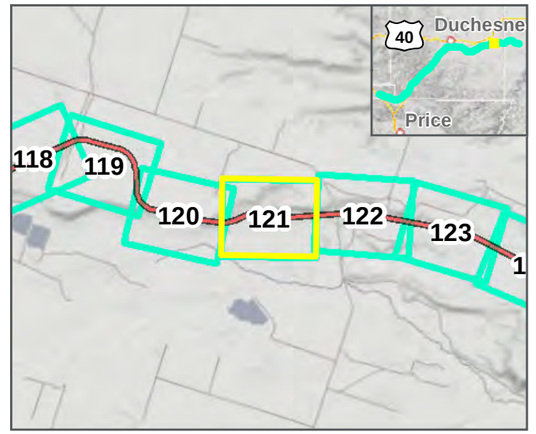
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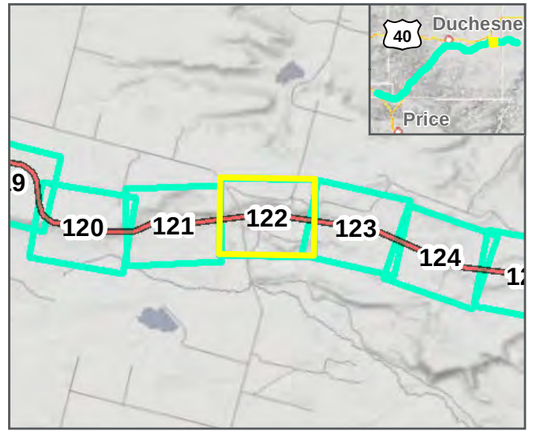
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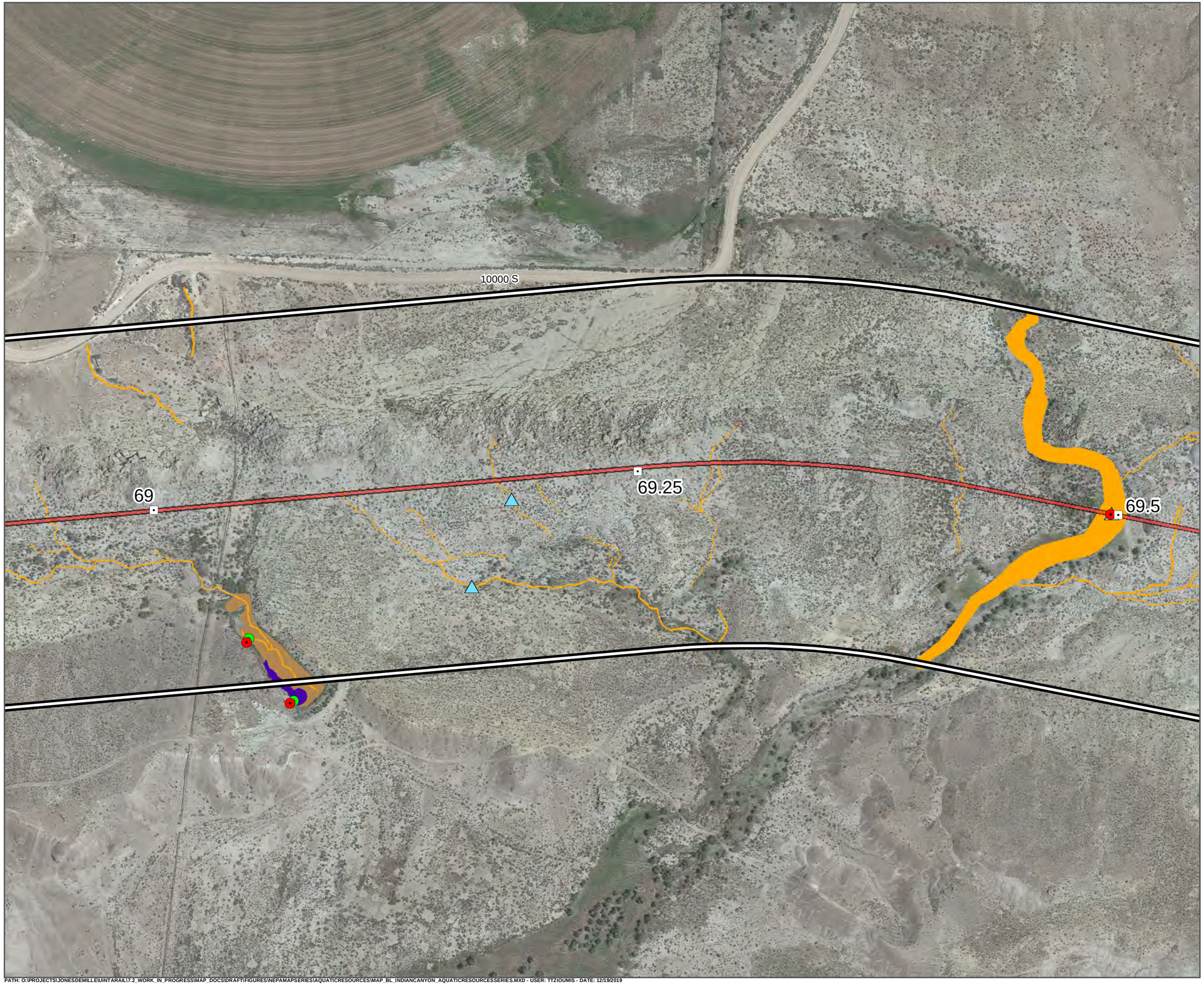
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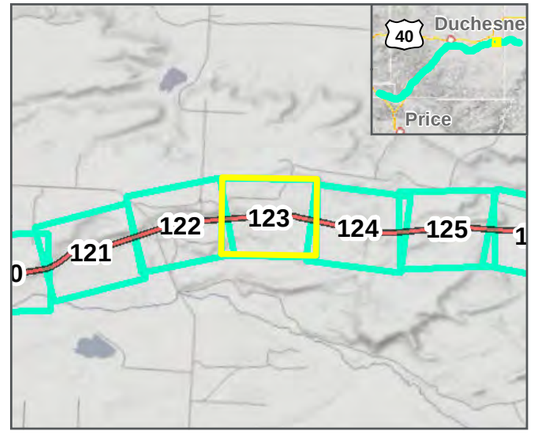
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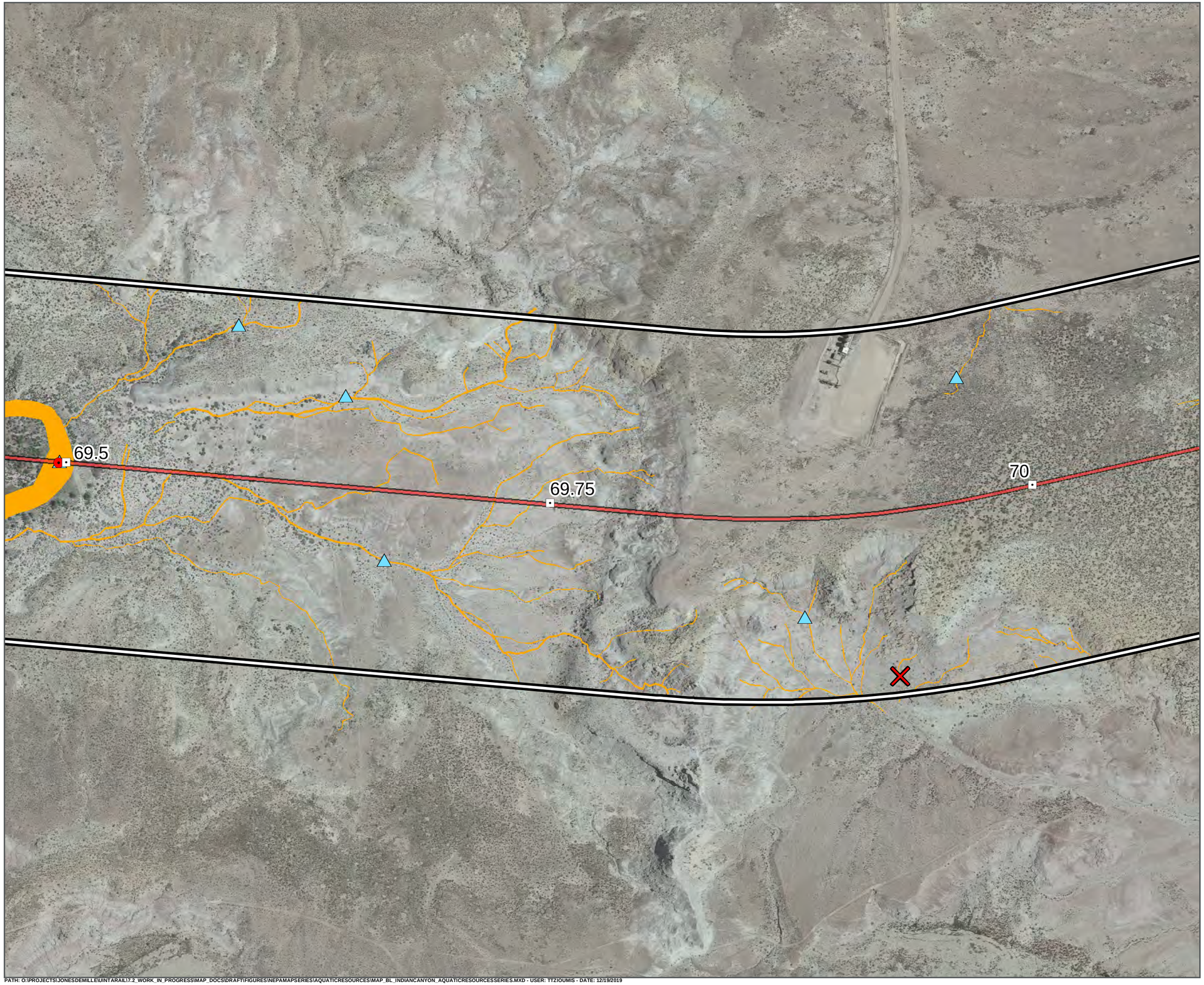
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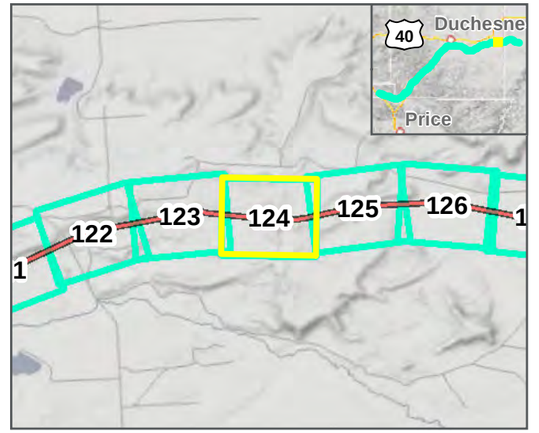
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery
Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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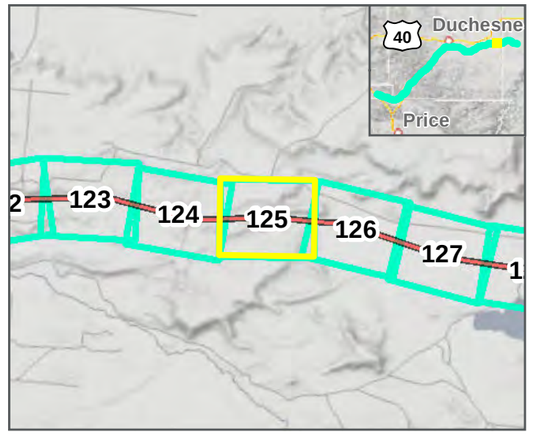
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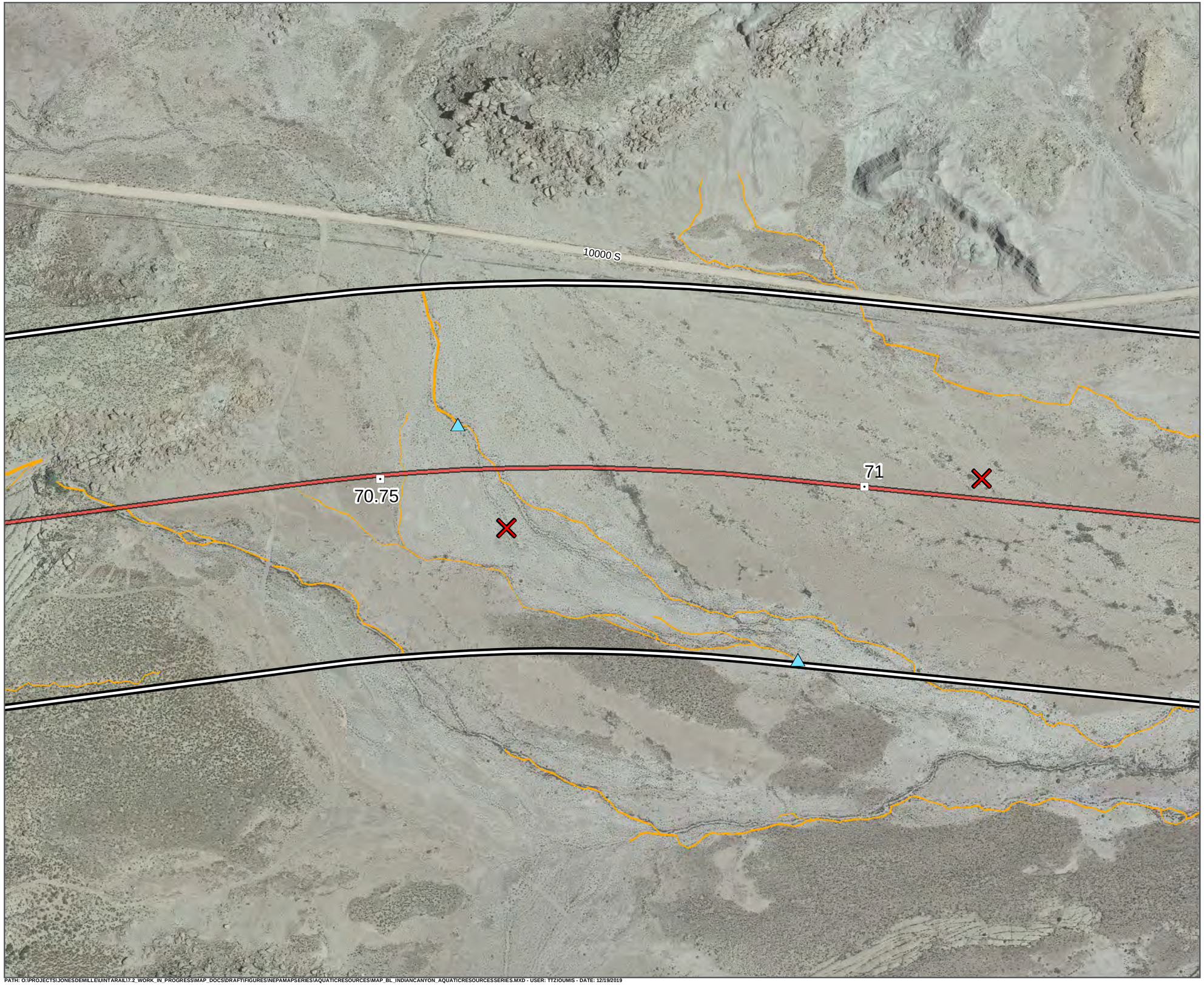
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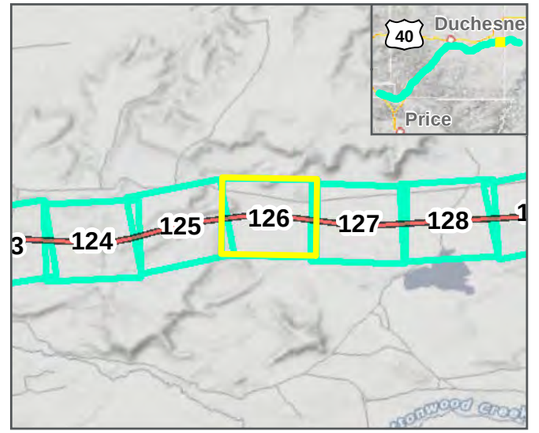
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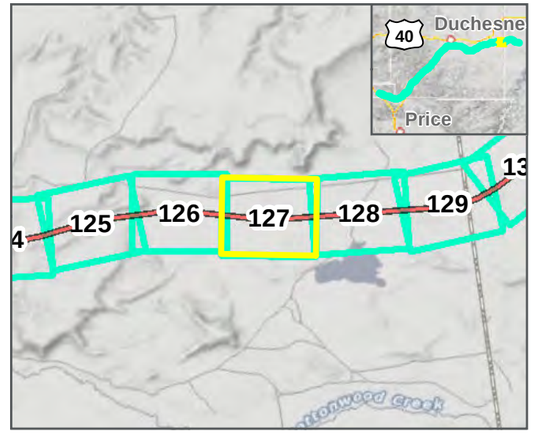
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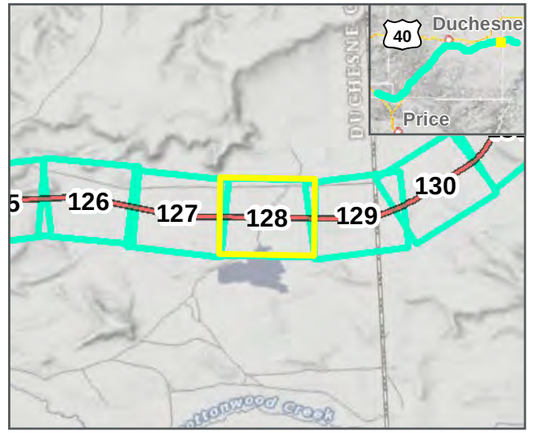
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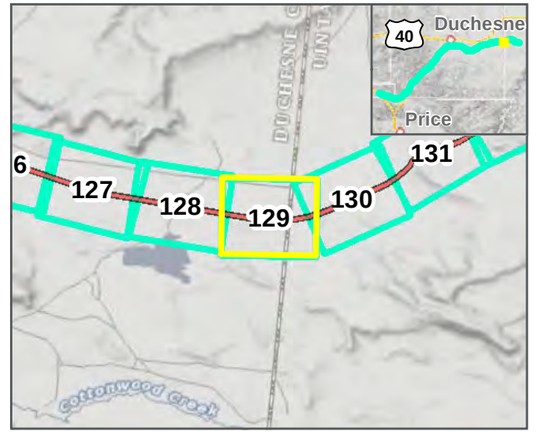
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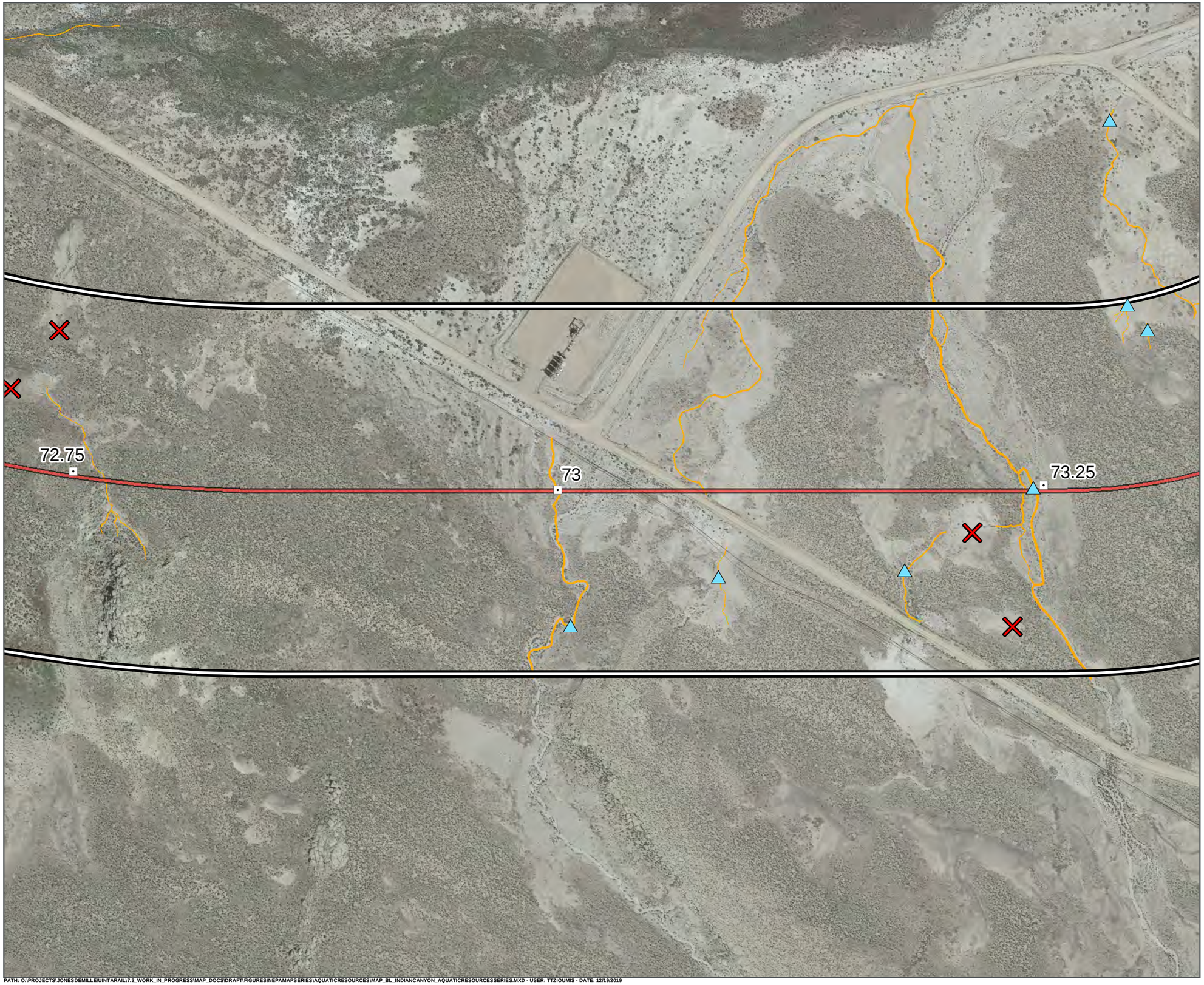
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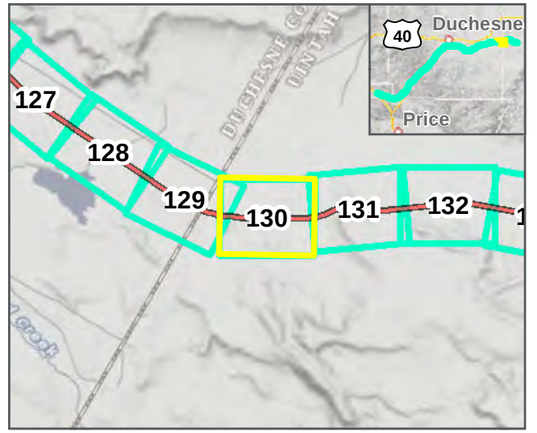
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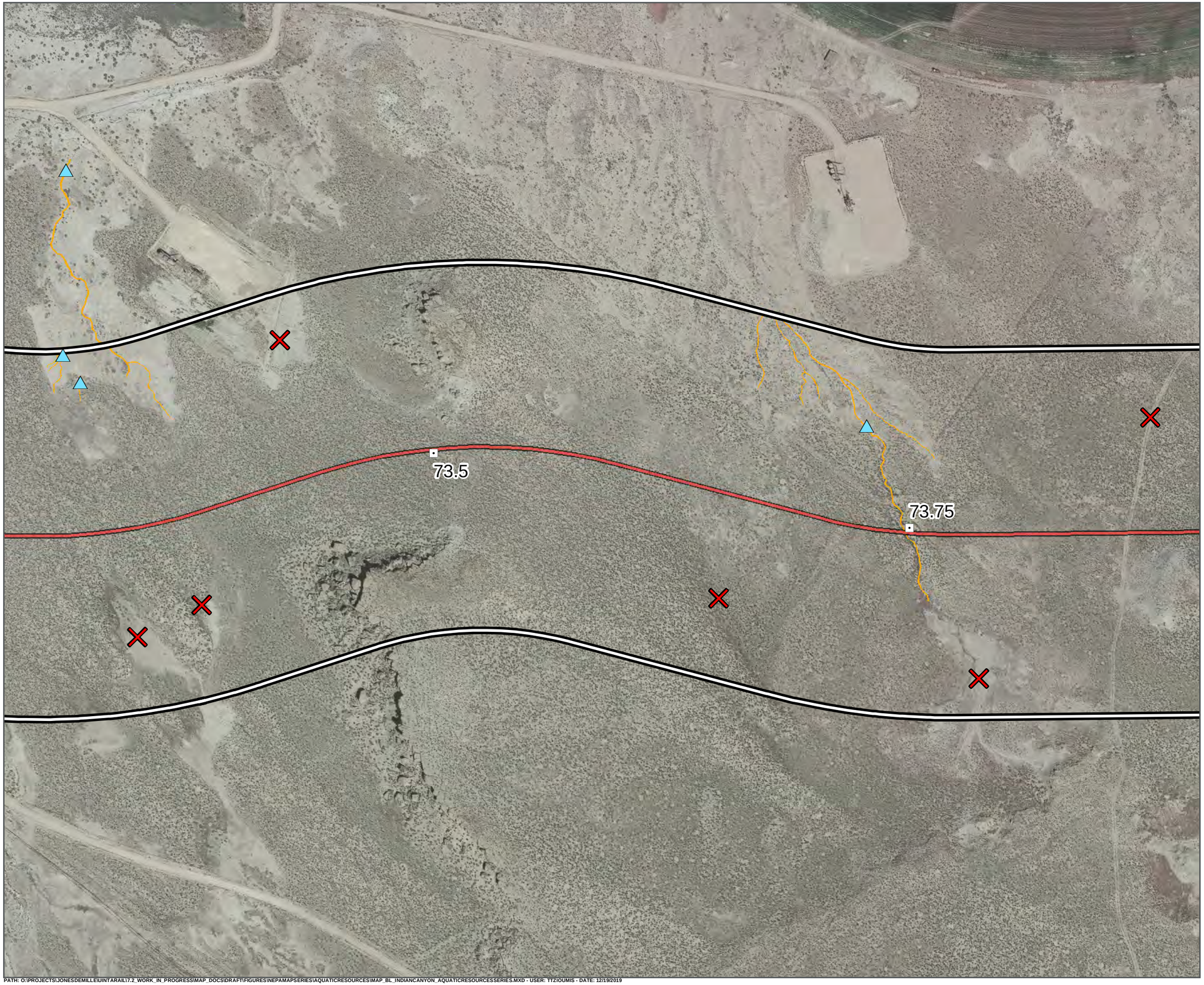
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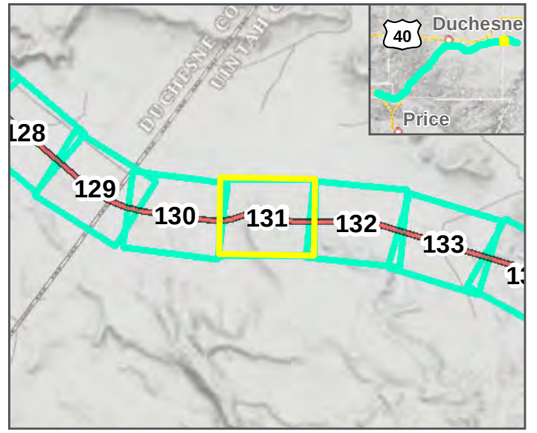
DATA SOURCES:
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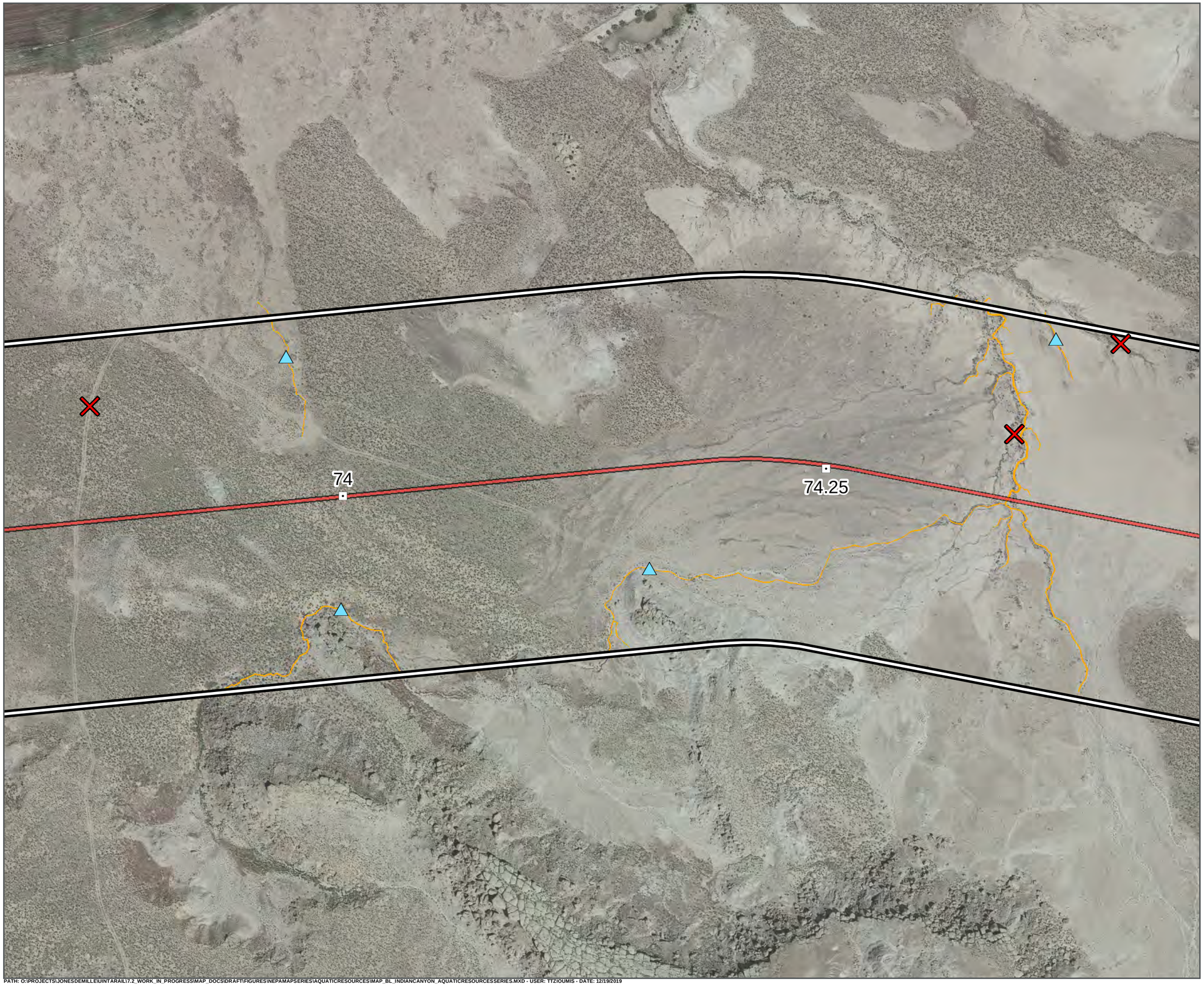
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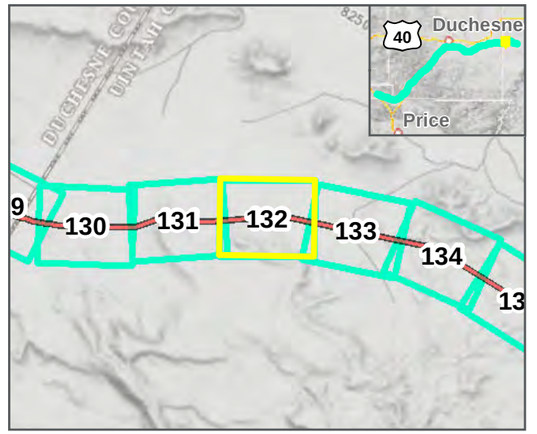
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DECEMBER 2019

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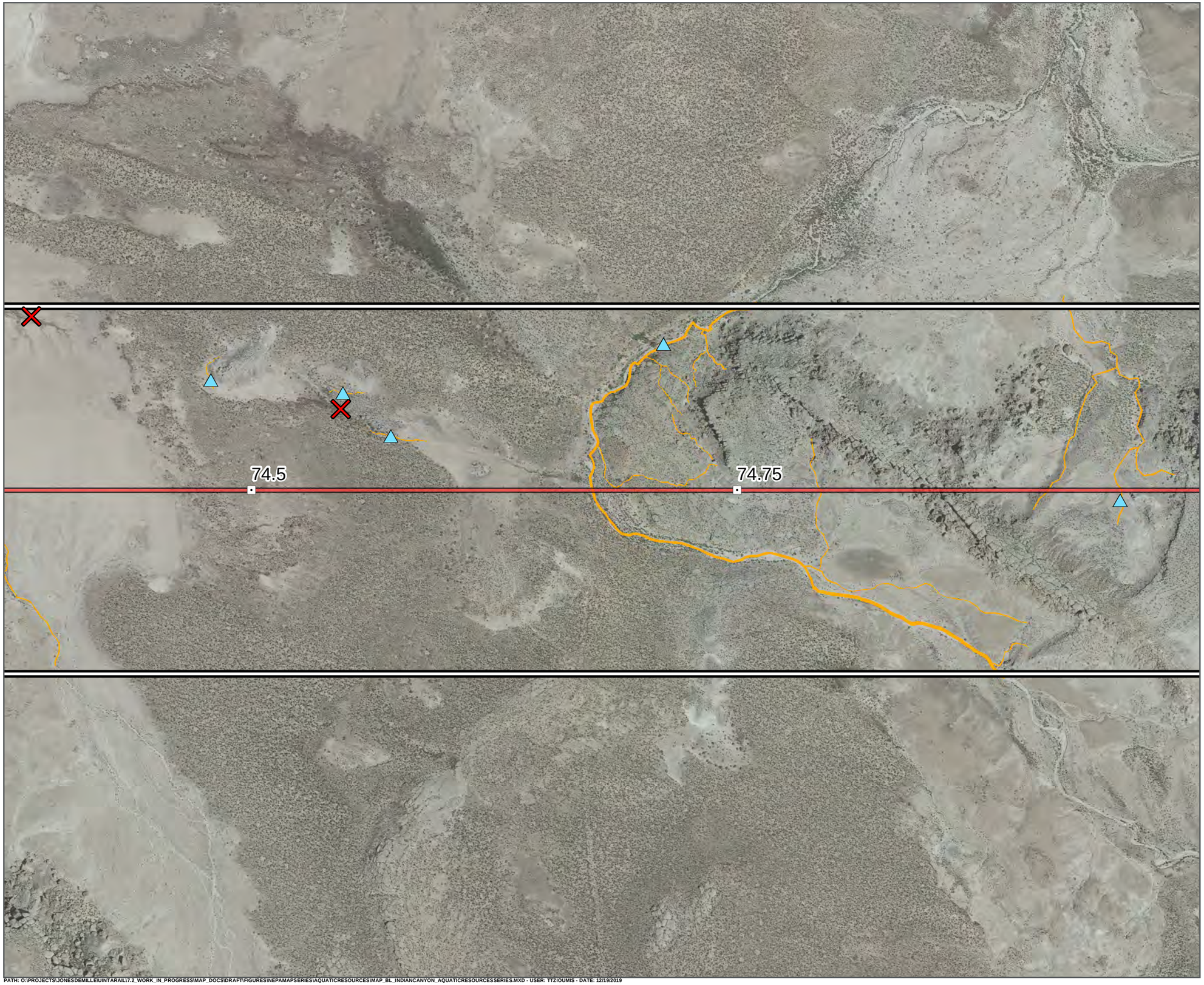
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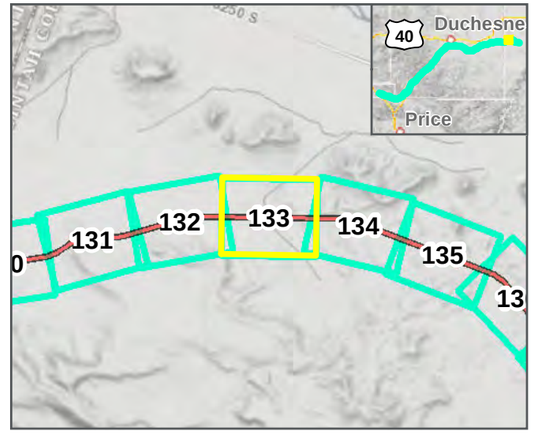
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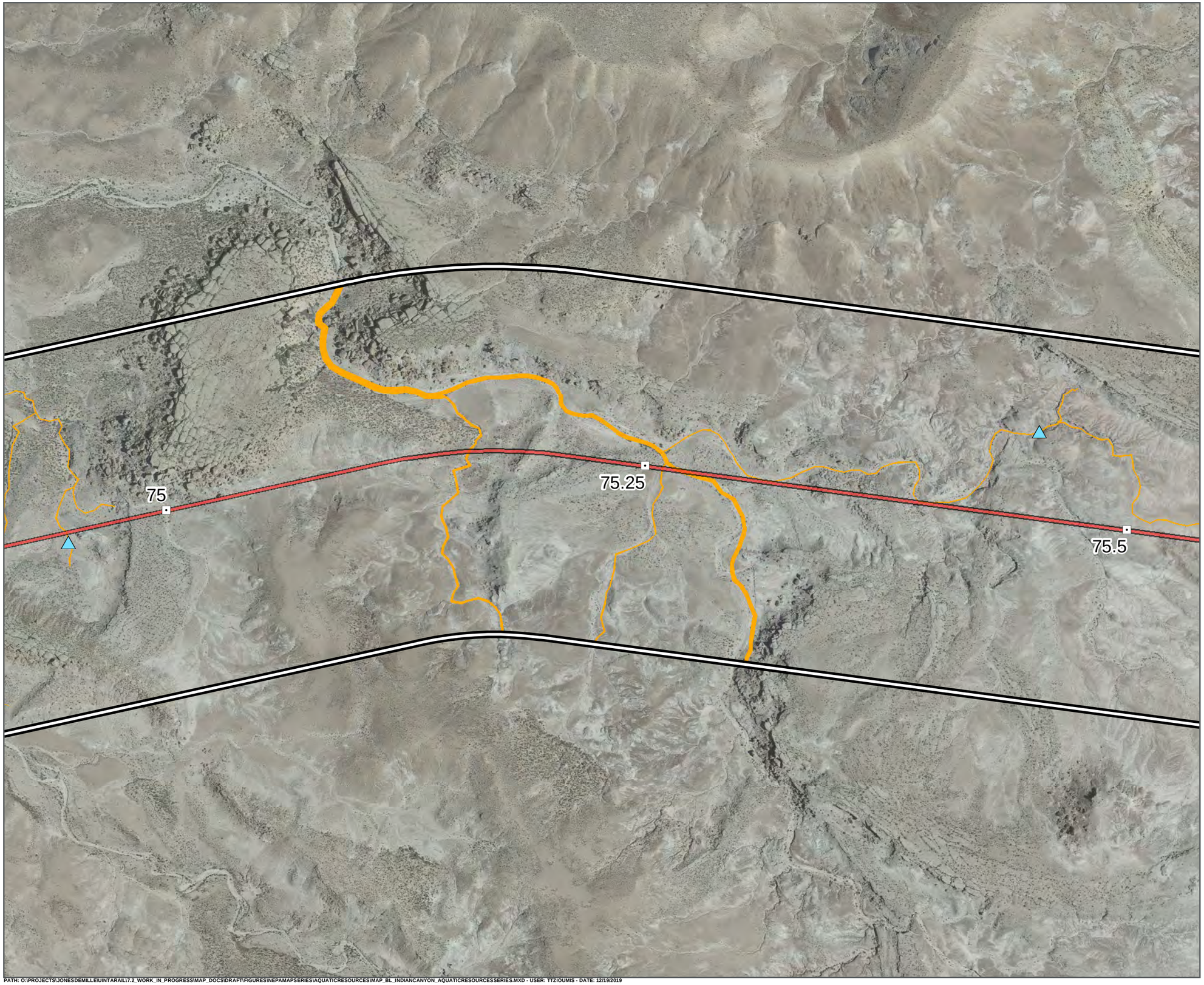
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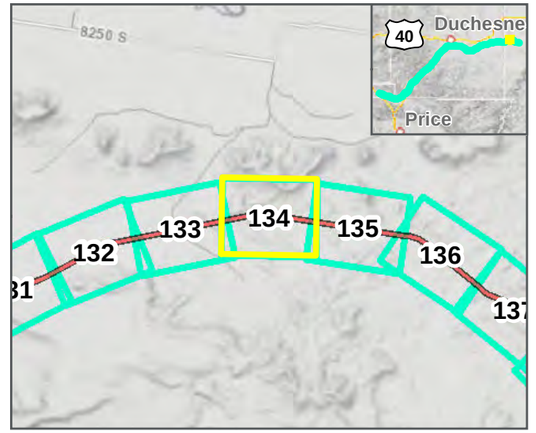
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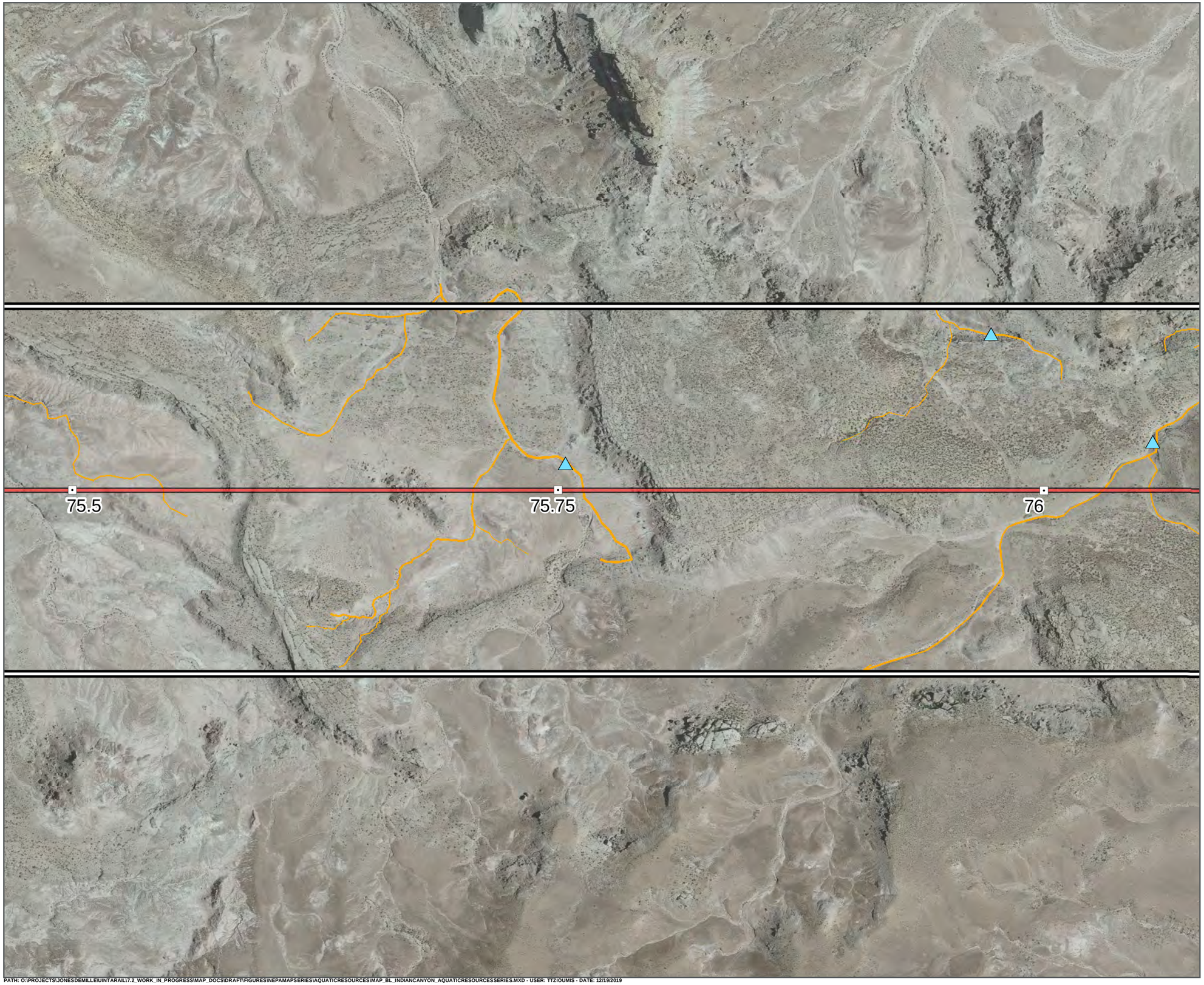
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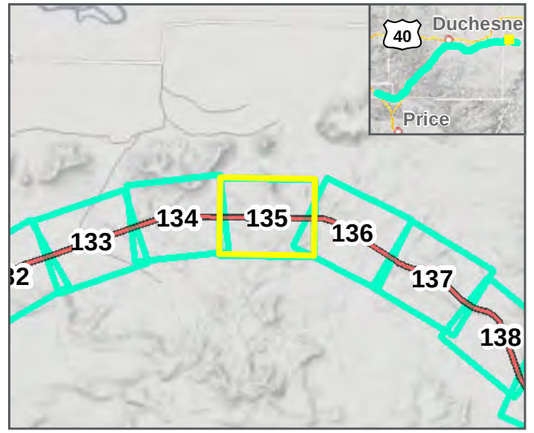
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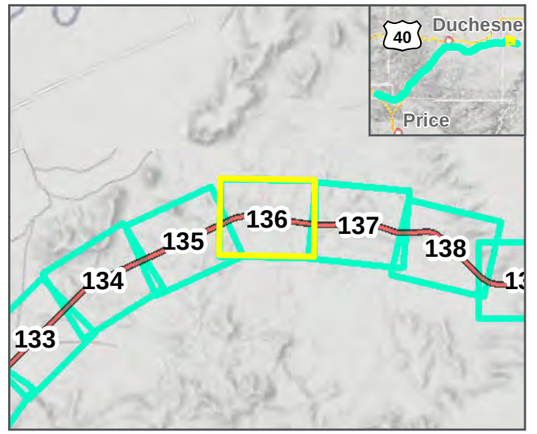
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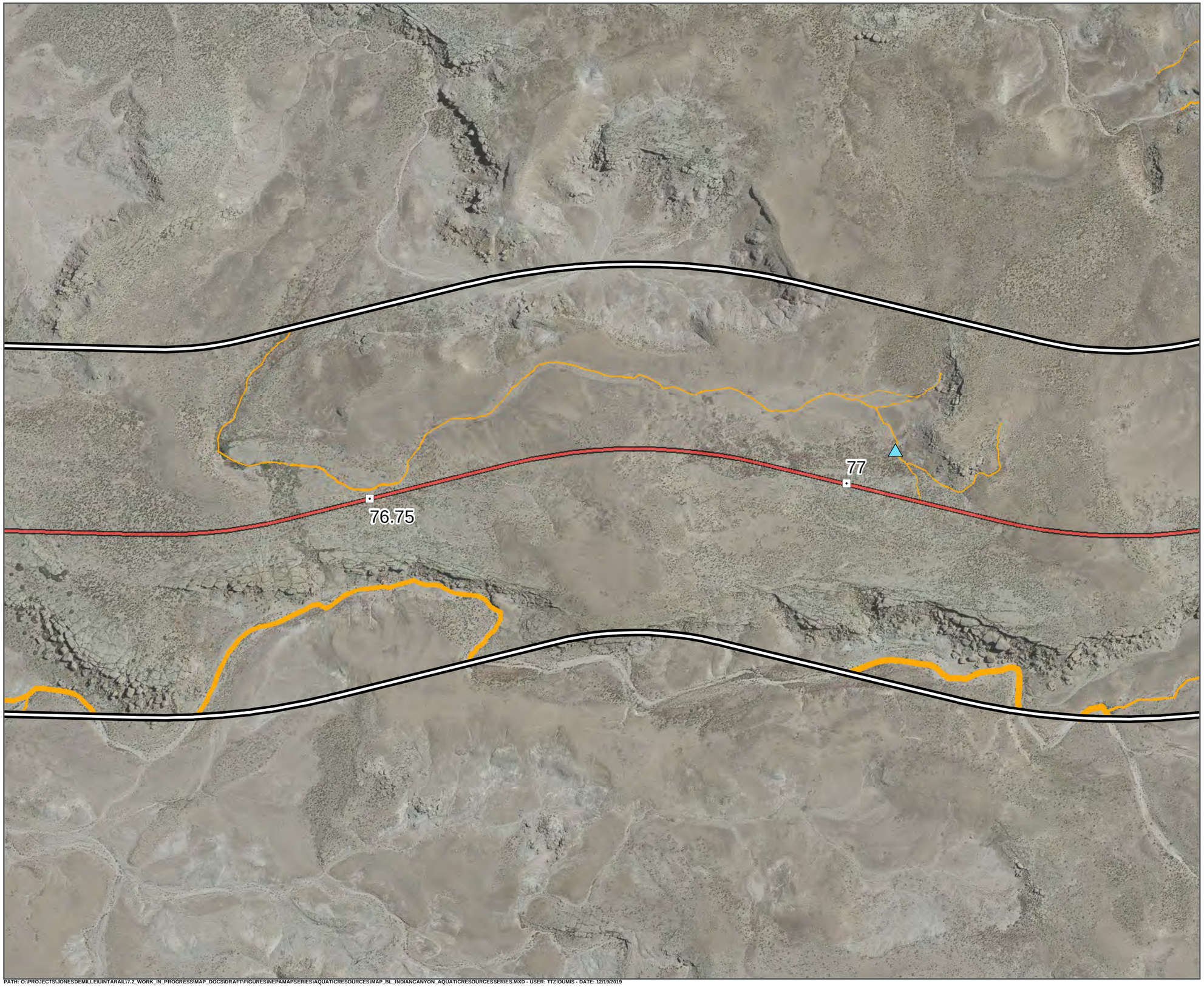
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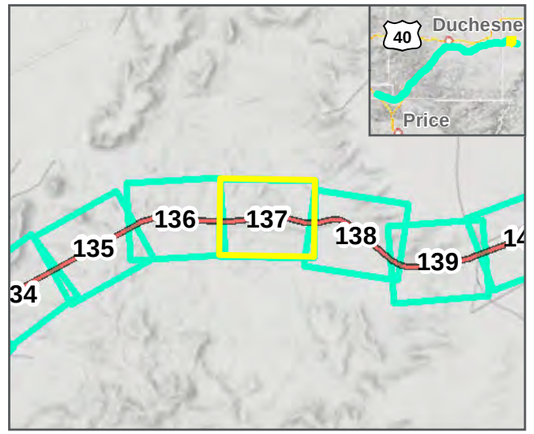
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INDIAN CANYON ALTERNATIVE: 11/22/2019

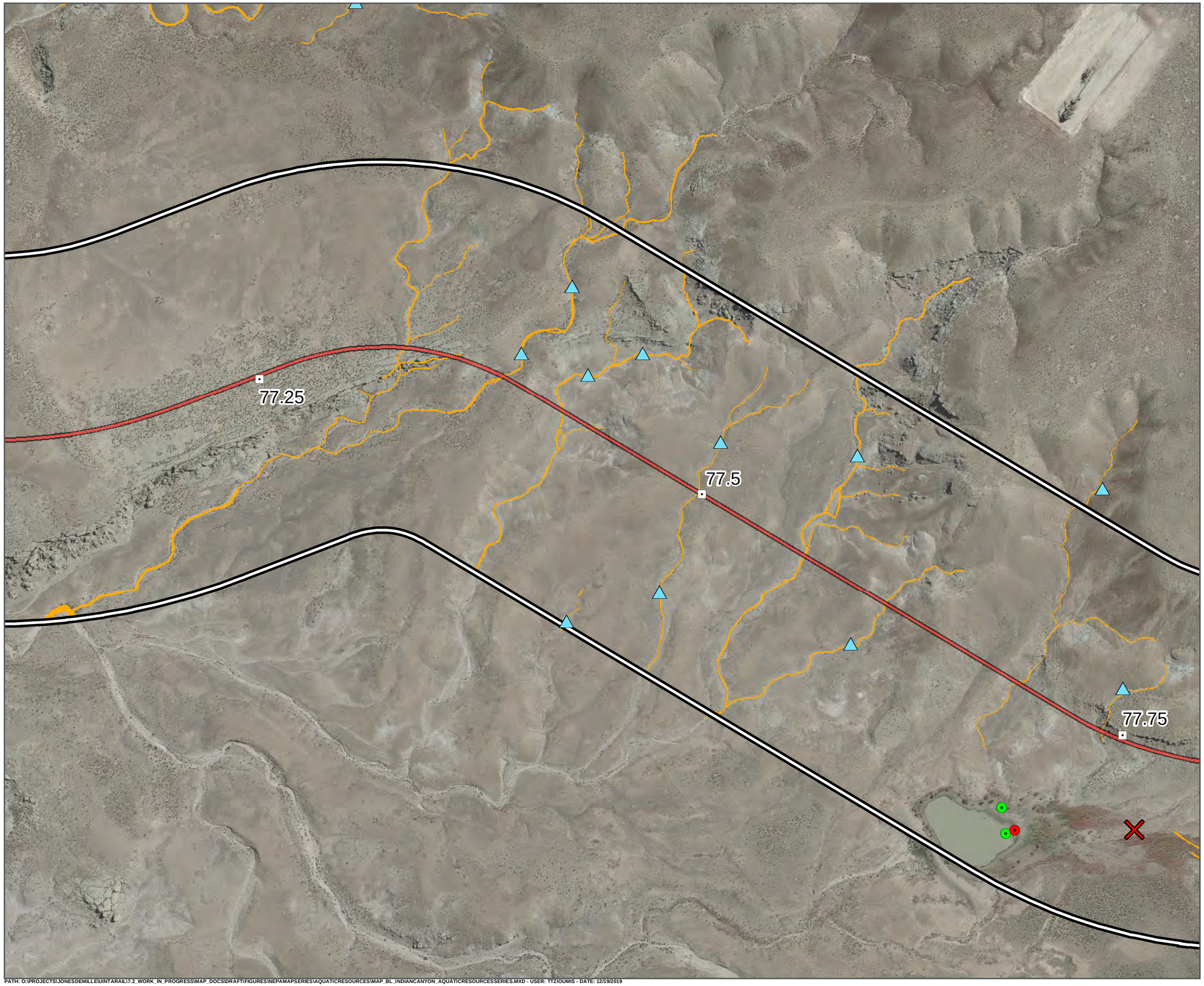
AQUATIC RESOURCES
DECEMBER 2019

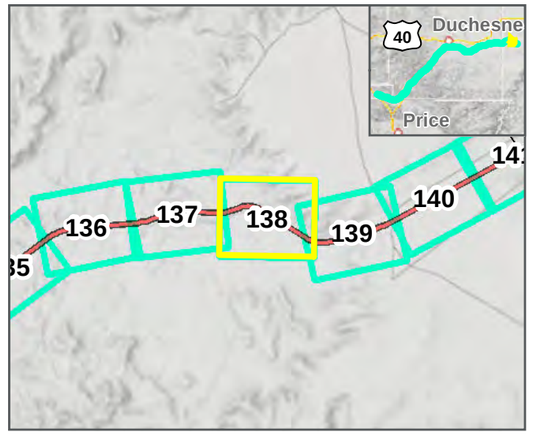
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1 inch = 250 Feet

DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

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- Mileposts
- Indian Canyon Centerline
- Areas Not Surveyed (Data Digitized)
- In Point 2019
- Out Point 2019
- In Point 2014
- Out Point 2014
- Waterway Point 2019
- Waterway Points 2014
- Negative Point
- Verified Point
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- Emergent Marsh
- Shrub-Scrub
- Playa
- Open Water
- Perennial Stream
- Ephemeral/Intermittent Stream
- Ditch/Canal
- Study Area
- Map Extent (current view in yellow)

INDIAN CANYON ALTERNATIVE: 11/22/2019

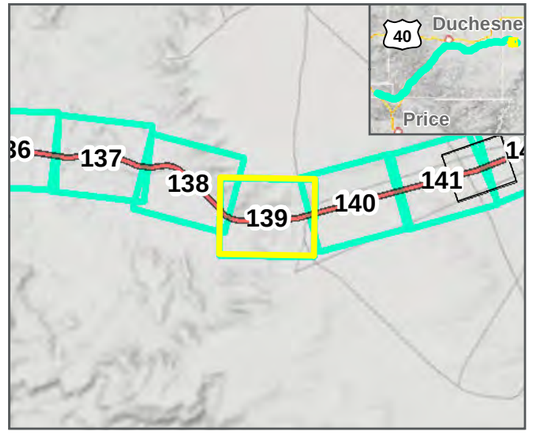
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DECEMBER 2019

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COODINATE SYSTEM:
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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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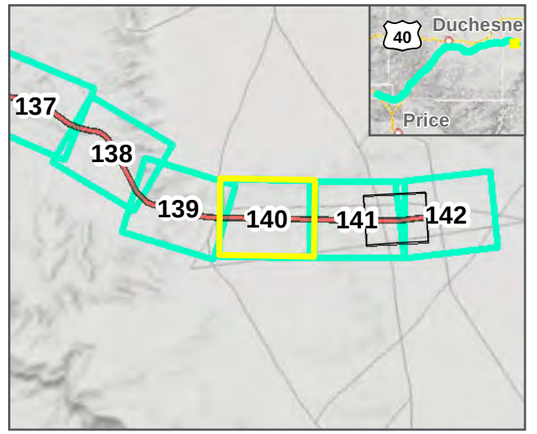
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery
Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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1 inch = 250 Feet

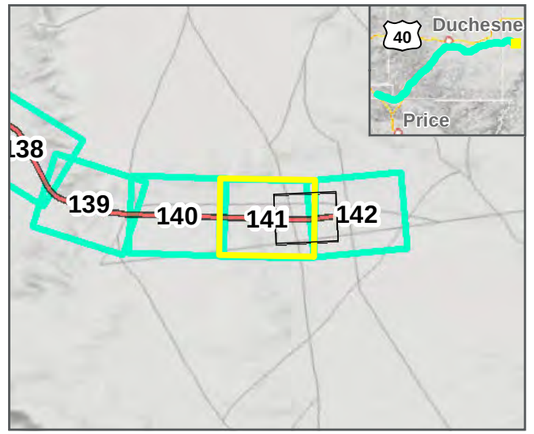
DATA SOURCES:
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Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

Seven County Infrastructure Coalition

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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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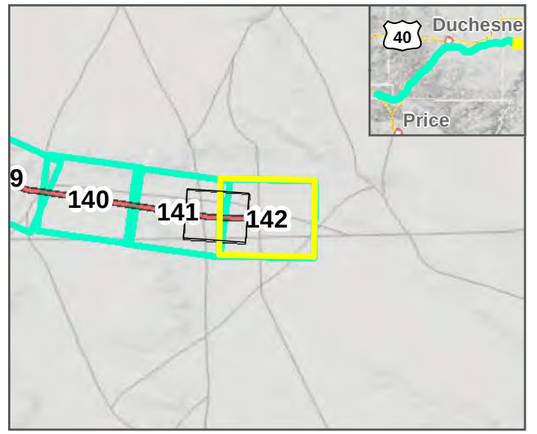
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Utah Google Imagery
Basemap (2013-2015)
COODINATE SYSTEM:
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INDIAN CANYON ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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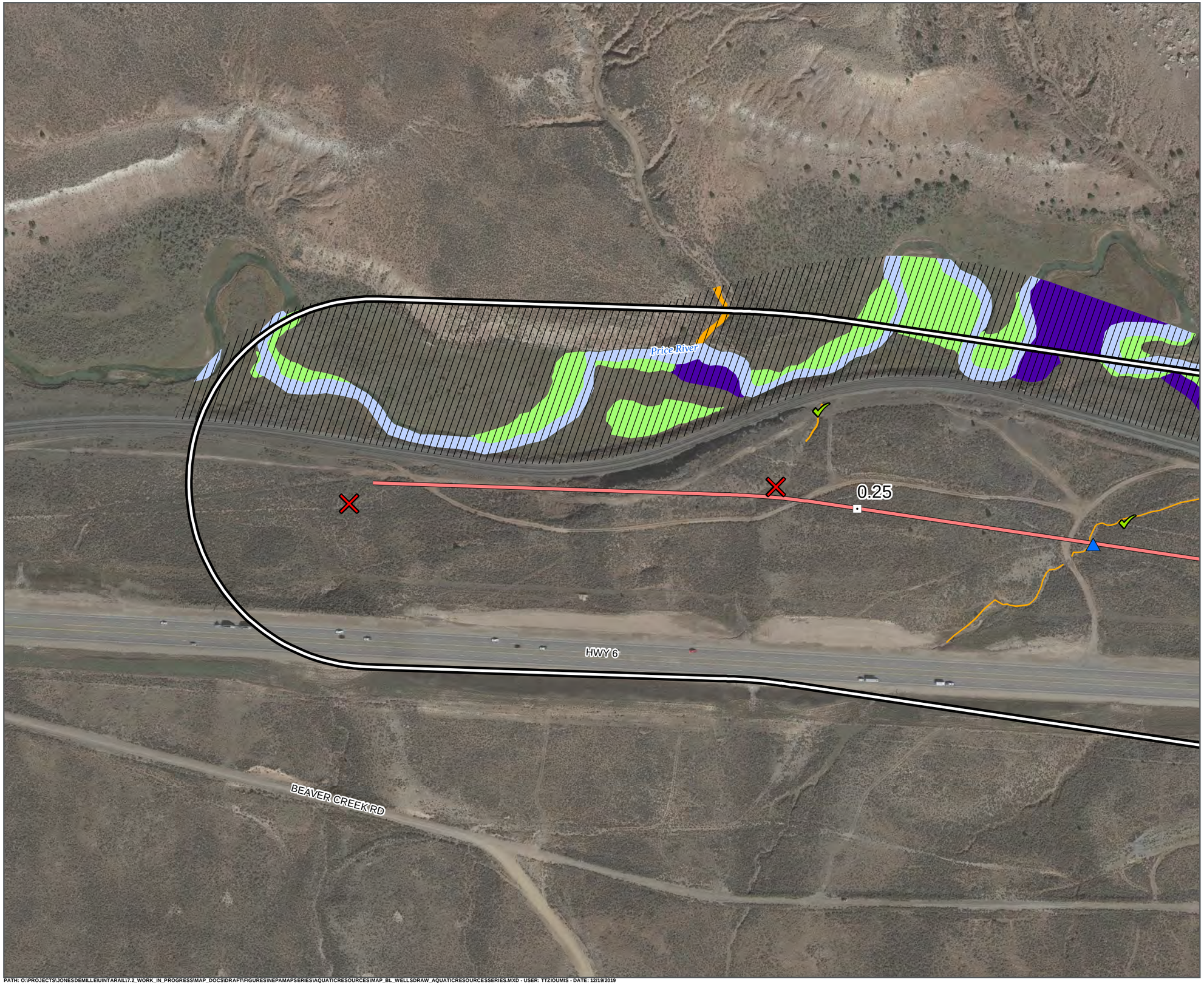
SEVEN COUNTY INFRASTRUCTURE COALITION

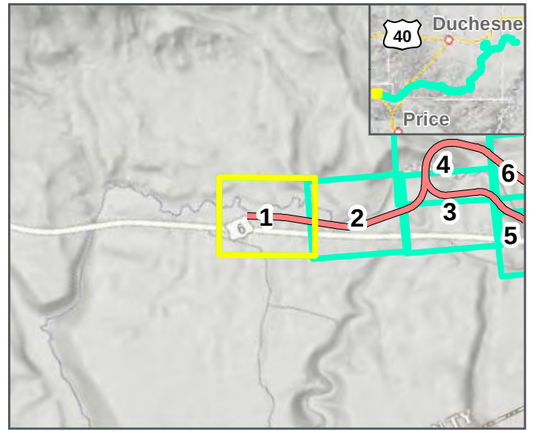
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APPENDIX B

Aquatic Resource Maps in the Wells Draw Study Area





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WELLS DRAW ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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0 125 250 Feet

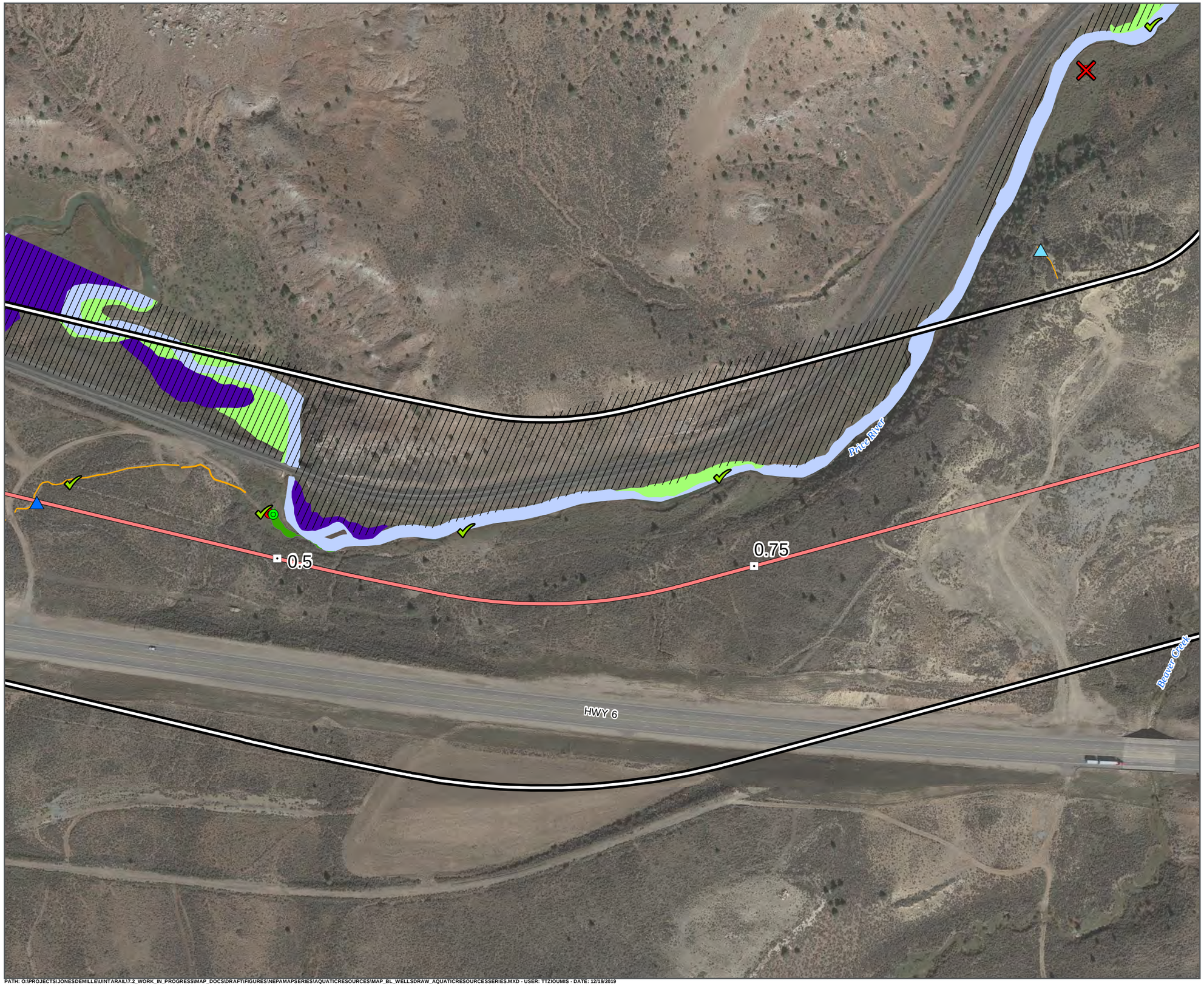
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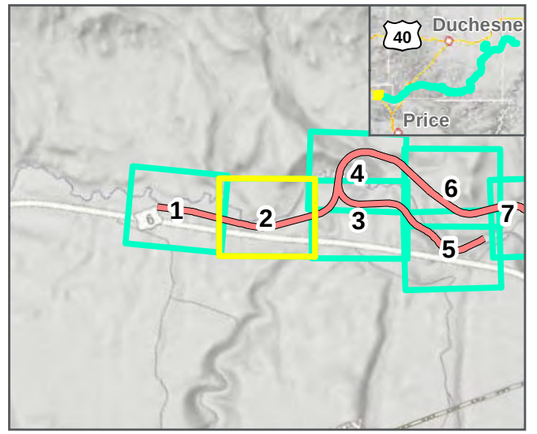
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

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AQUATIC RESOURCES
DECEMBER 2019

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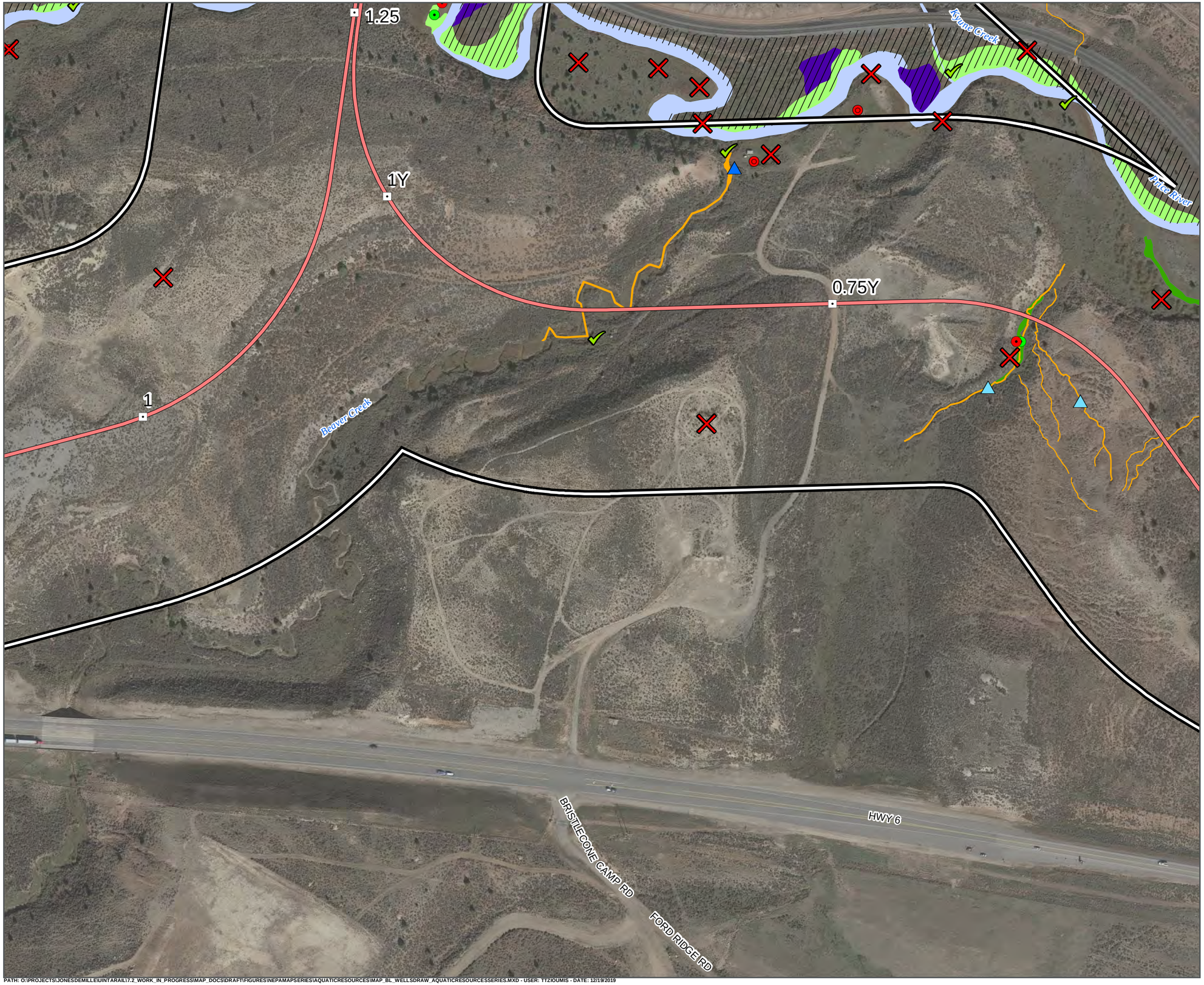
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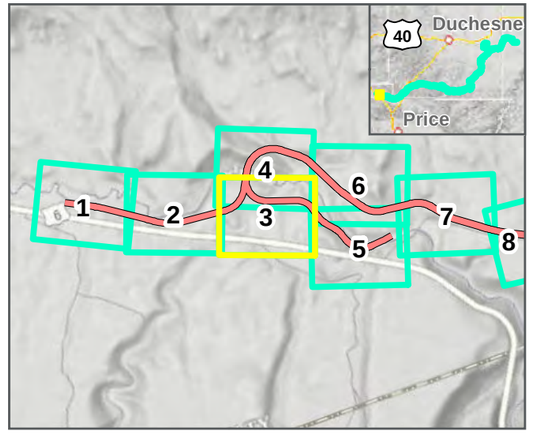
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

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DECEMBER 2019

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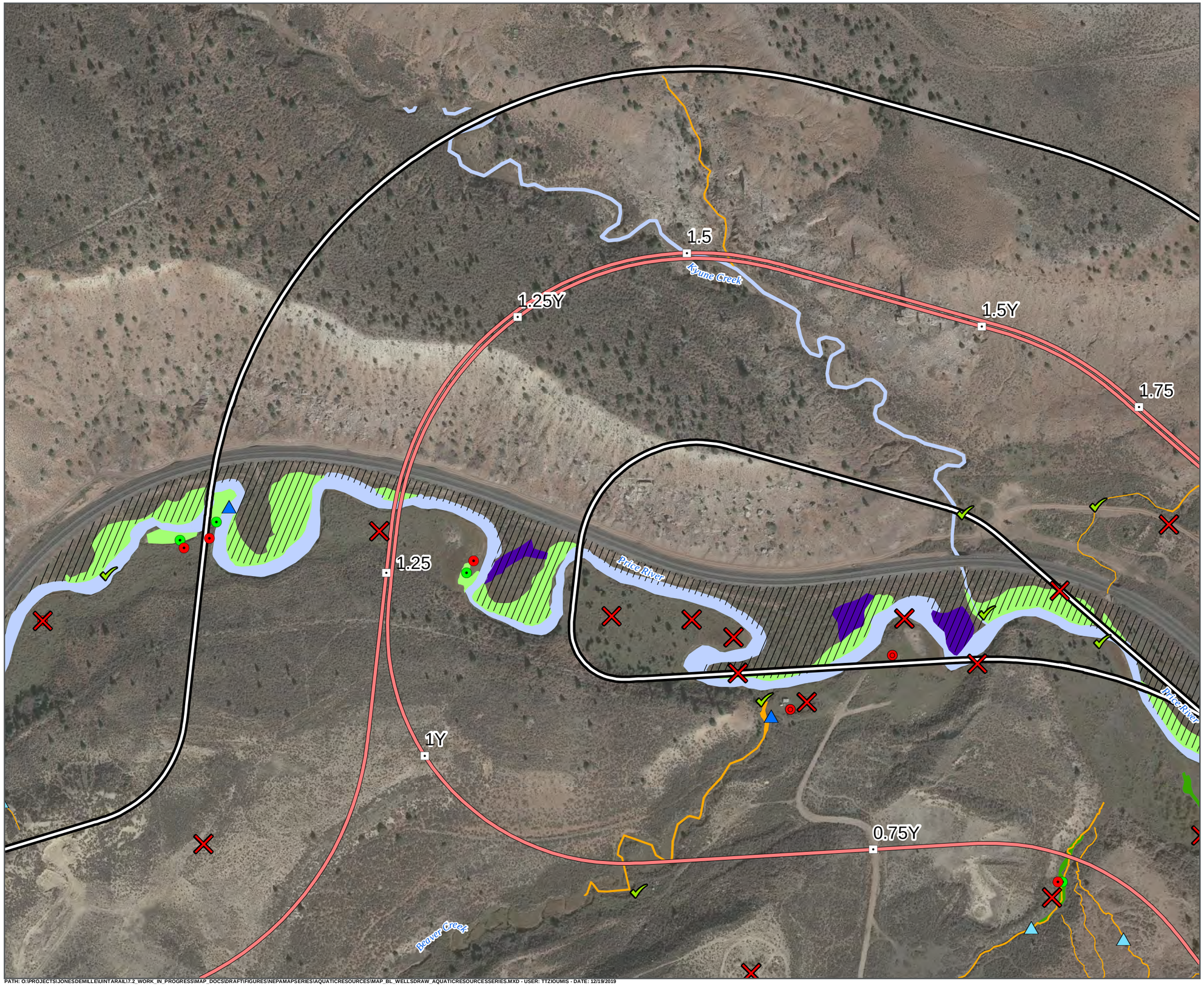
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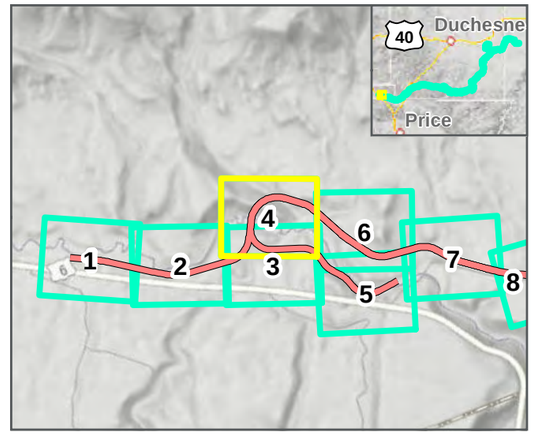
DATA SOURCES:
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DECEMBER 2019

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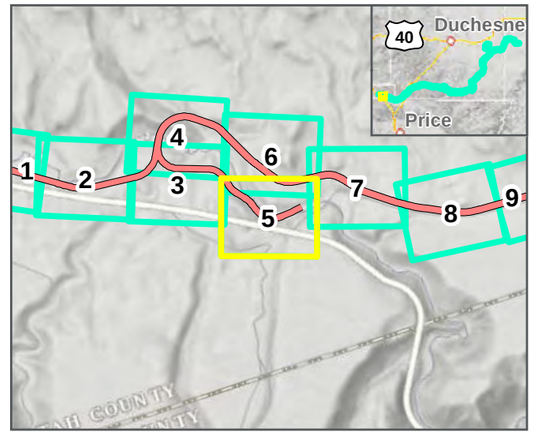
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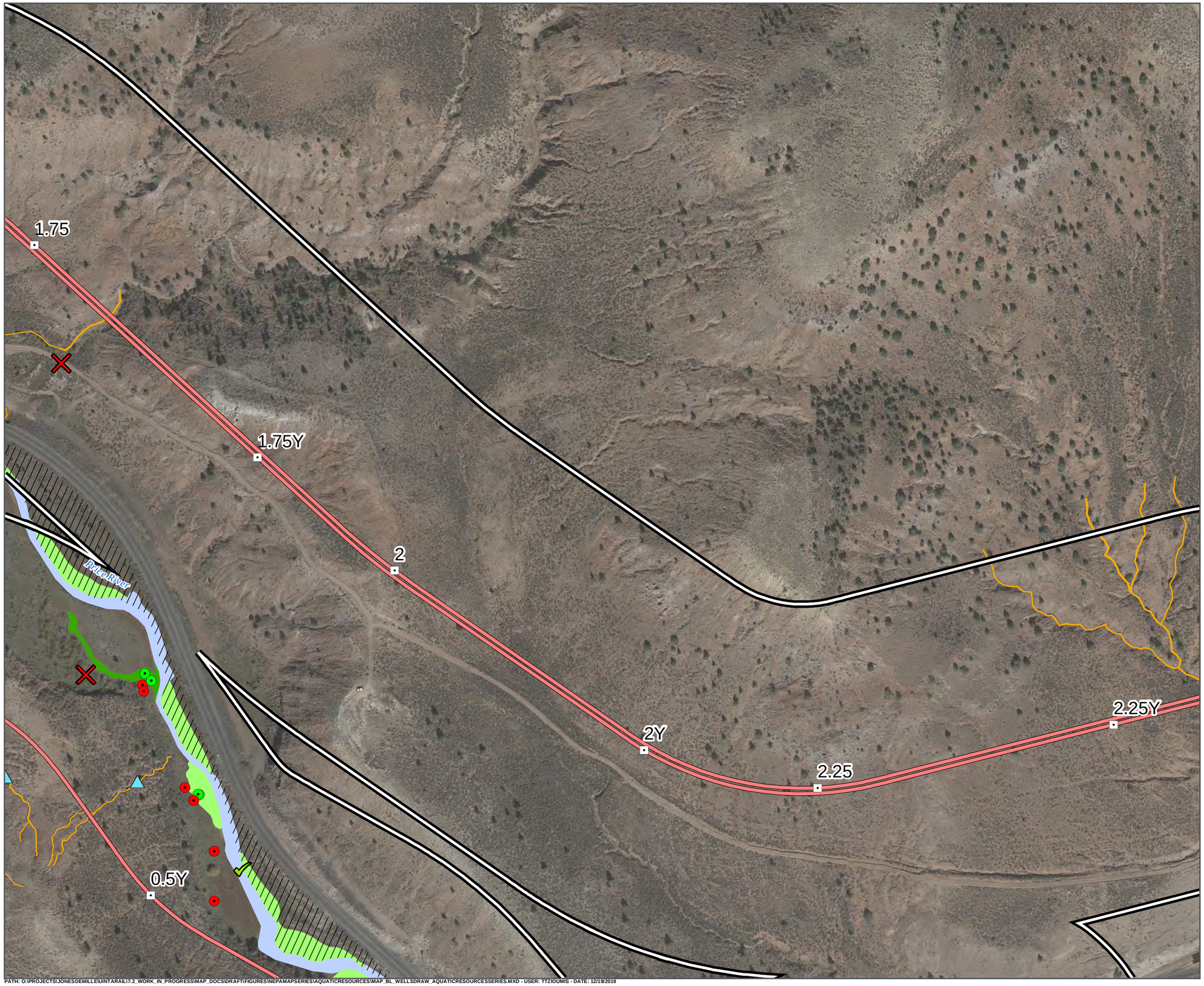
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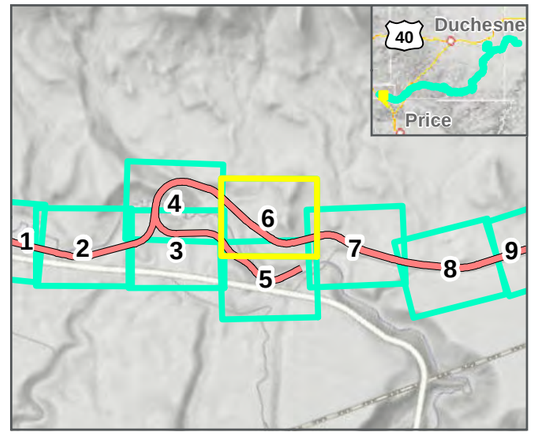
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DECEMBER 2019

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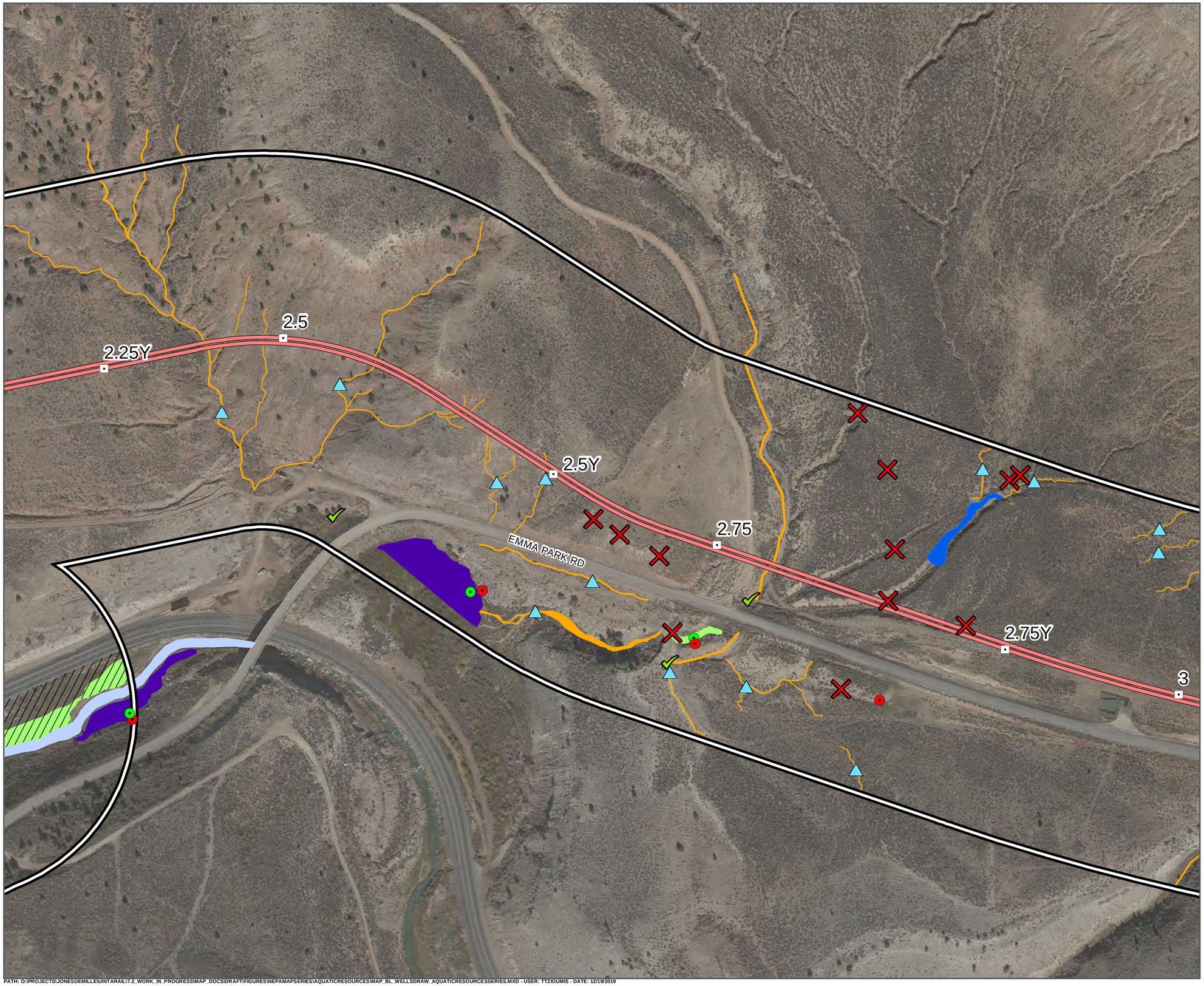
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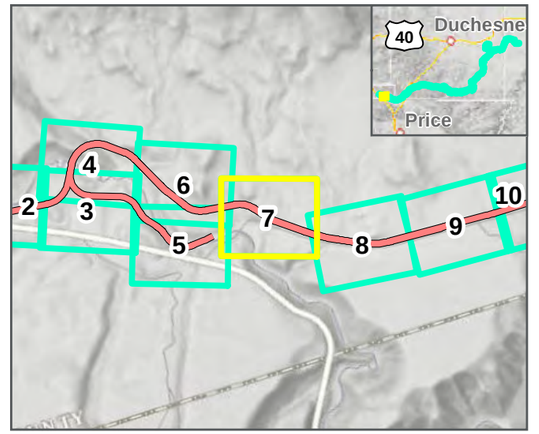
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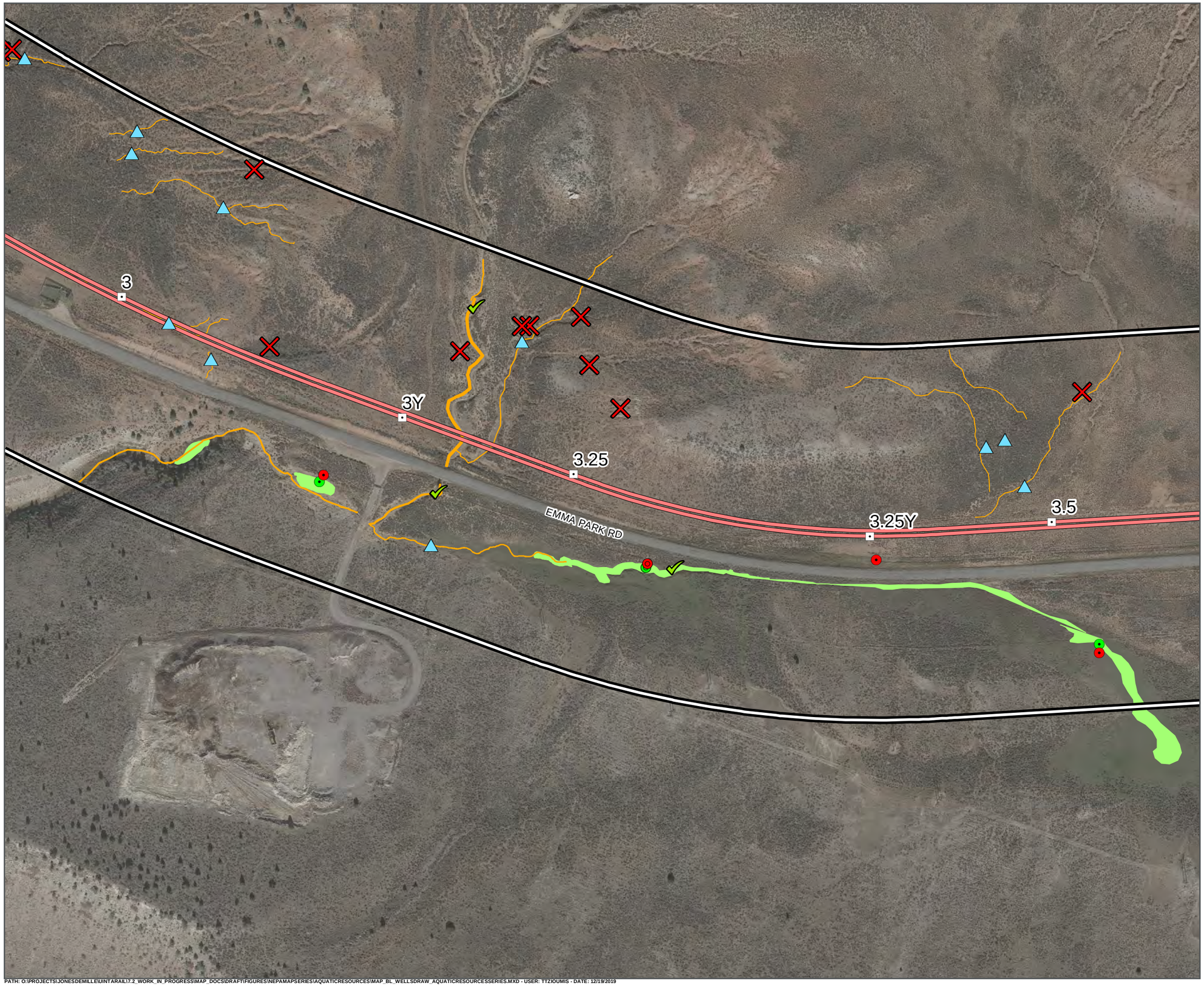
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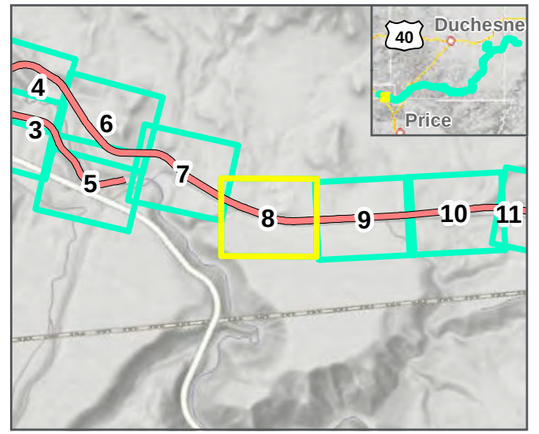
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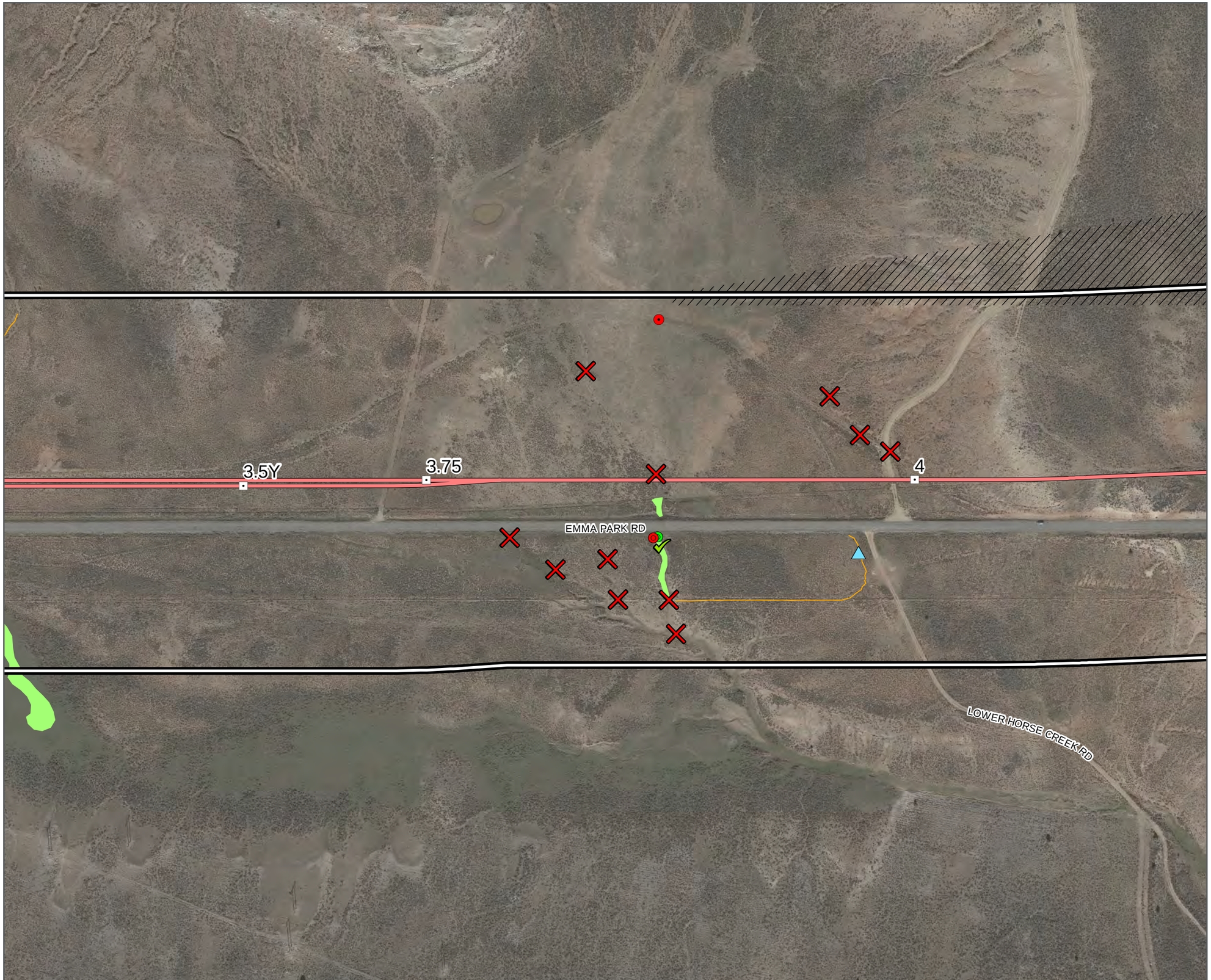
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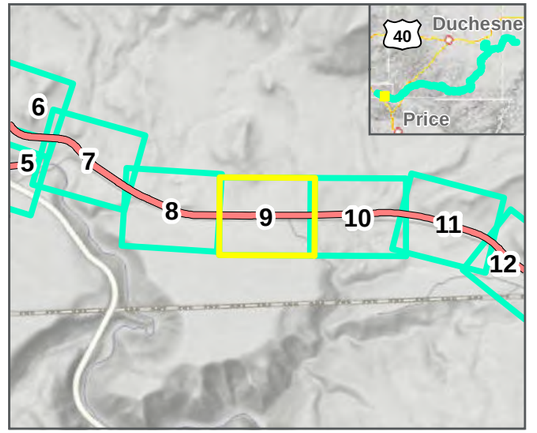
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- Ditch/Canal
- Study Area
- Map Extent (current view in yellow)

WELLS DRAW ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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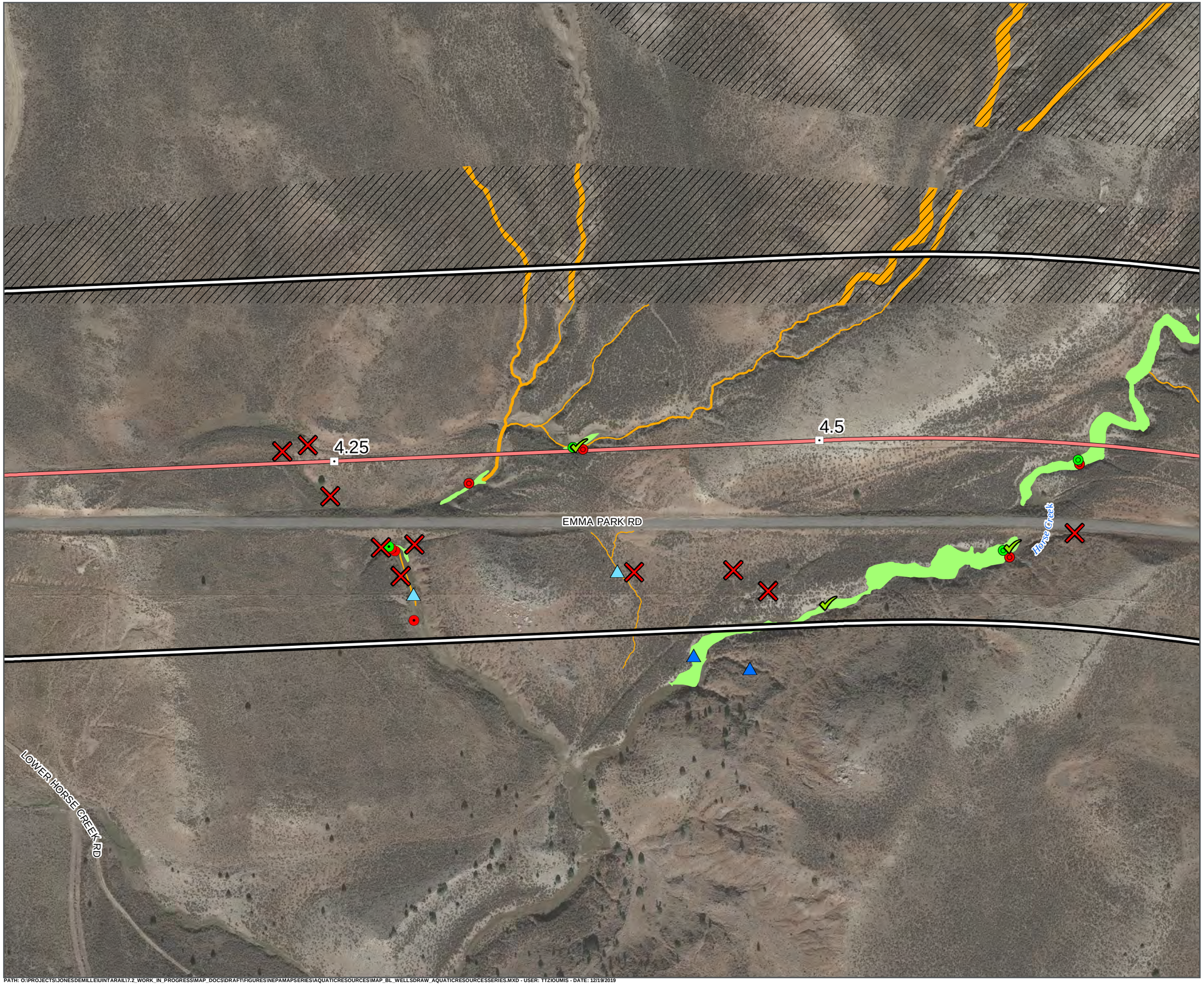
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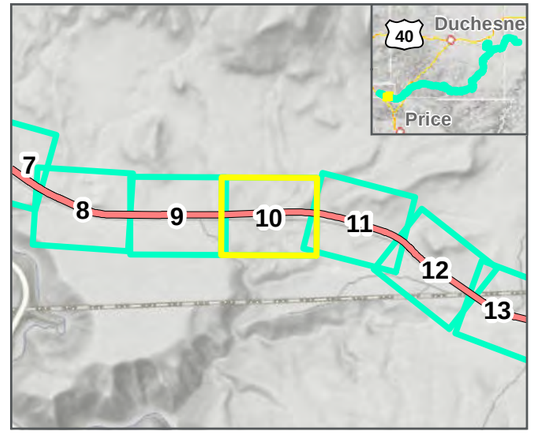
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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DECEMBER 2019

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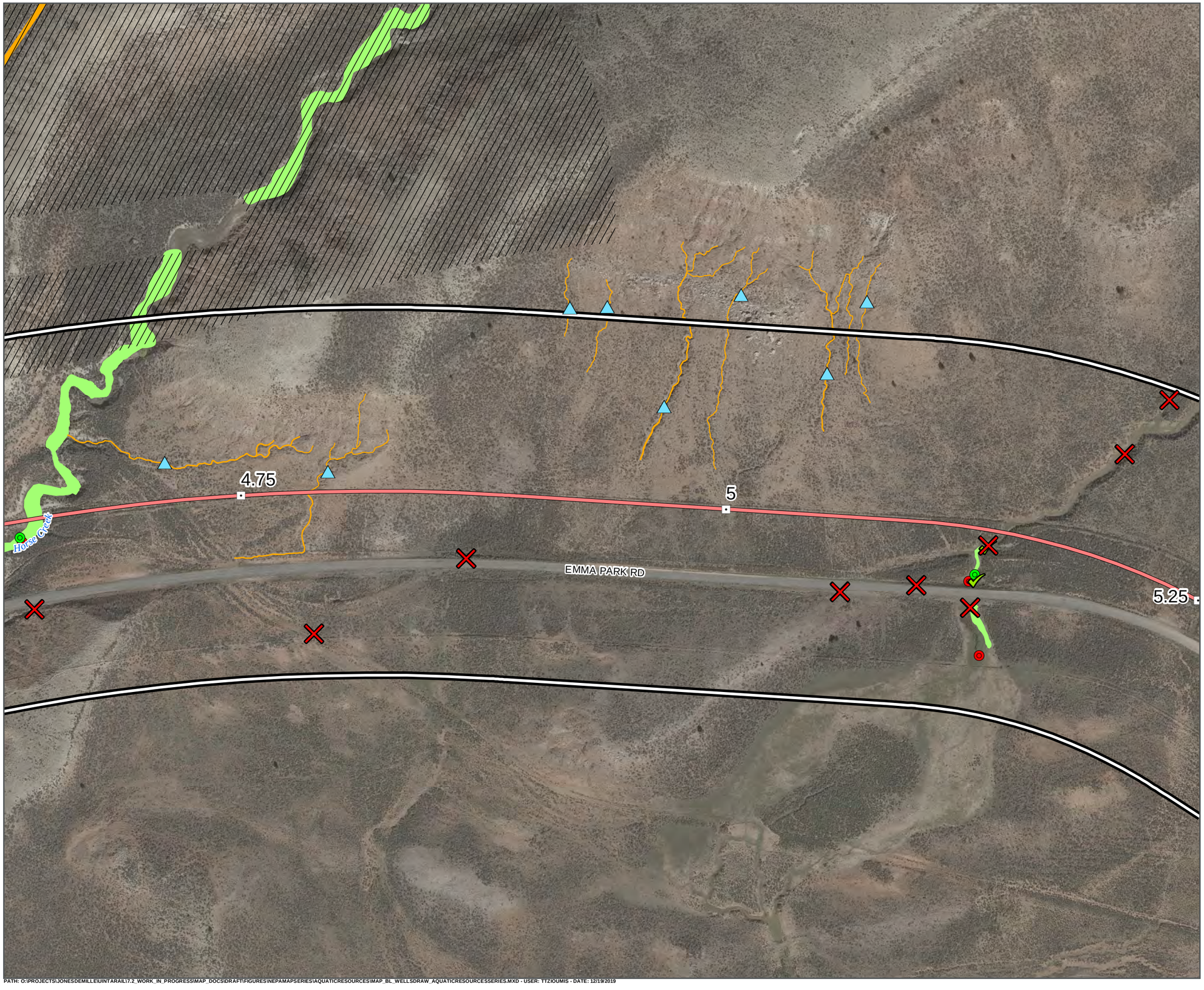
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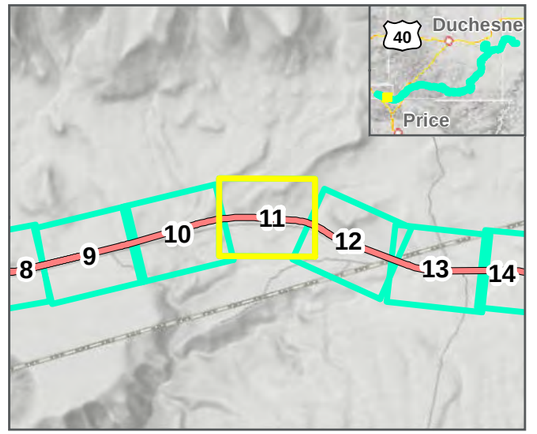
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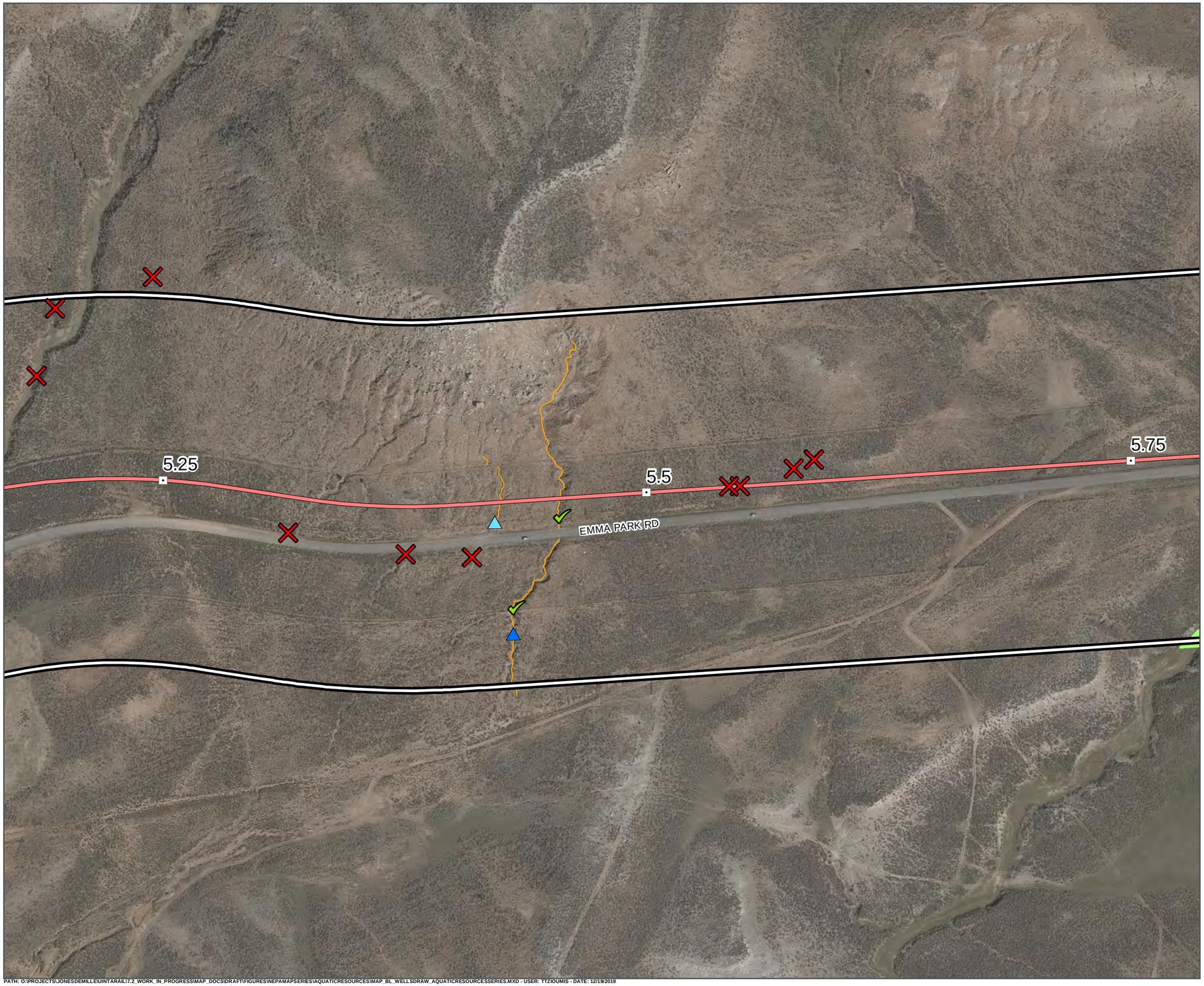
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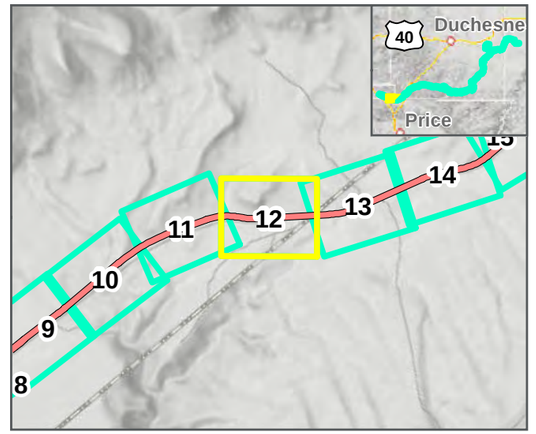
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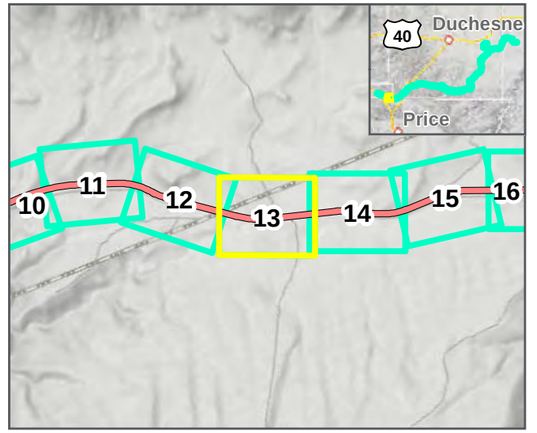
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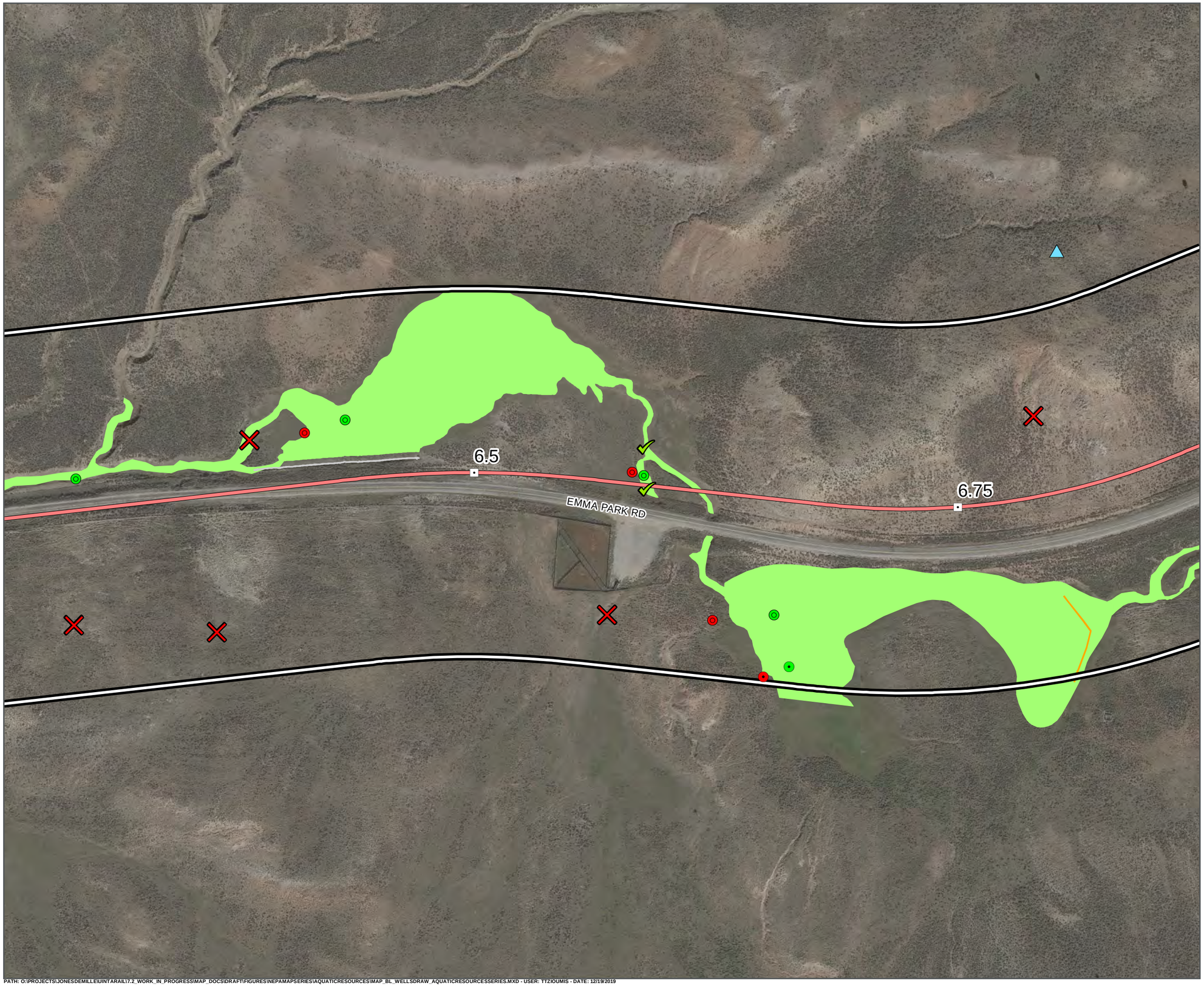
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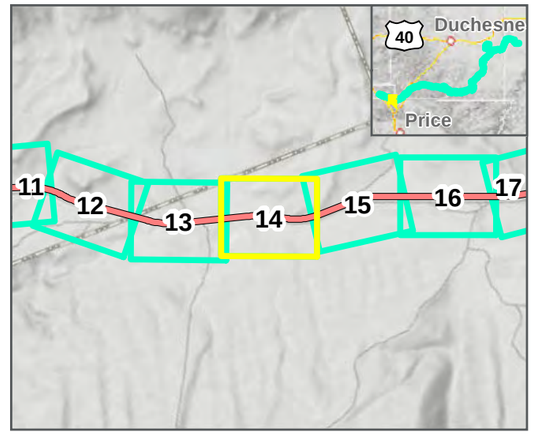
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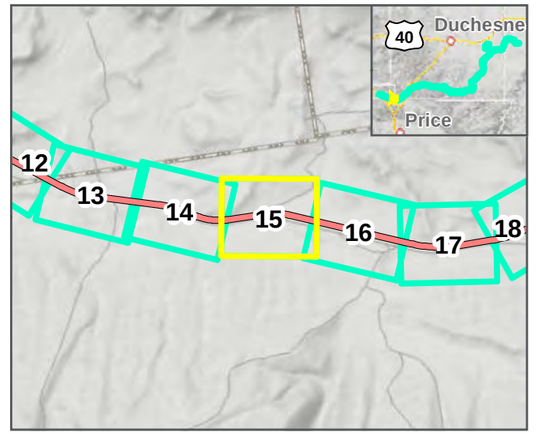
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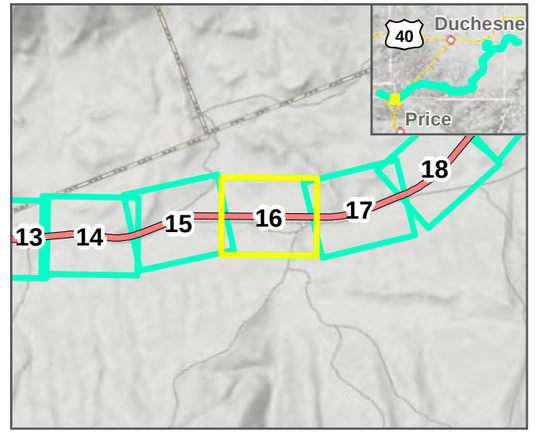
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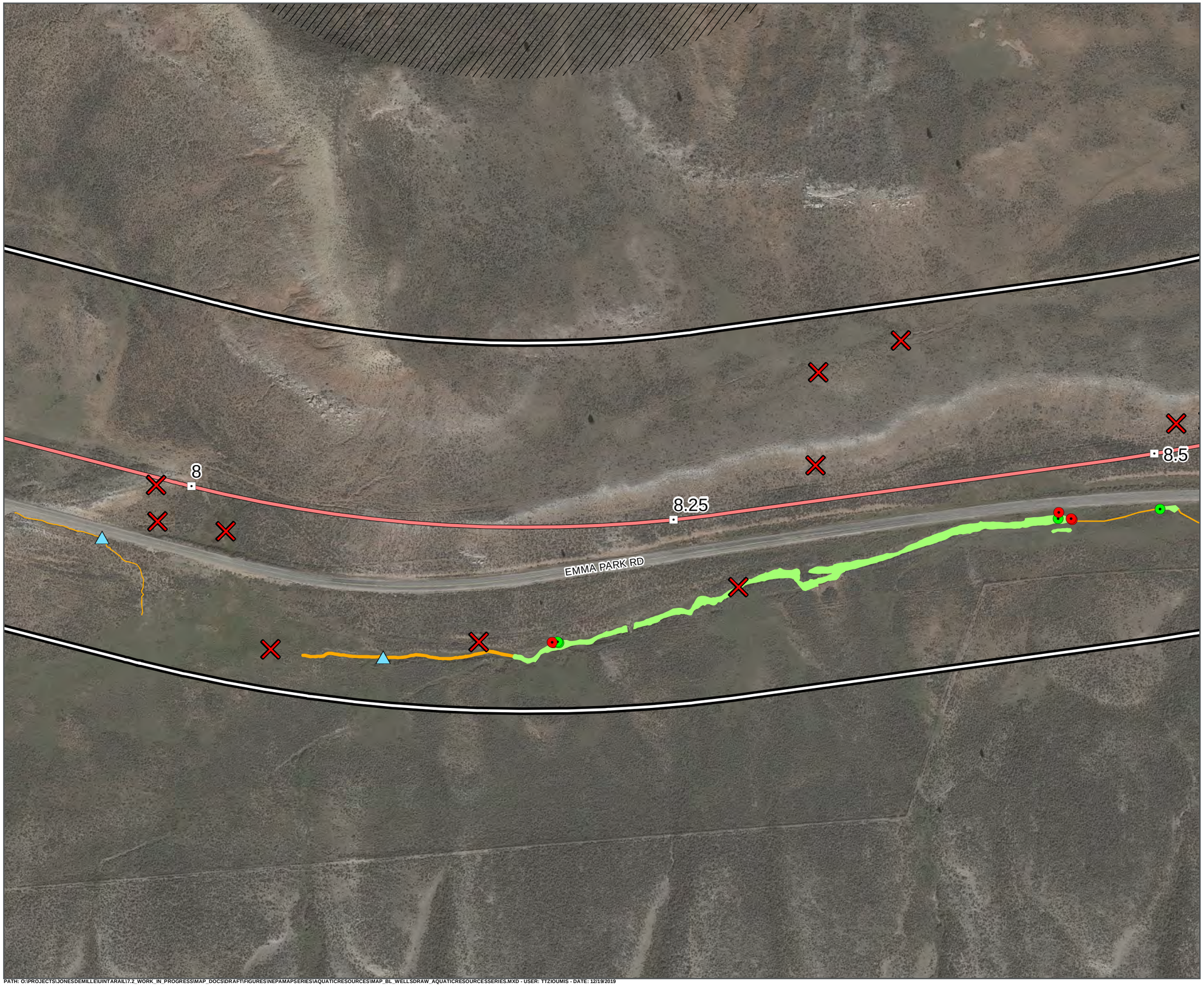
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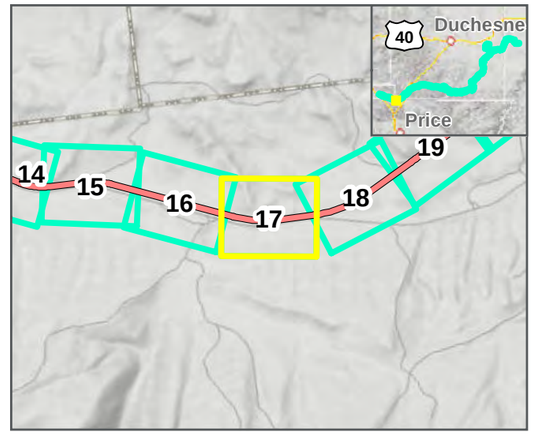
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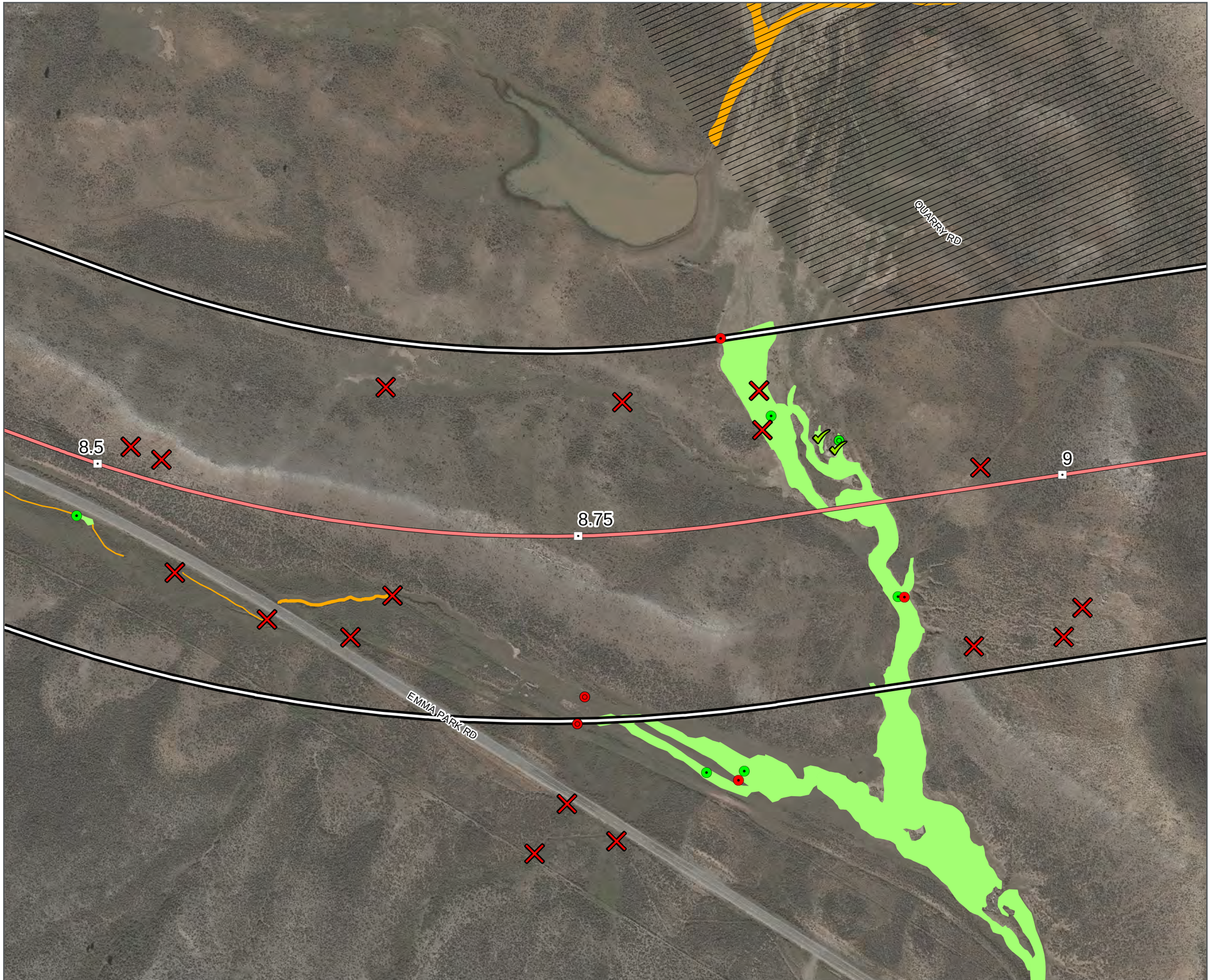
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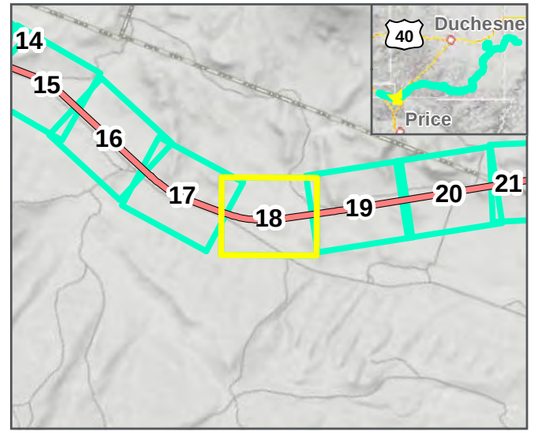
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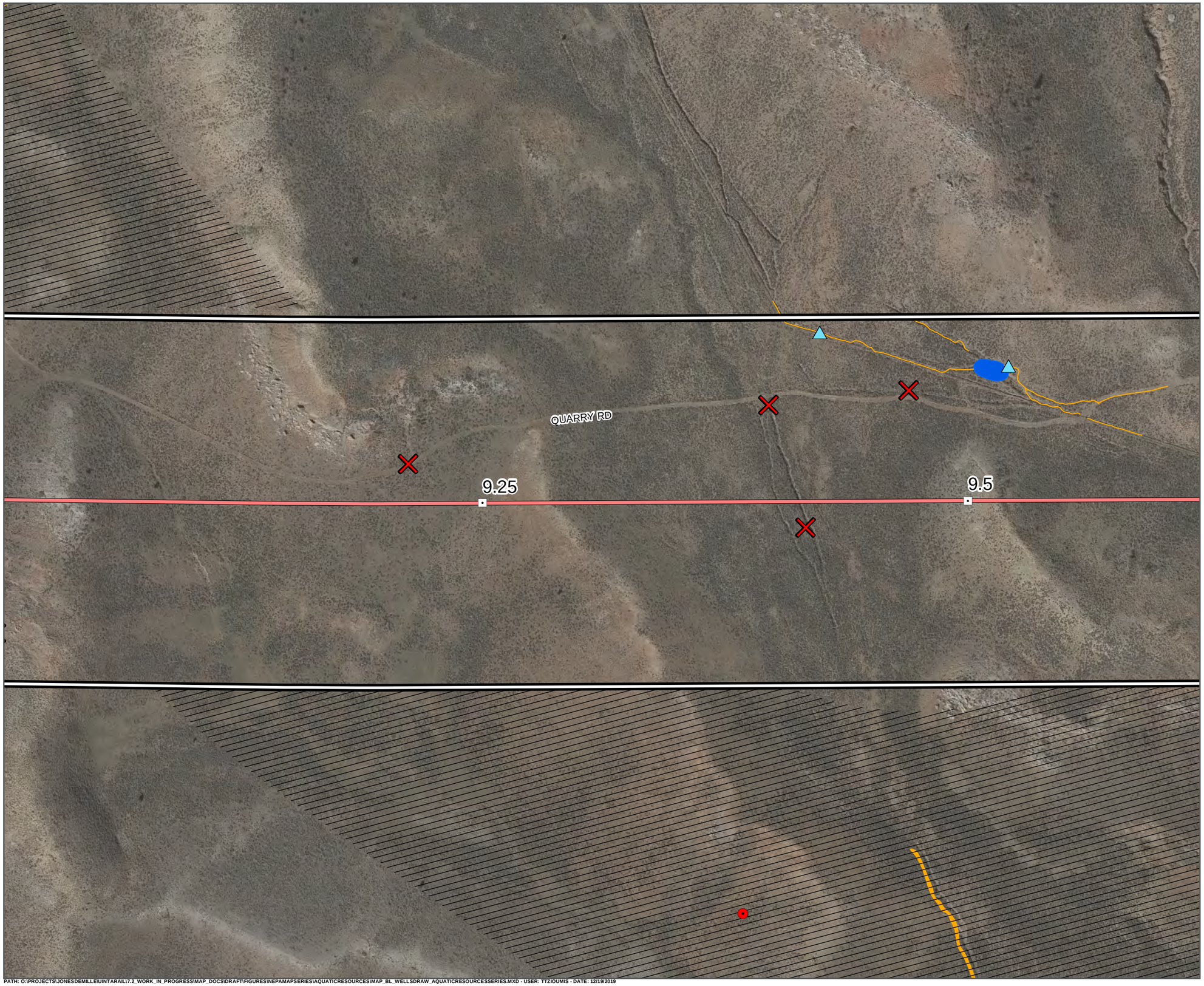
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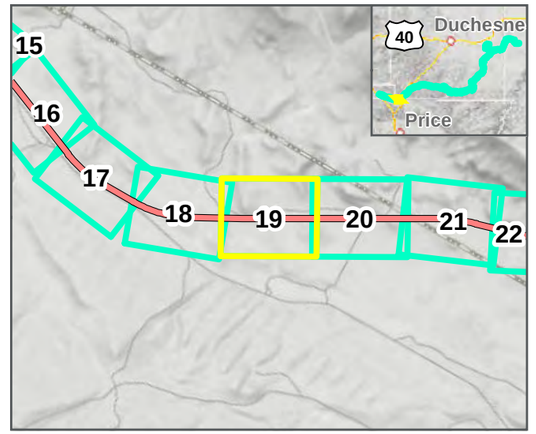
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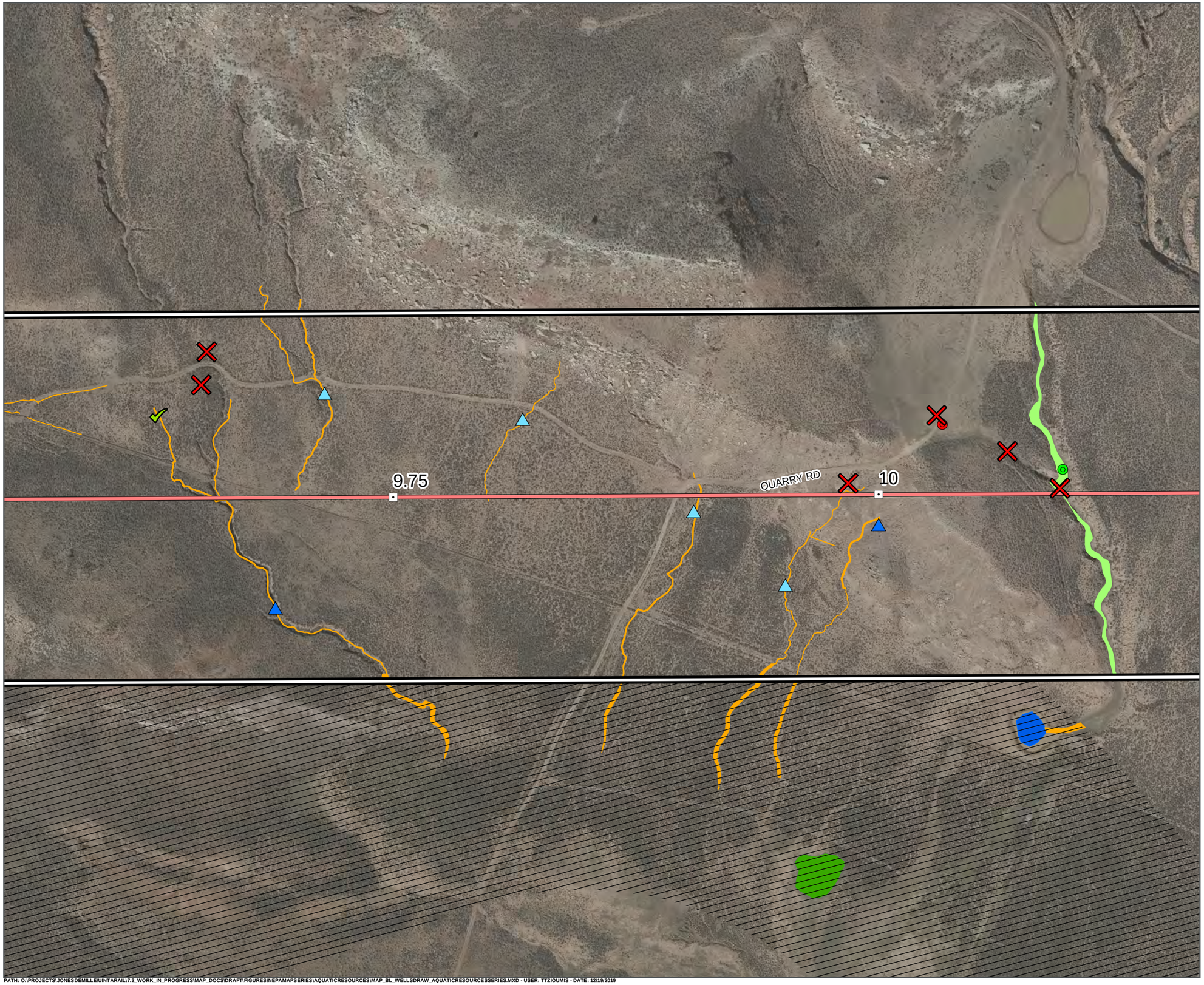
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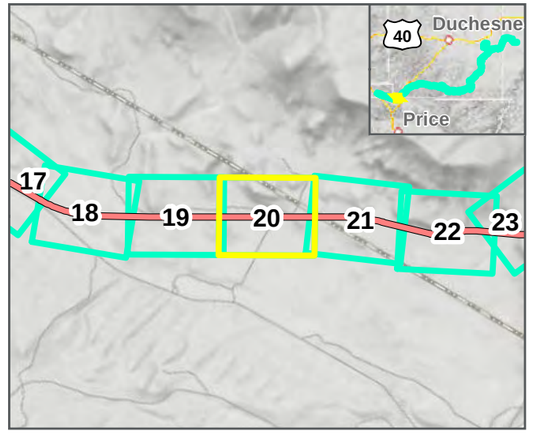
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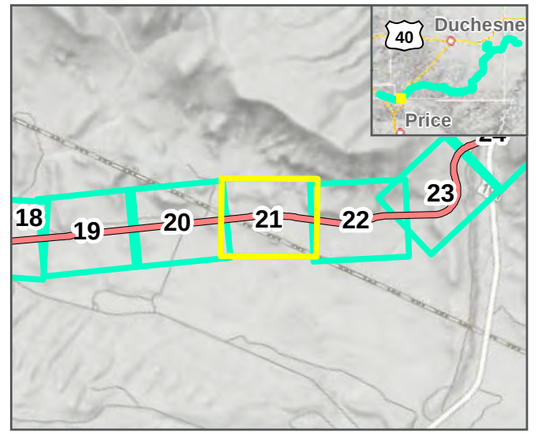
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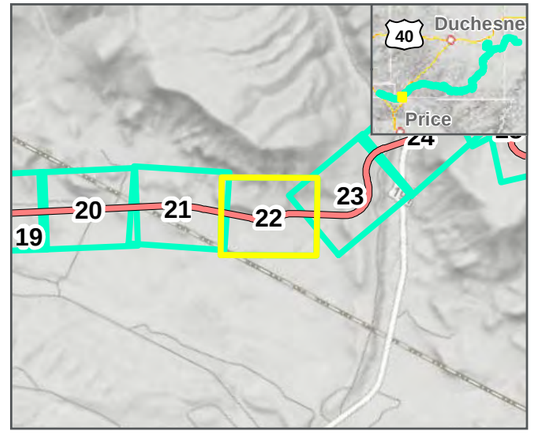
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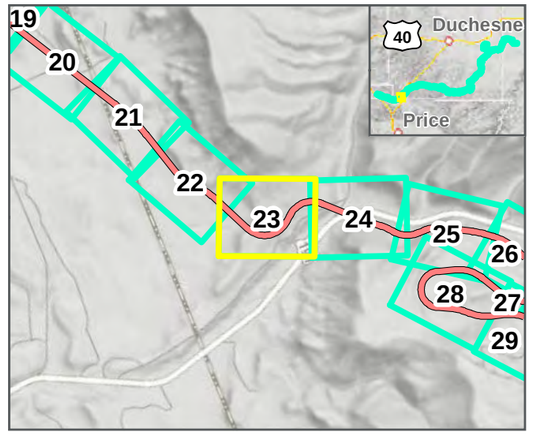
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DECEMBER 2019

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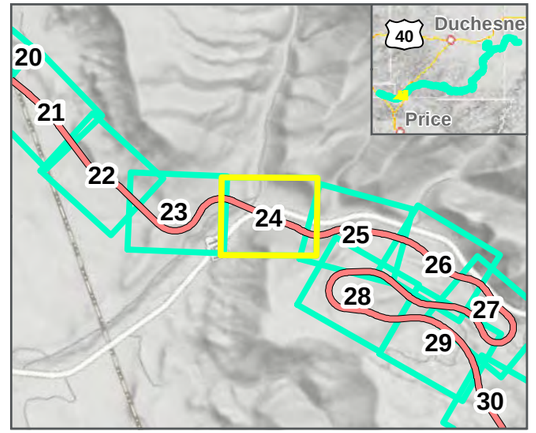
1 inch = 250 Feet

DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

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- Milepost
- Wells Draw Centerline
- Areas Not Surveyed (Data Digitized)
- In Point 2019
- Out Point 2019
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- Shrub-Scrub
- Playa
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- Ditch/Canal
- Study Area
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WELLS DRAW ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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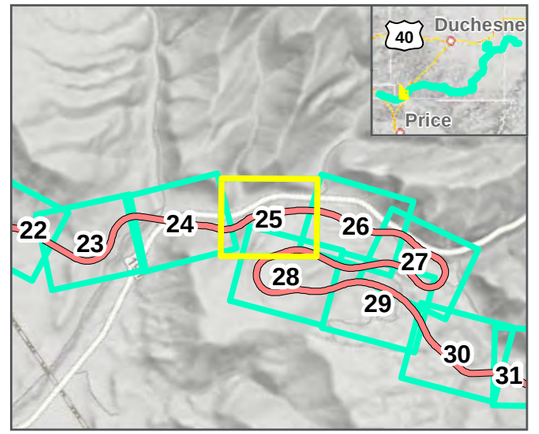
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HDR

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AQUATIC RESOURCES
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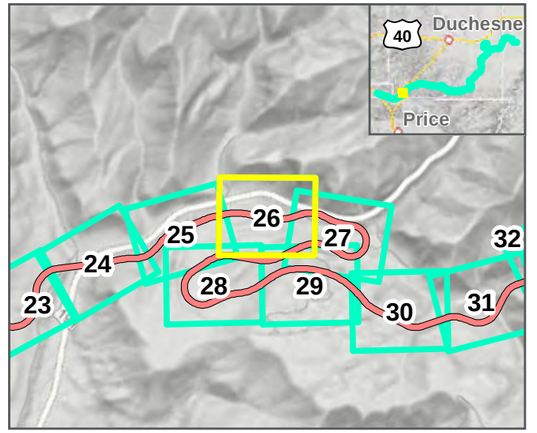
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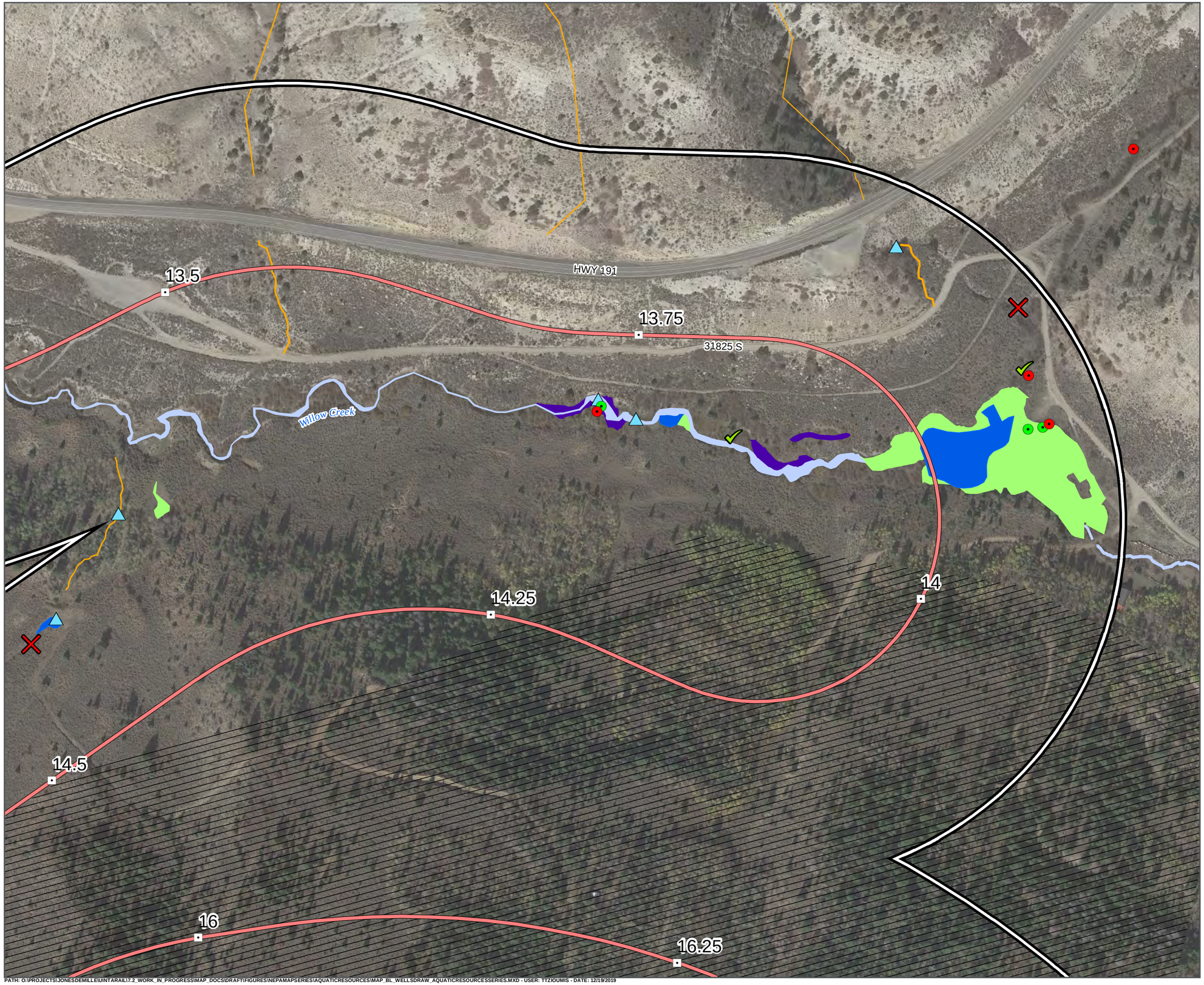
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DECEMBER 2019

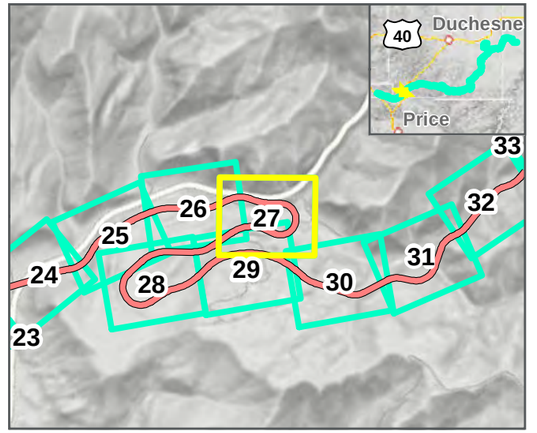
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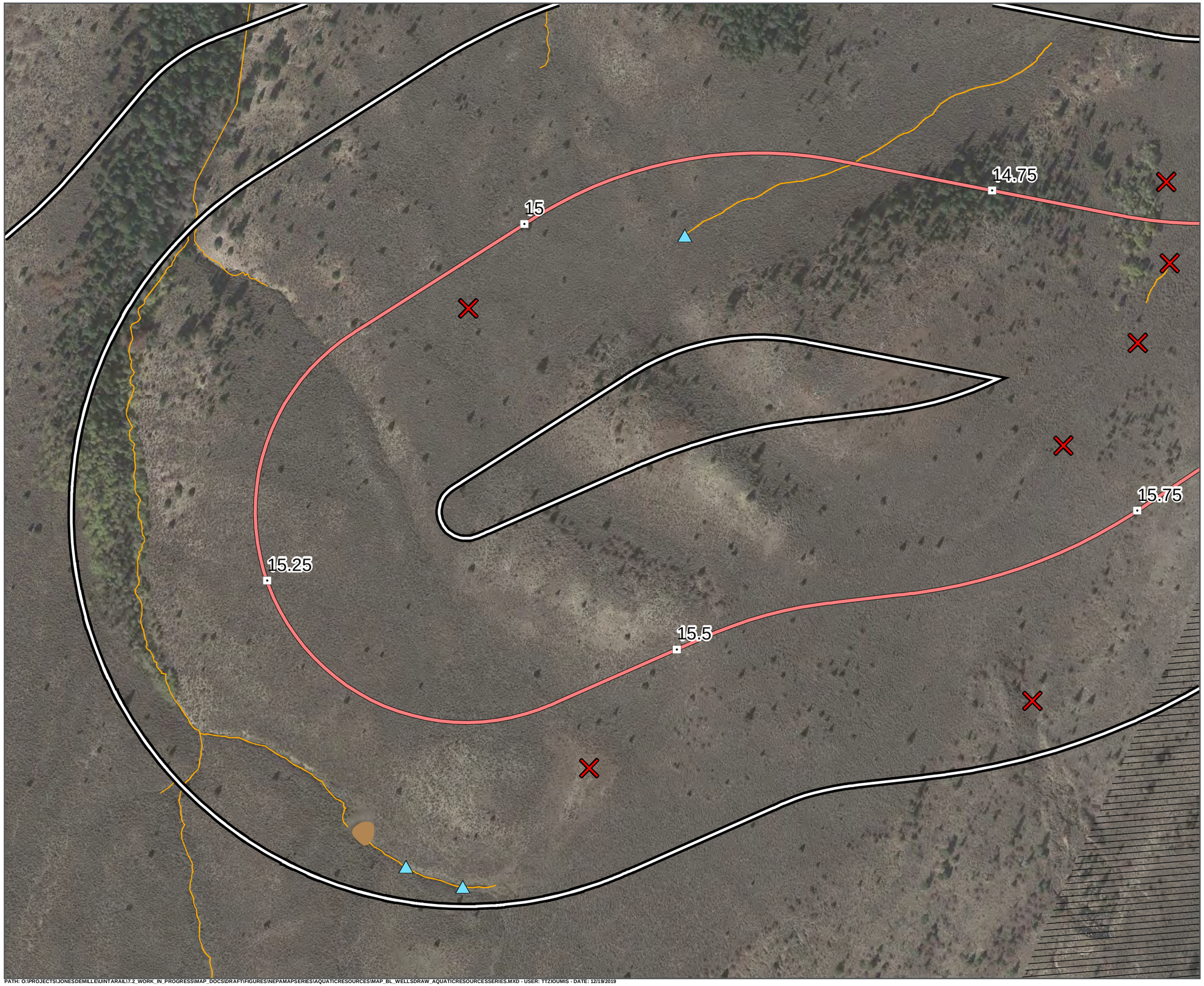
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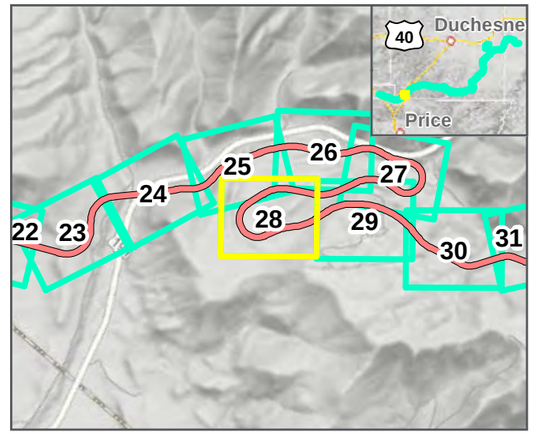
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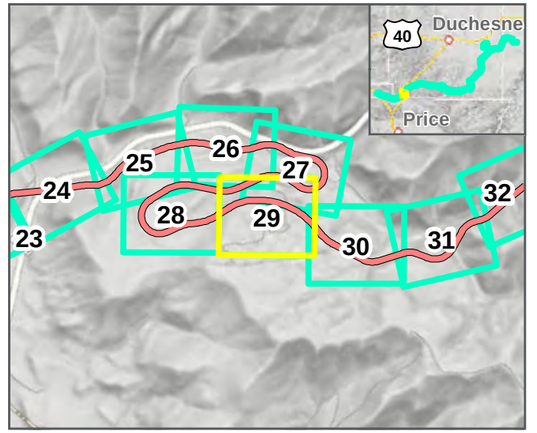
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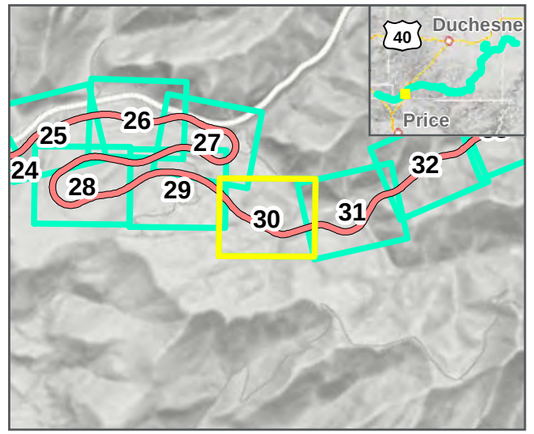
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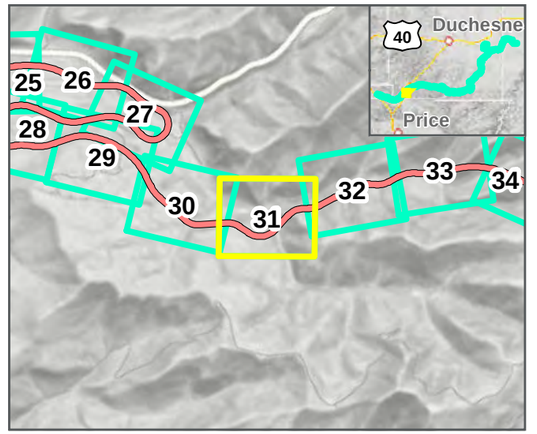
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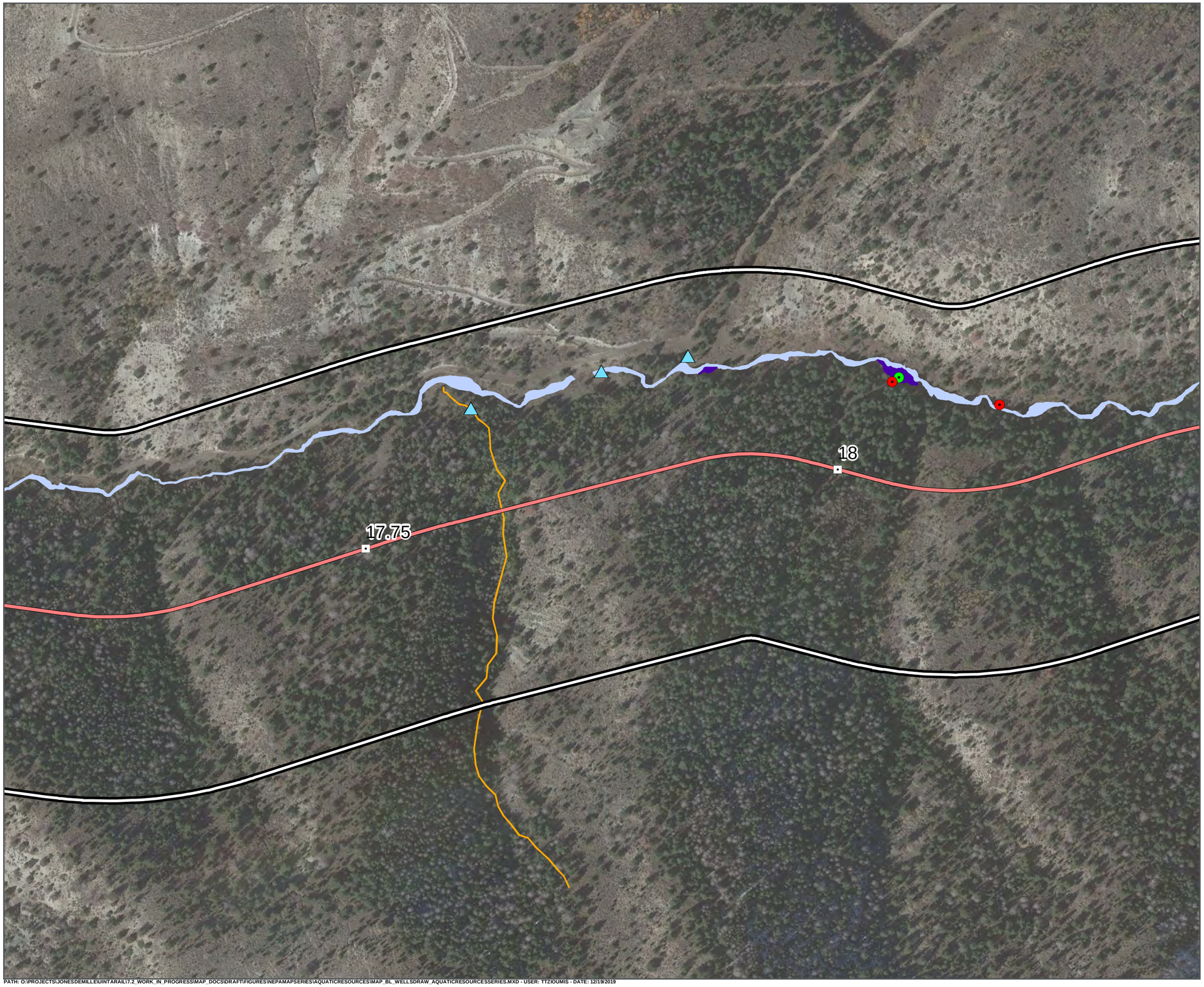
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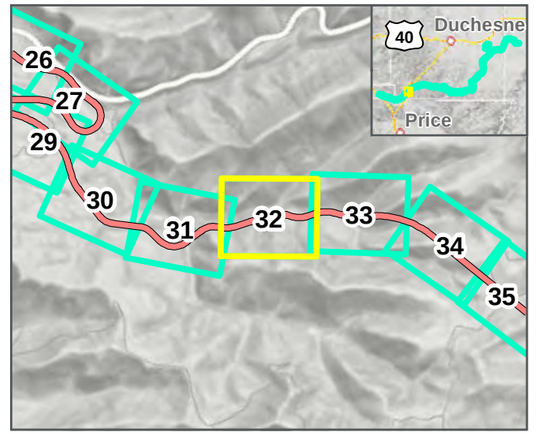
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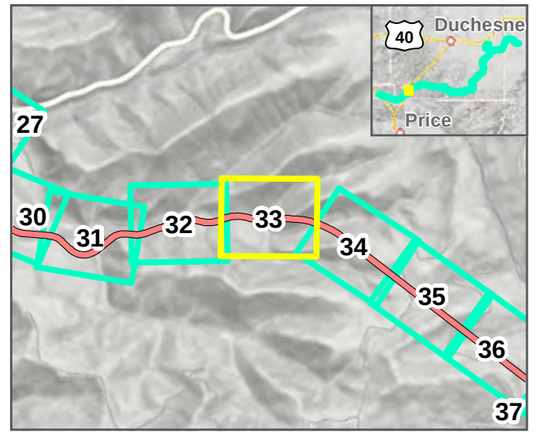
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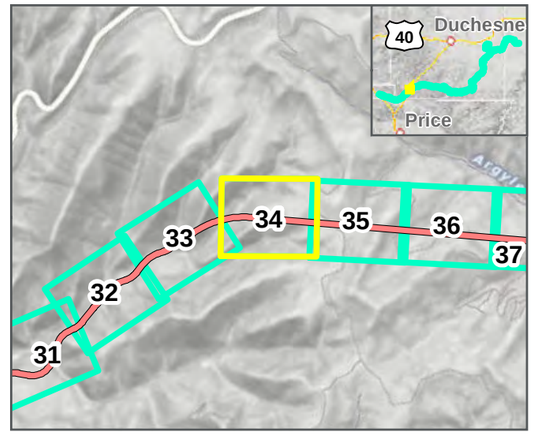
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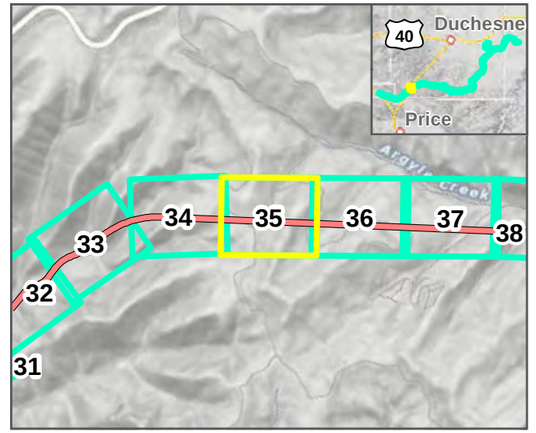
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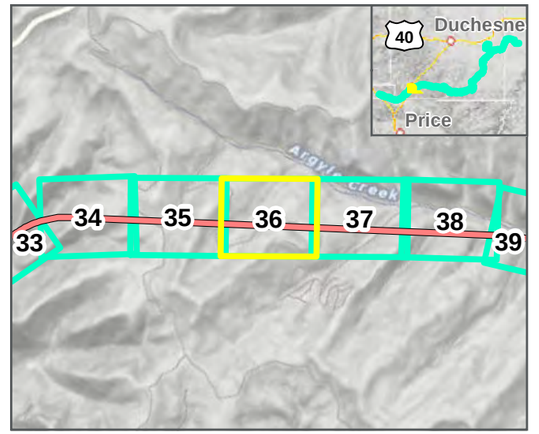
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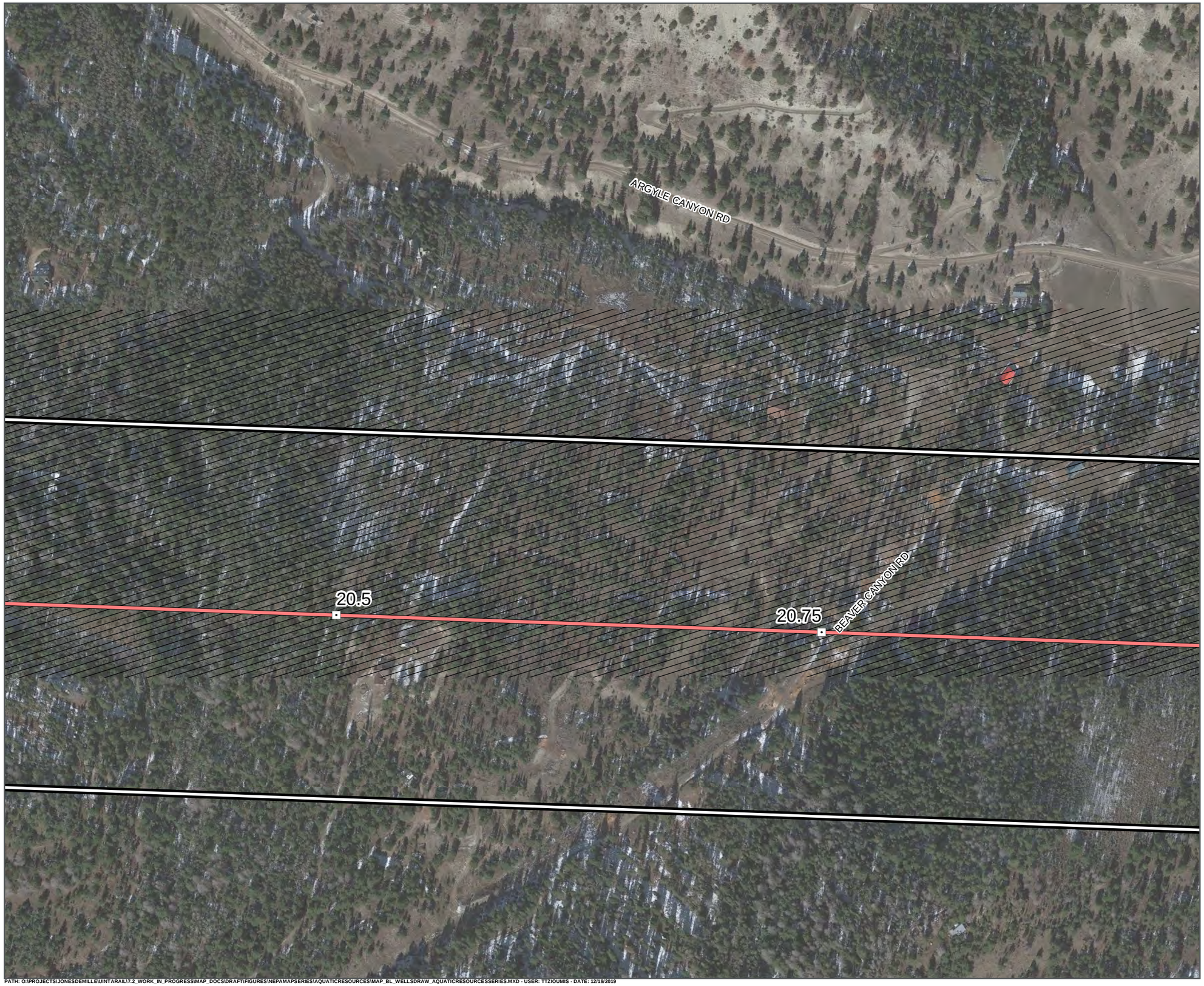
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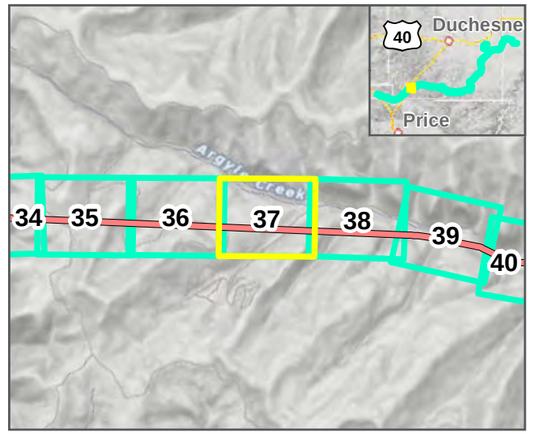
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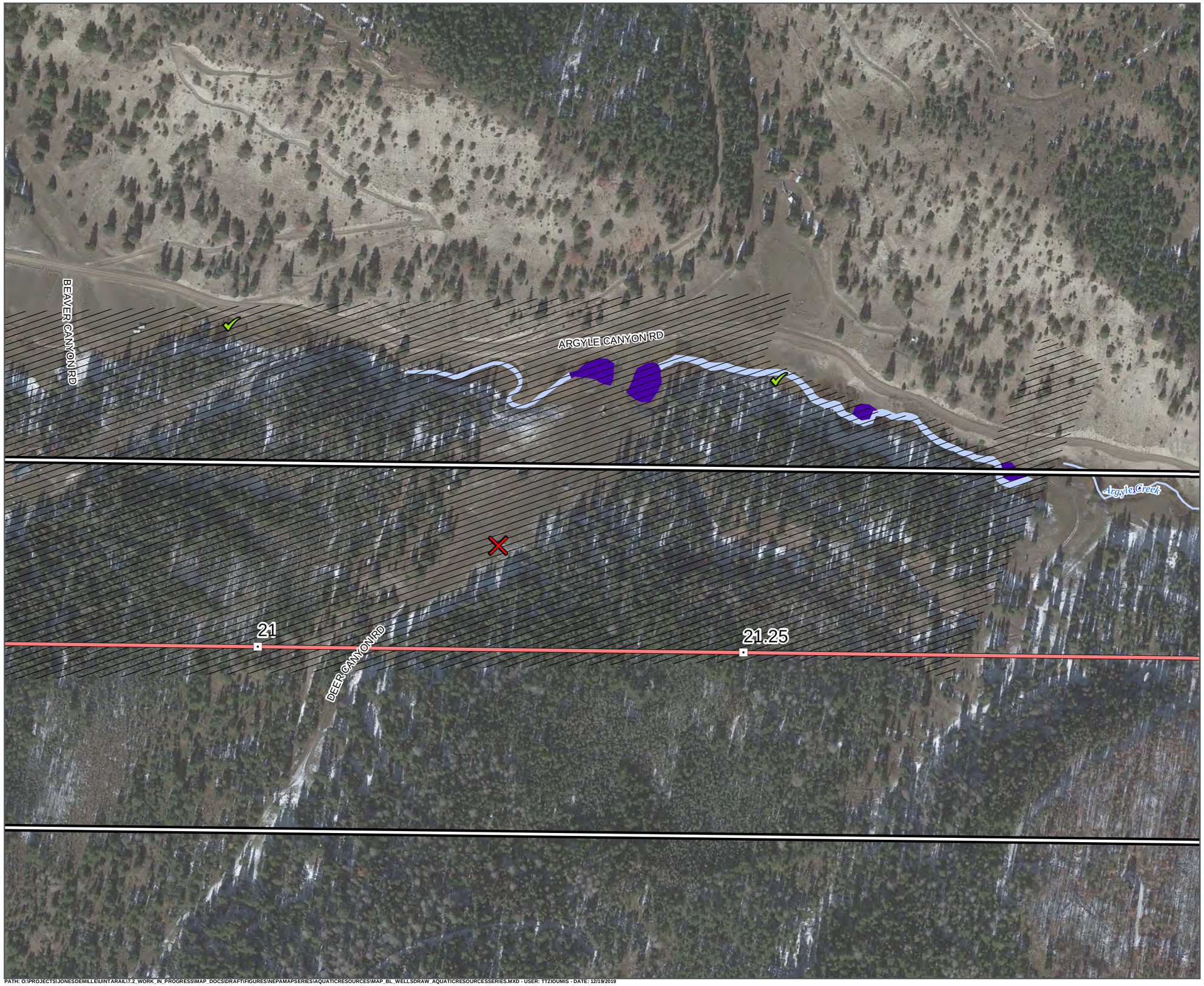
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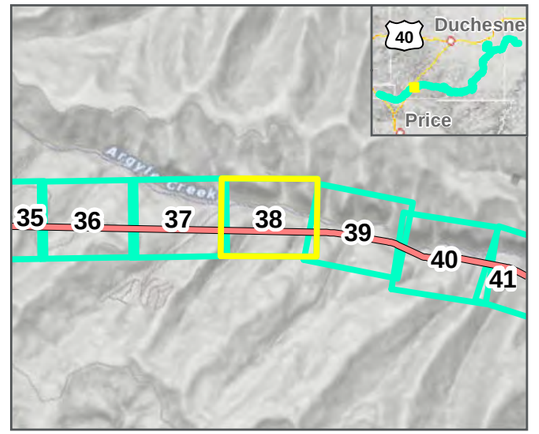
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DECEMBER 2019

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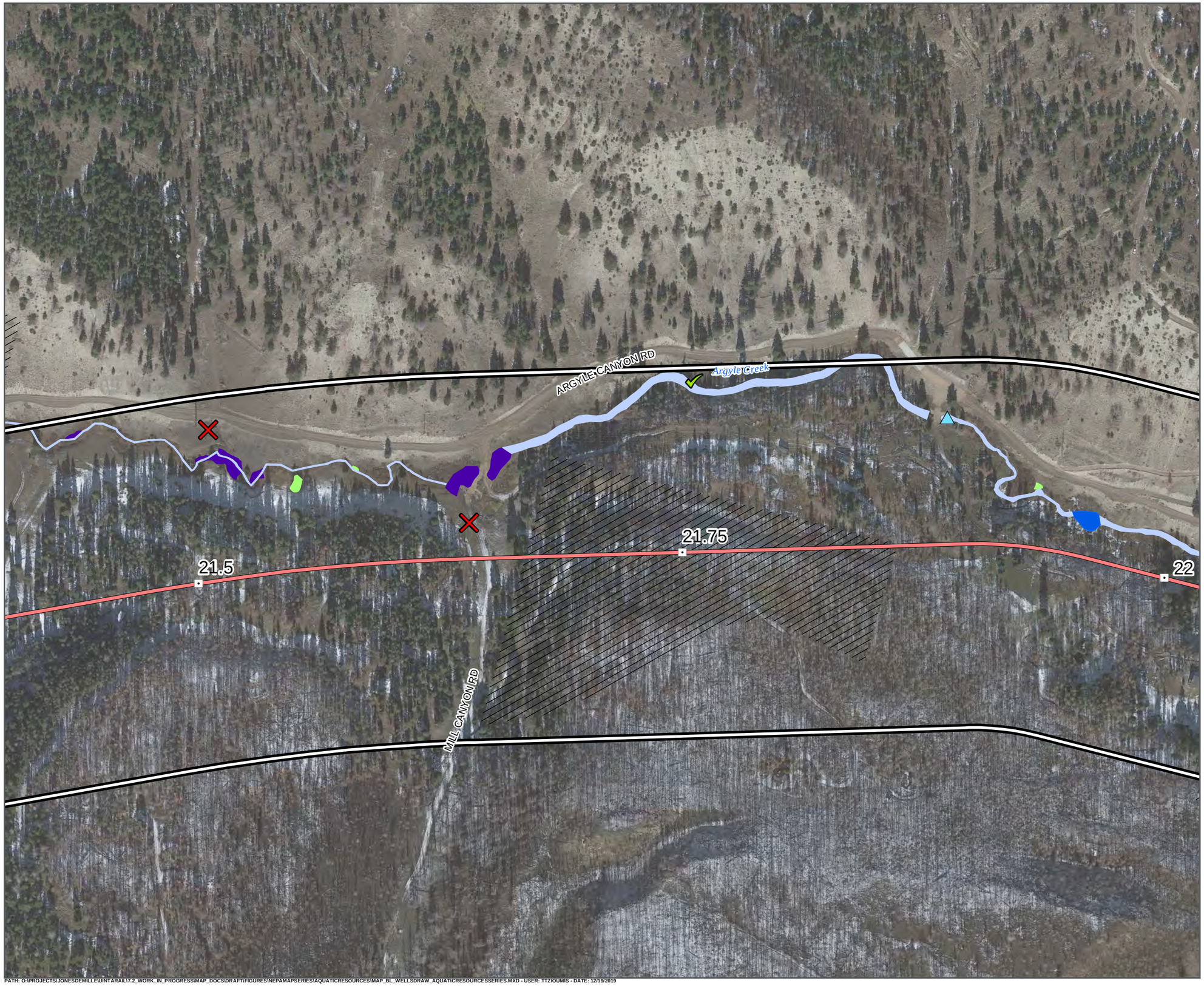
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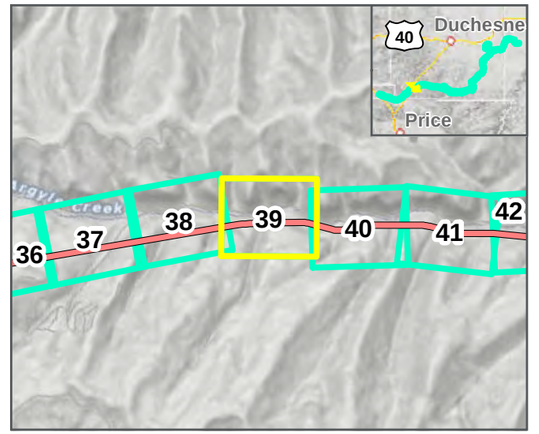
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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- Milepost
- Wells Draw Centerline
- Areas Not Surveyed (Data Digitized)
- In Point 2019
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- Shrub-Scrub
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- Perennial Stream
- Ephemeral/Intermittent Stream
- Ditch/Canal
- Study Area
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WELLS DRAW ALTERNATIVE: 11/22/2019

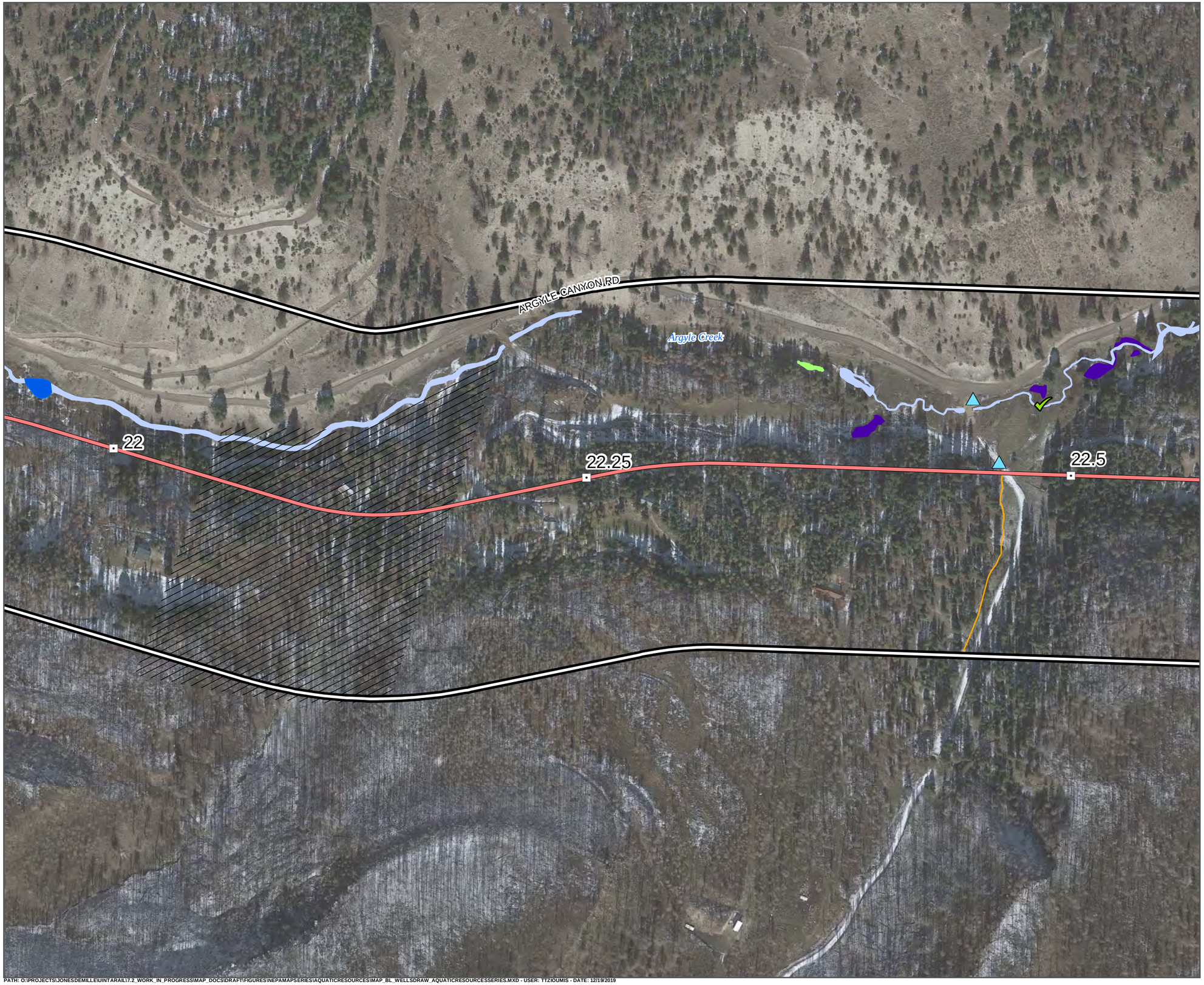
AQUATIC RESOURCES
DECEMBER 2019

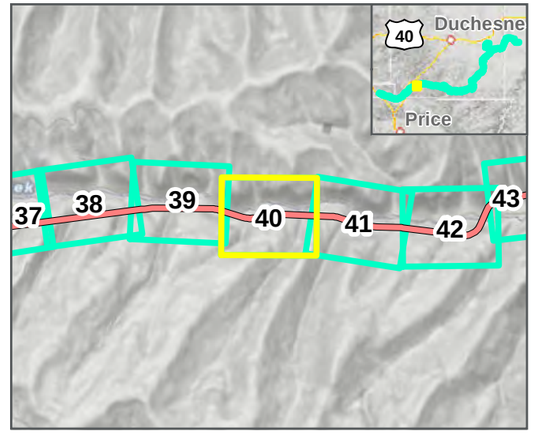
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AQUATIC RESOURCES
DECEMBER 2019

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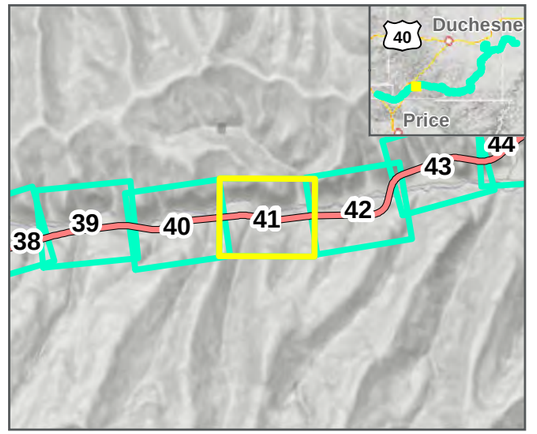
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DECEMBER 2019

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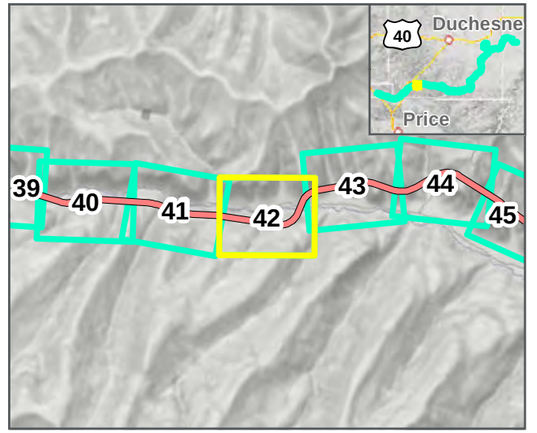
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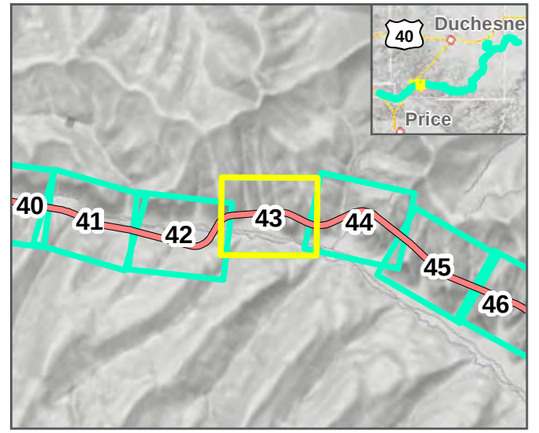
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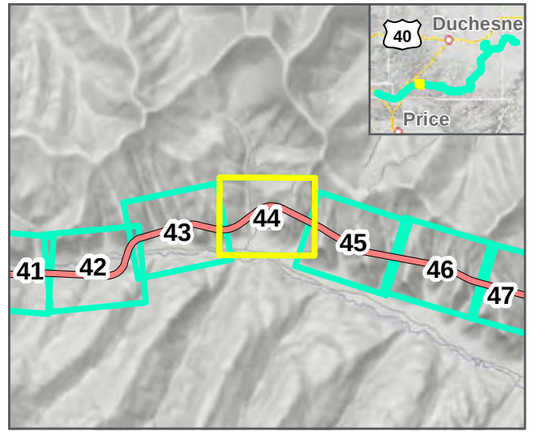
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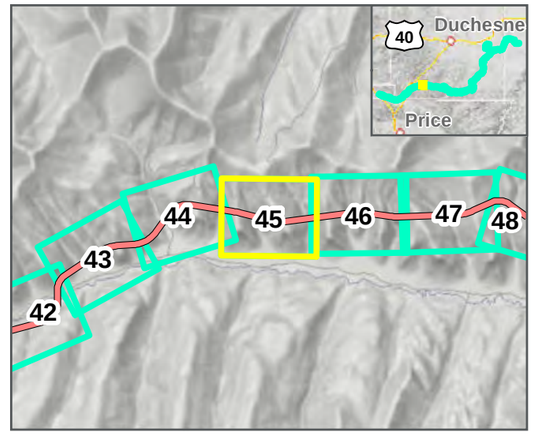
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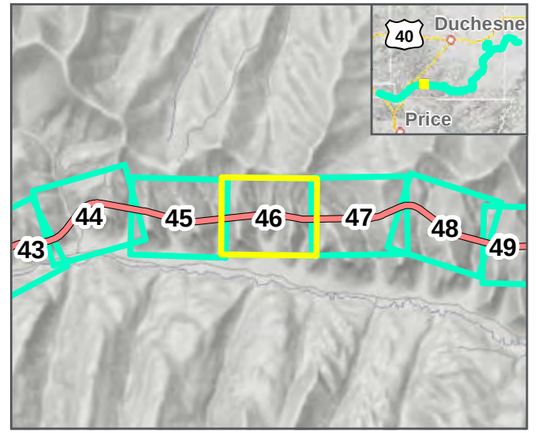
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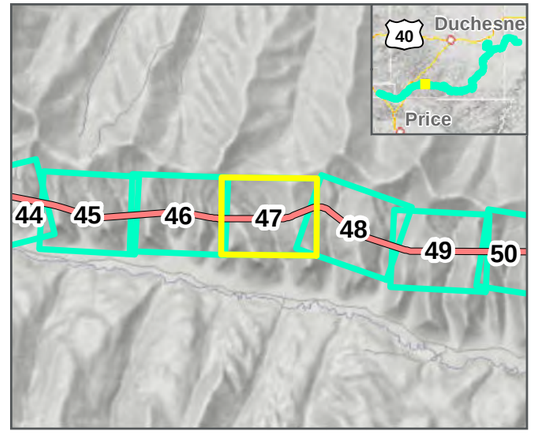
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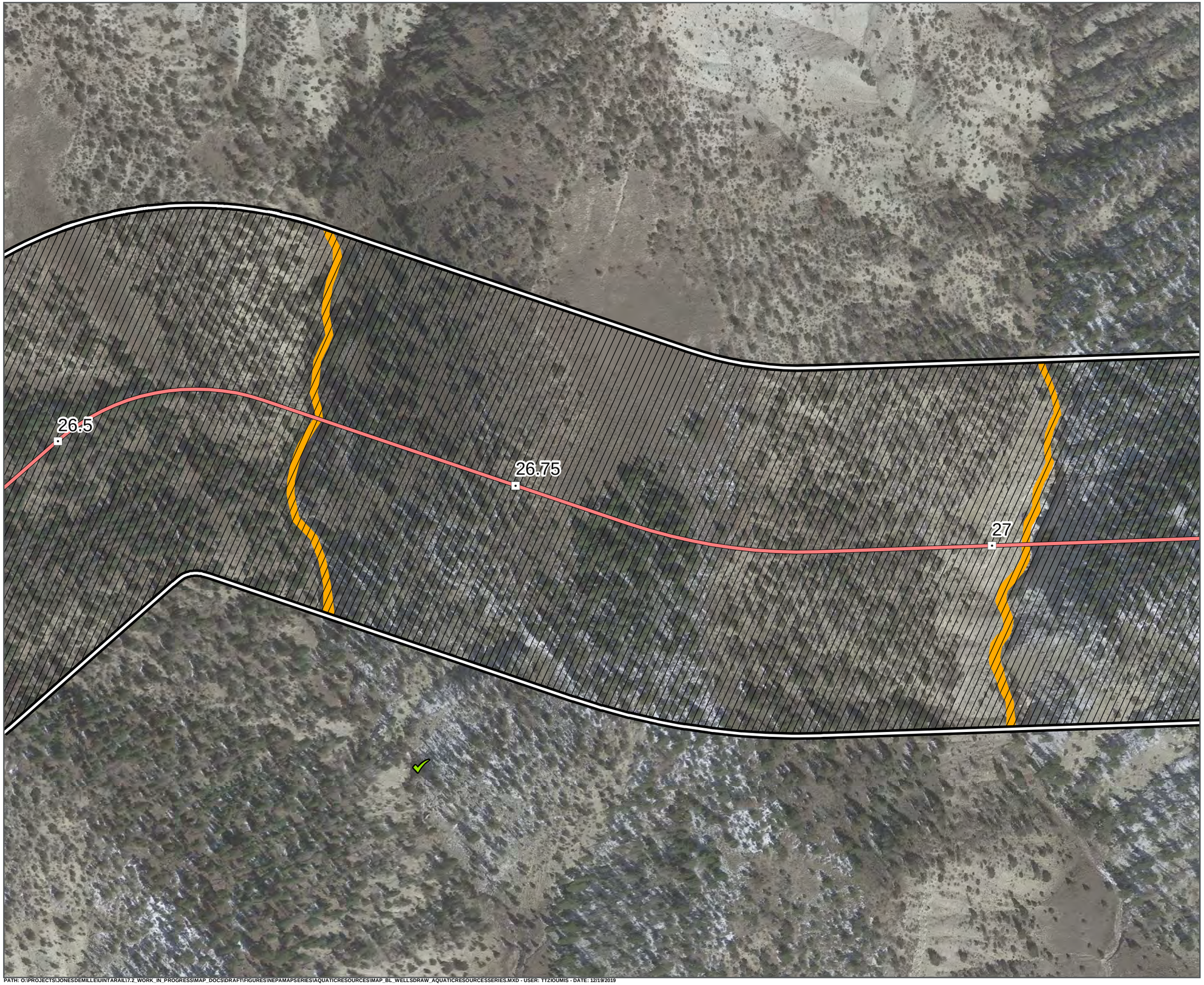
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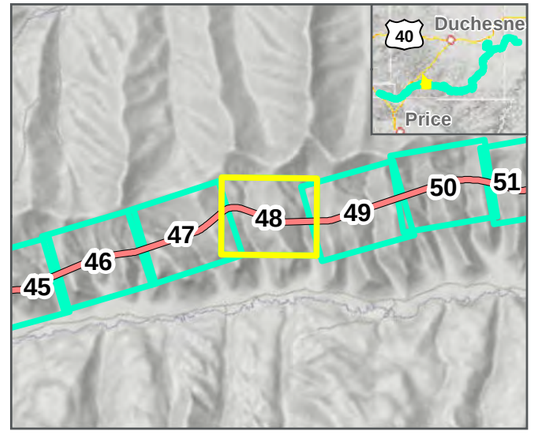
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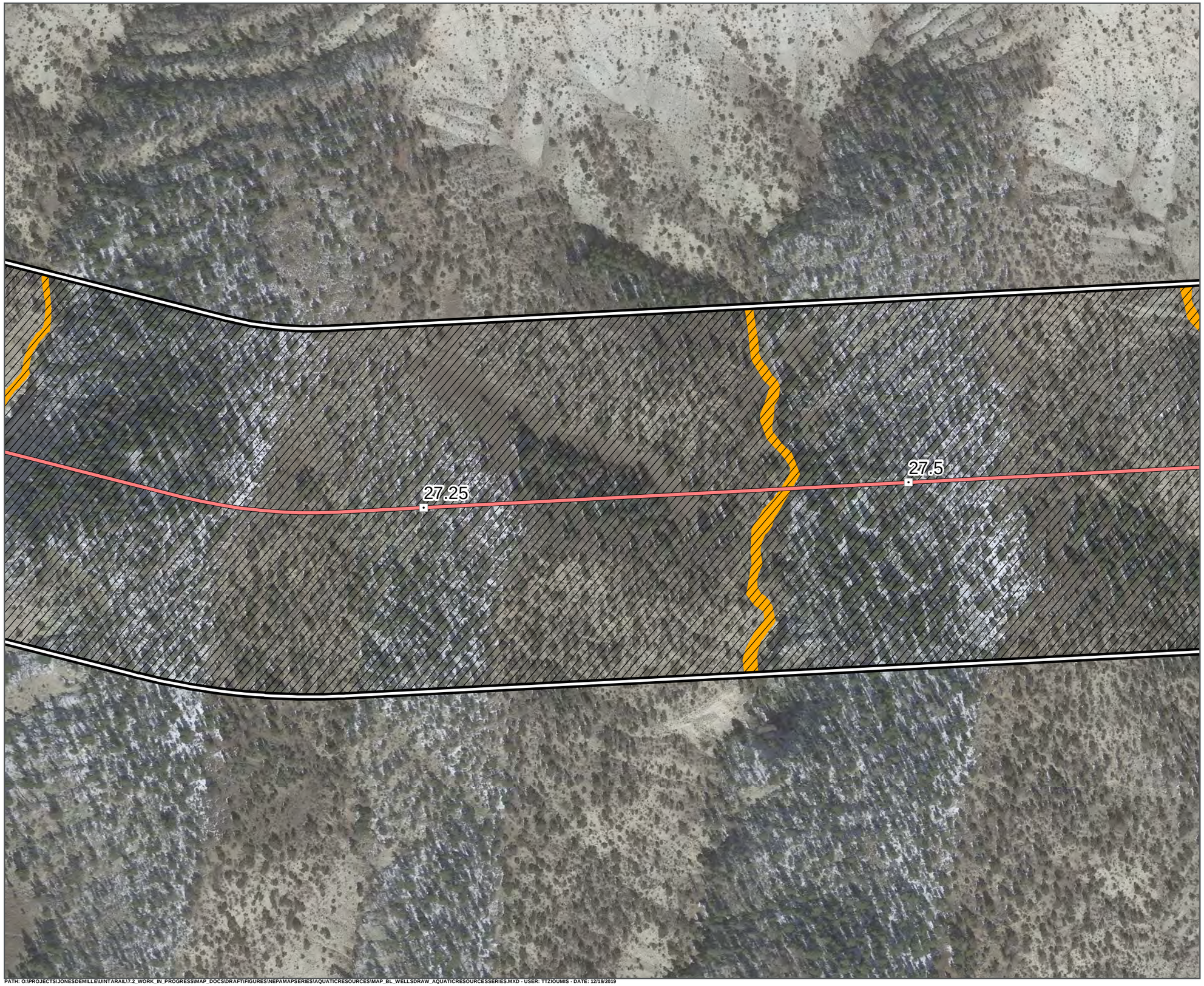
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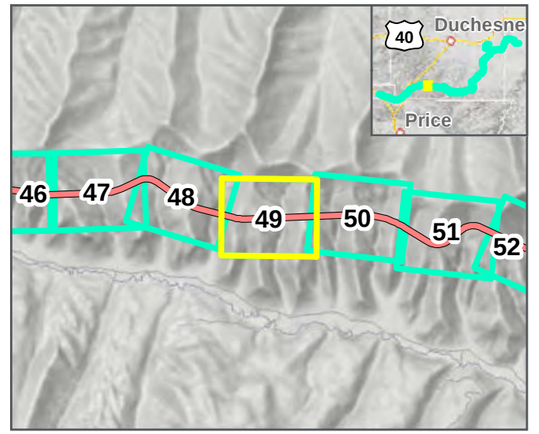
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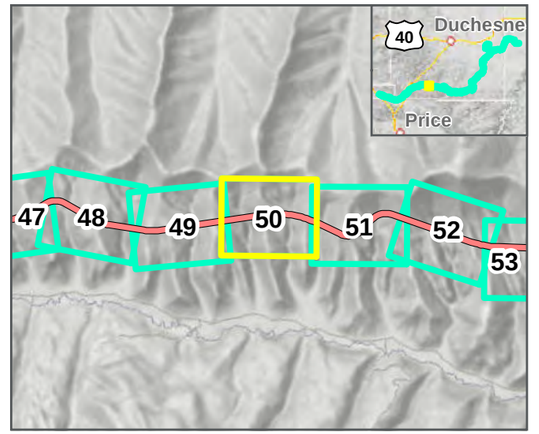
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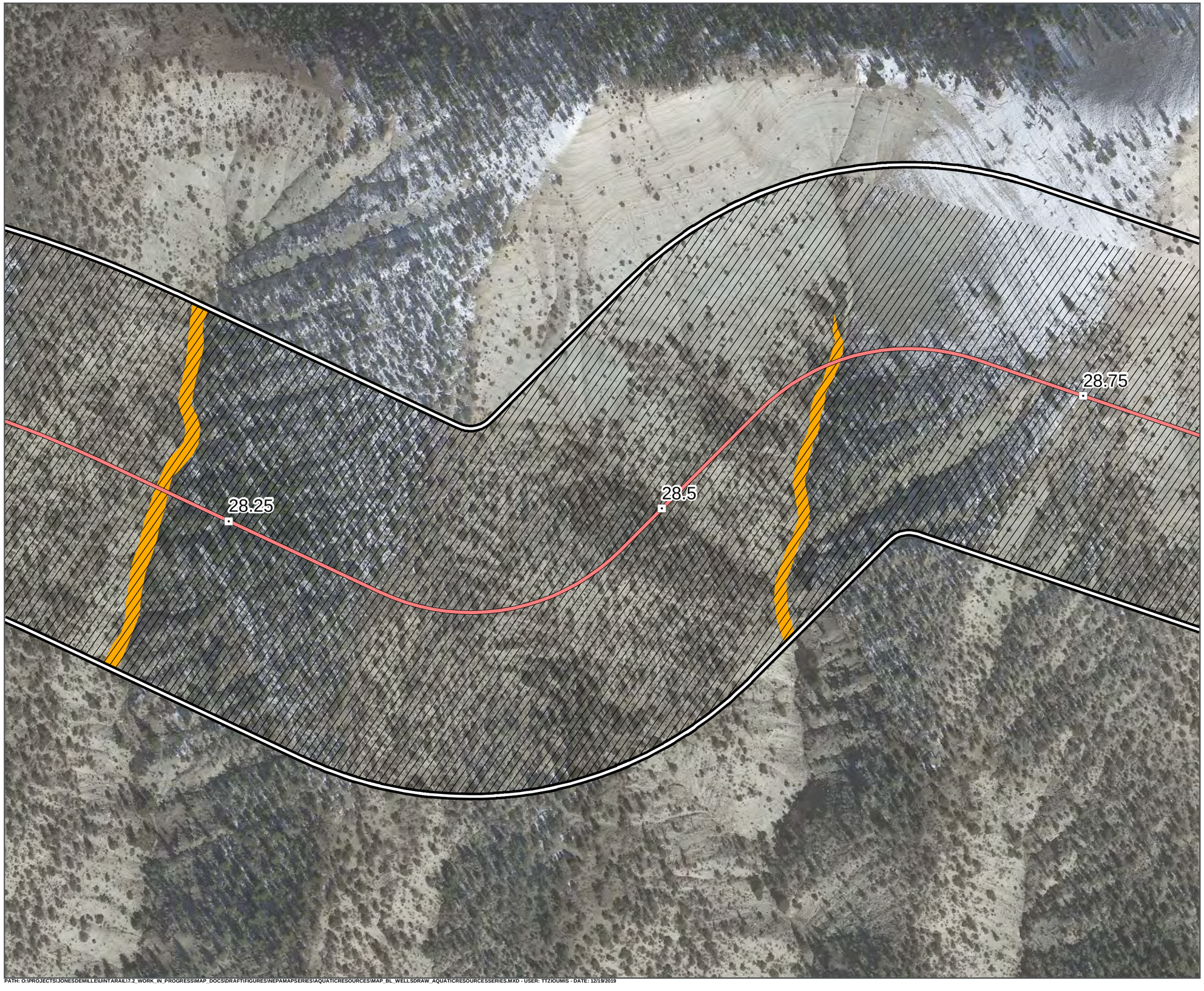
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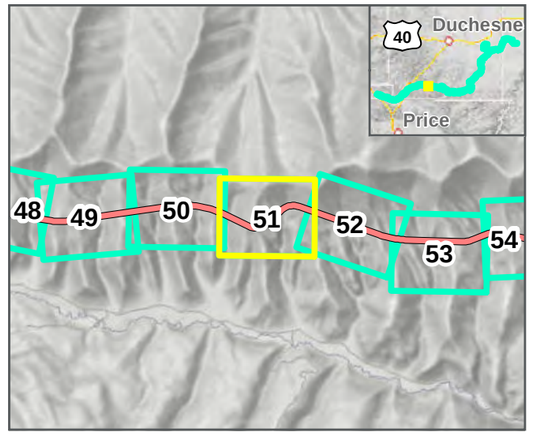
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Seven County Infrastructure Coalition

HDR

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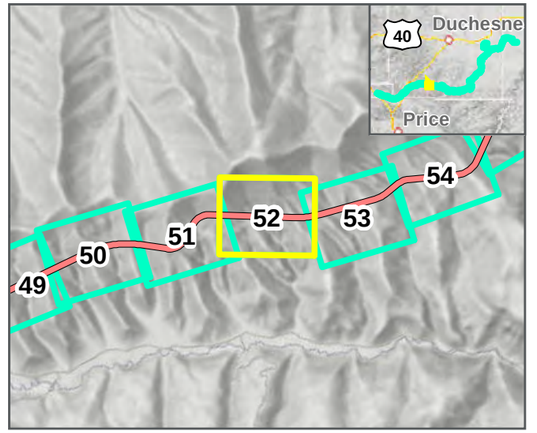
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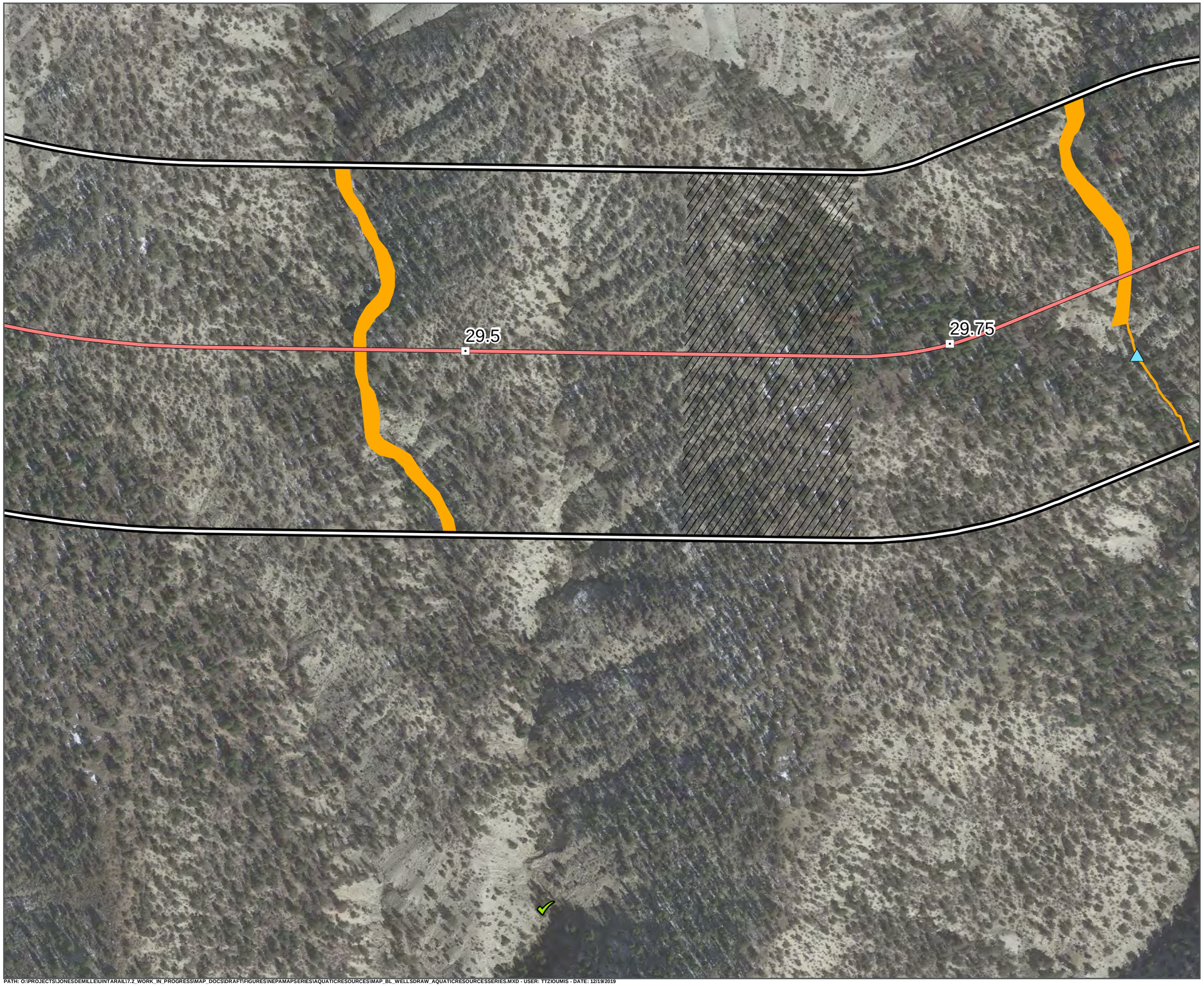
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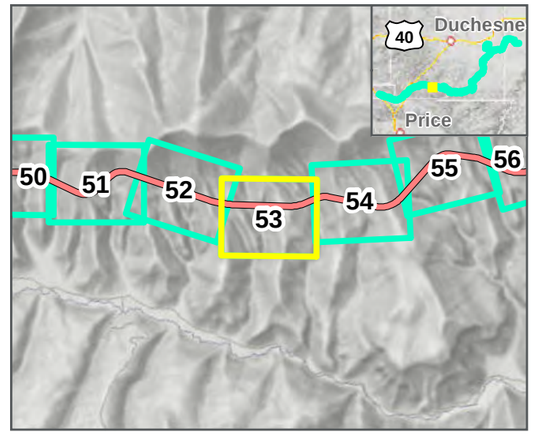
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WELLS DRAW ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

N

0 125 250 Feet

1 inch = 250 Feet

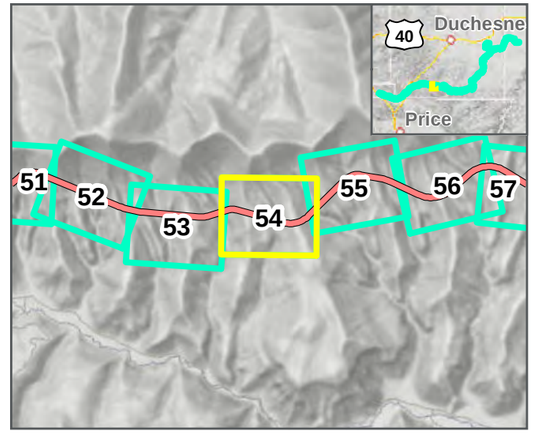
DATA SOURCES:
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COODINATE SYSTEM:
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SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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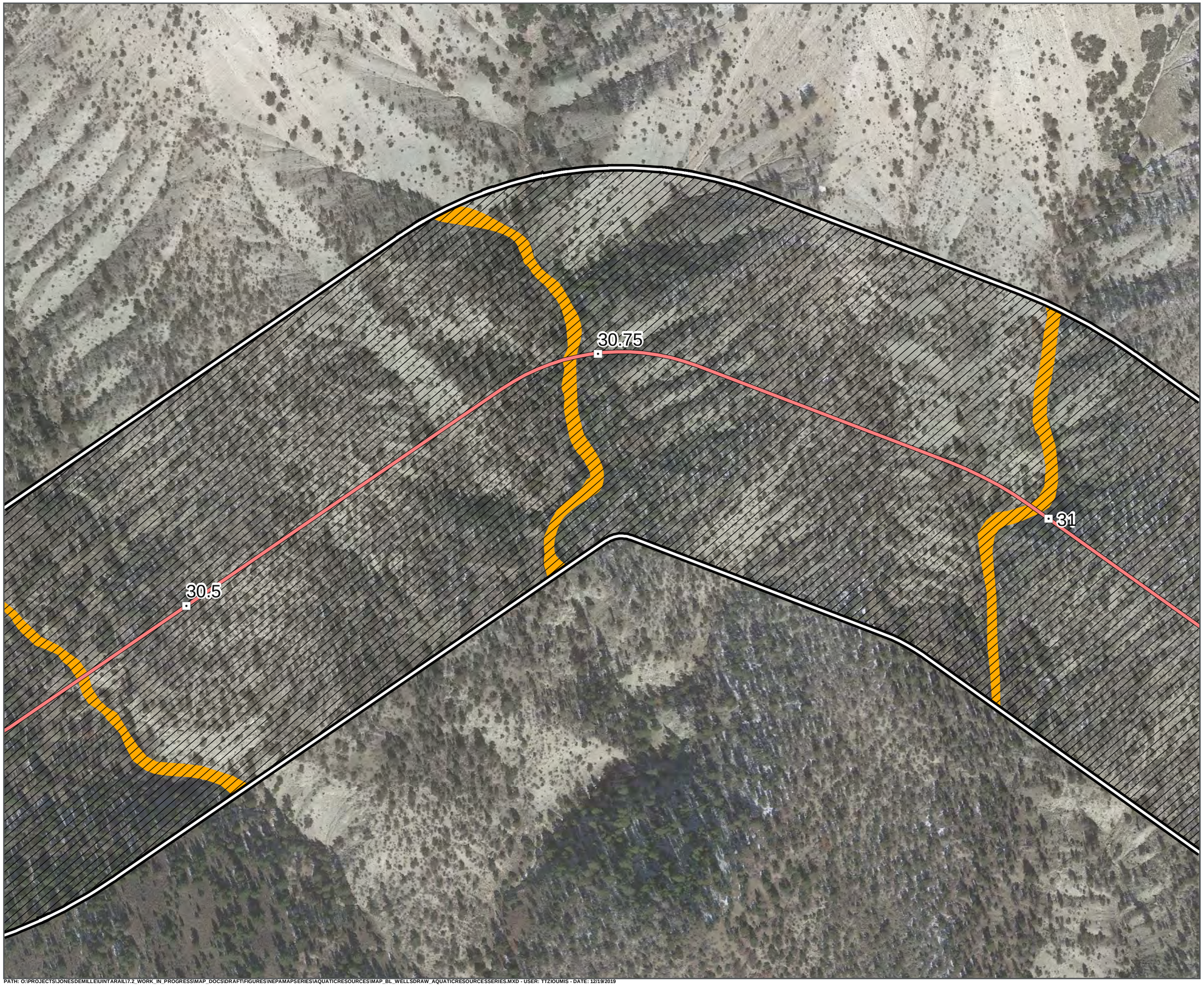
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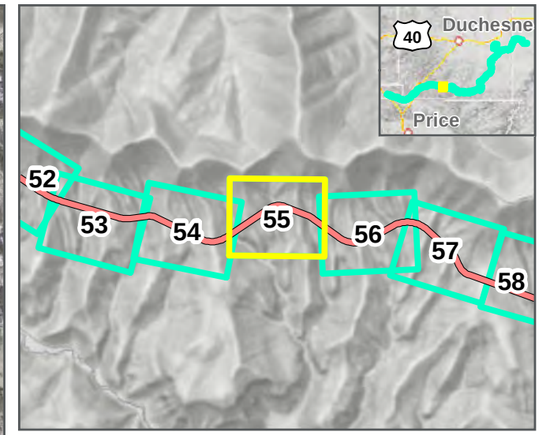
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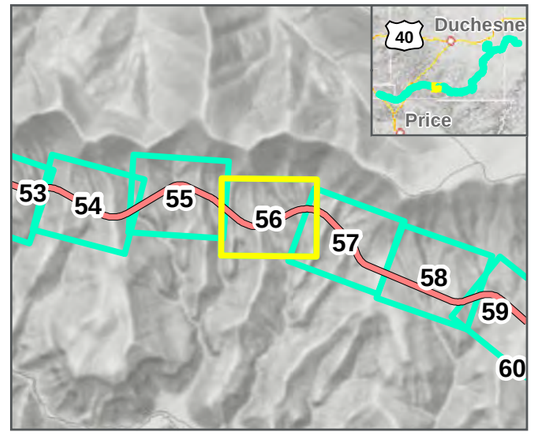
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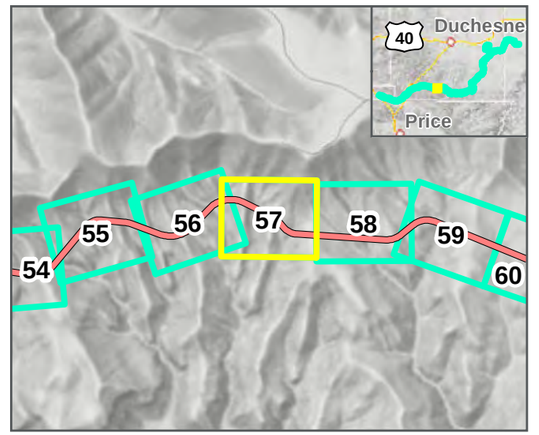
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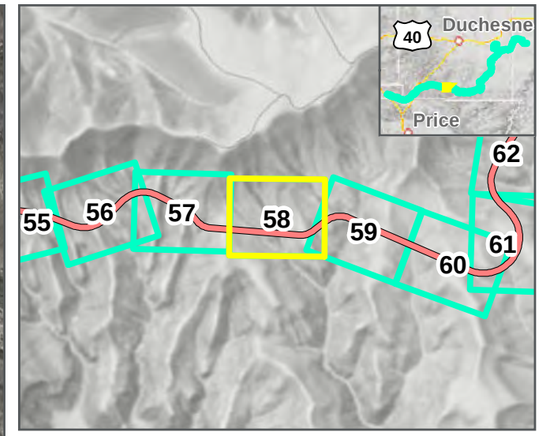
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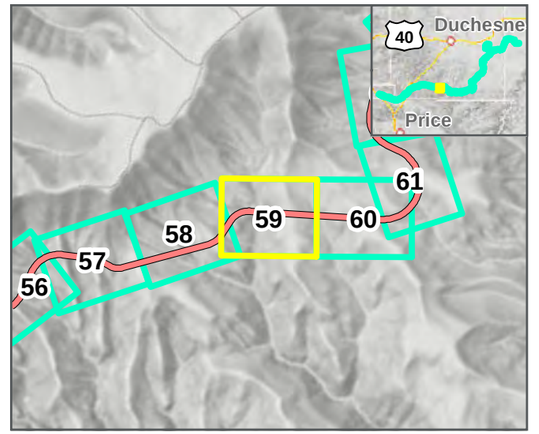
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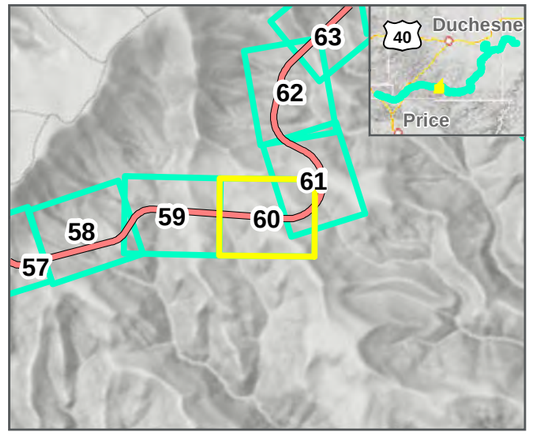
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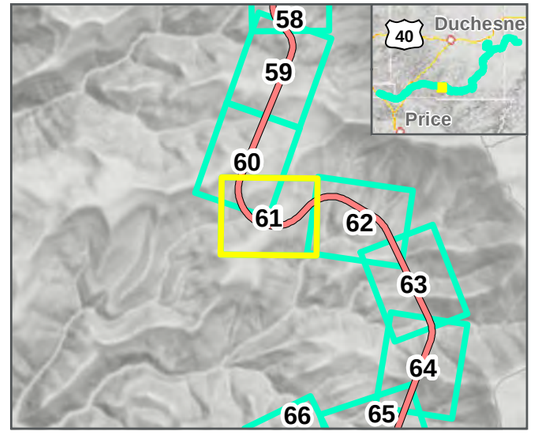
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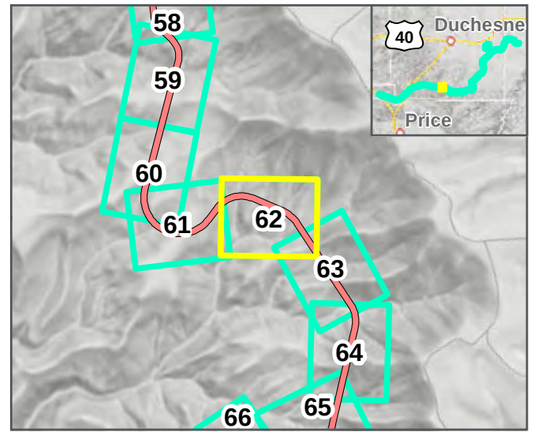
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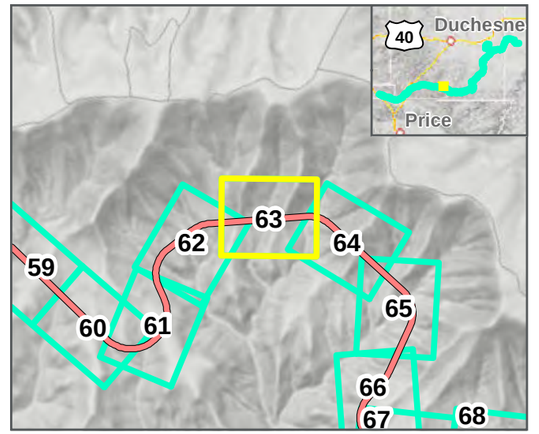
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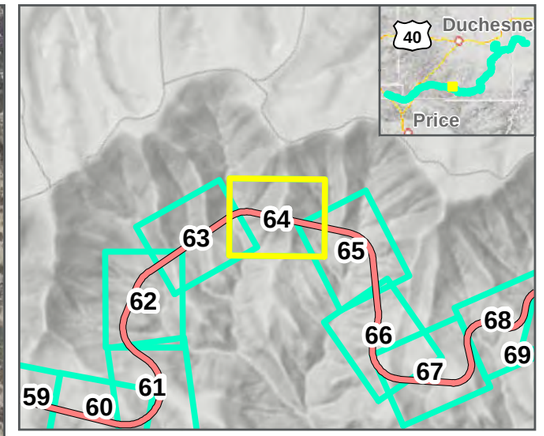
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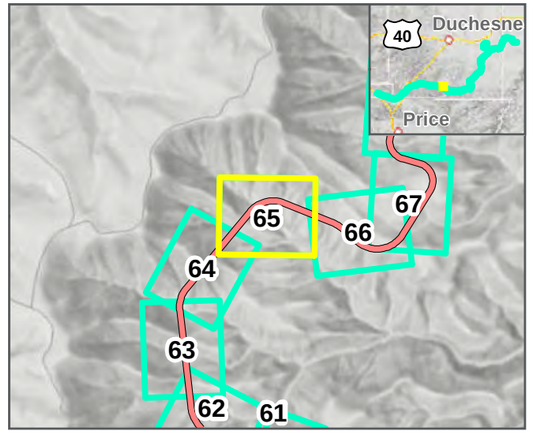
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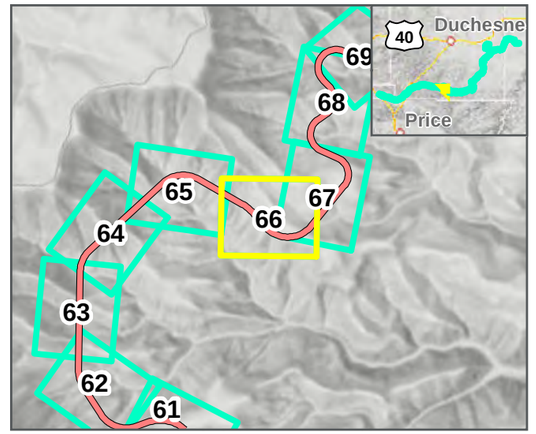
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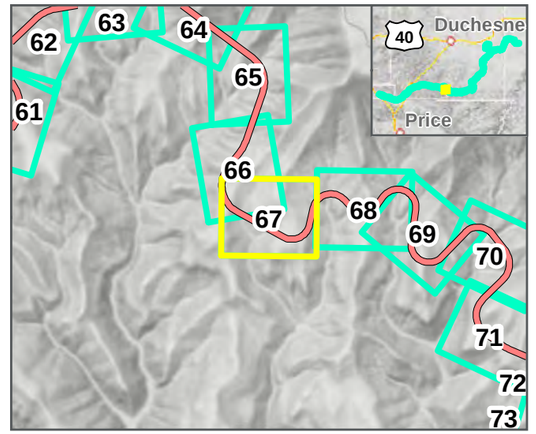
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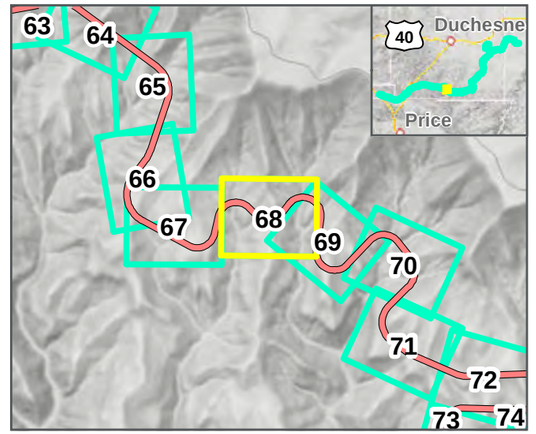
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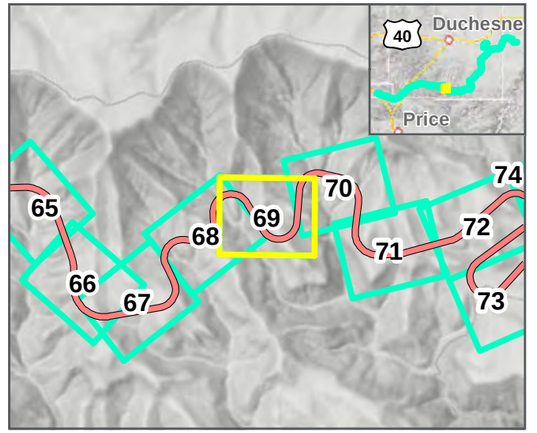
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0 125 250 Feet

1 inch = 250 Feet

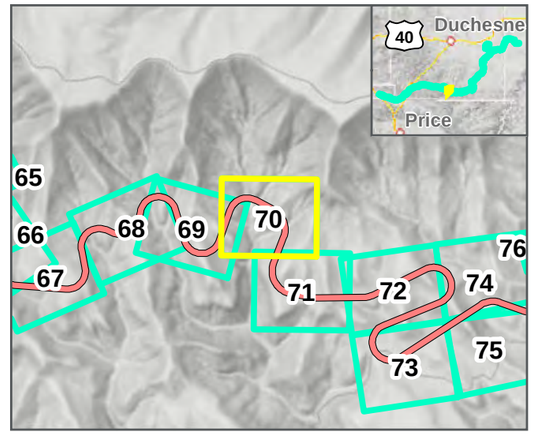
DATA SOURCES:
HDR Field Work & Engineering 2019
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COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

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- Milepost
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WELLS DRAW ALTERNATIVE: 11/22/2019

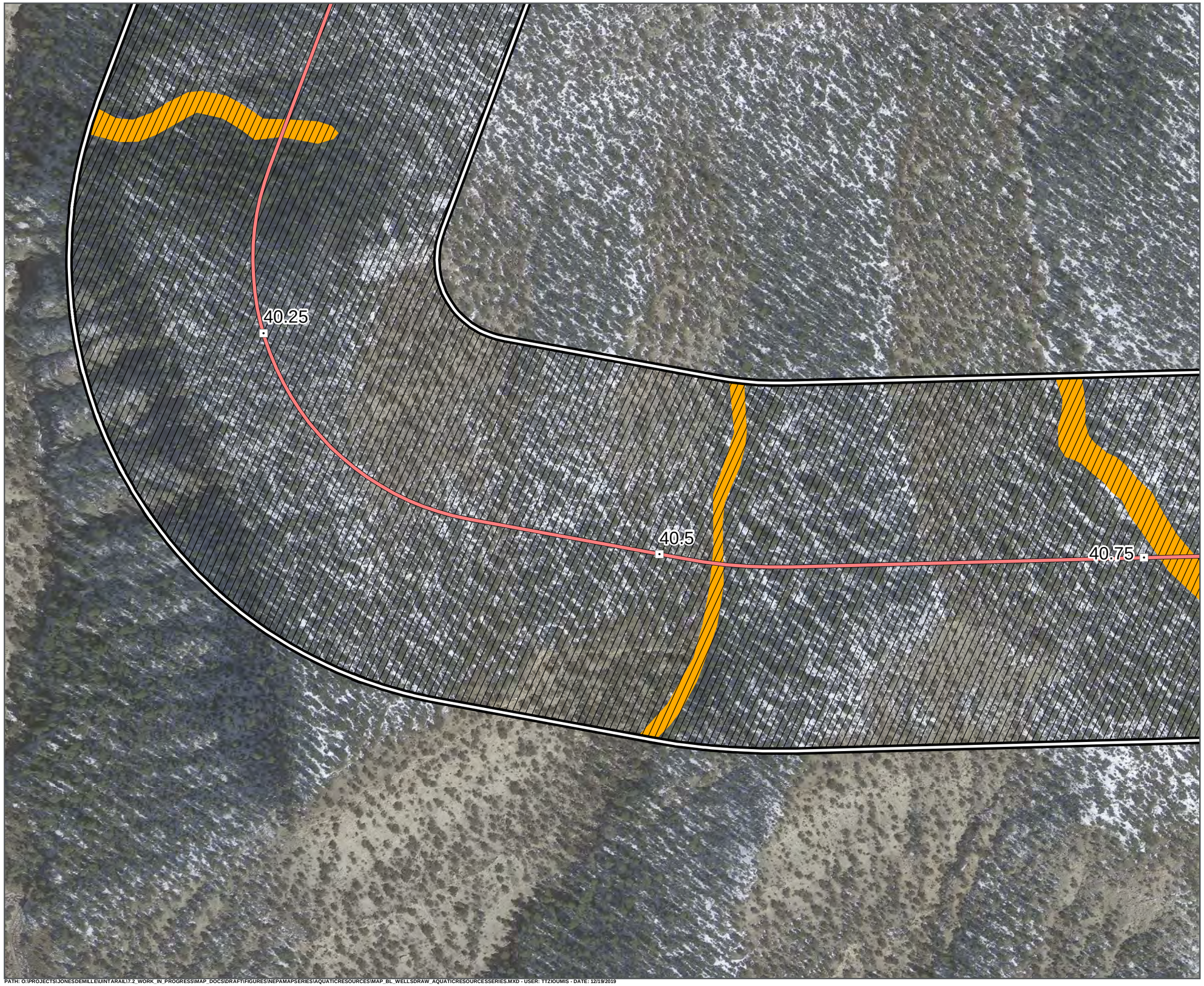
AQUATIC RESOURCES
DECEMBER 2019

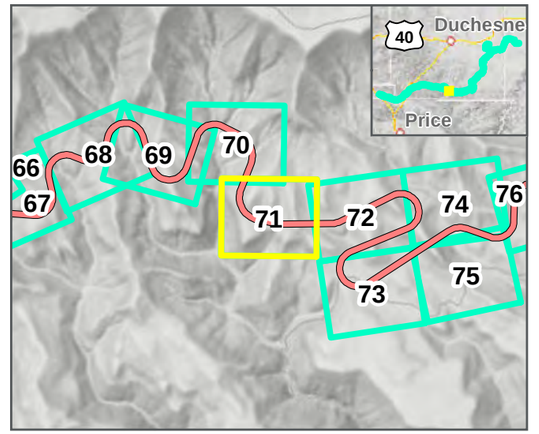
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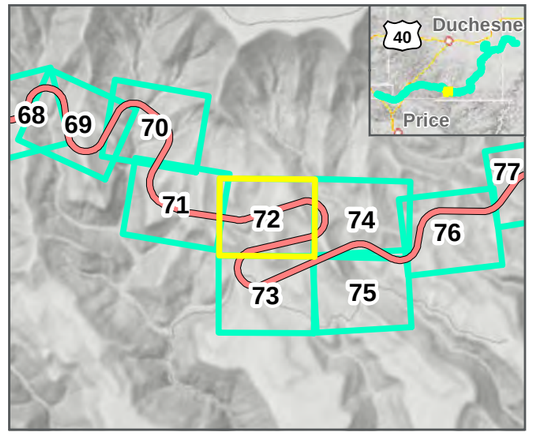
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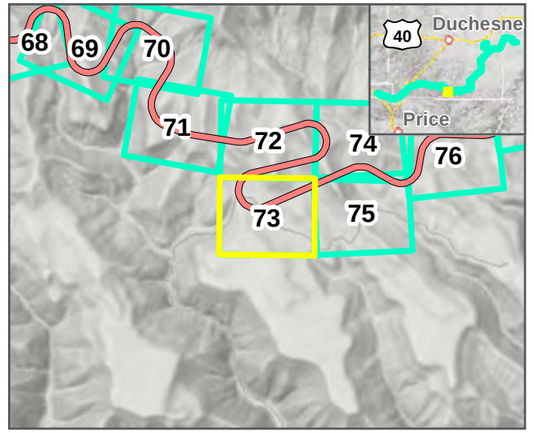
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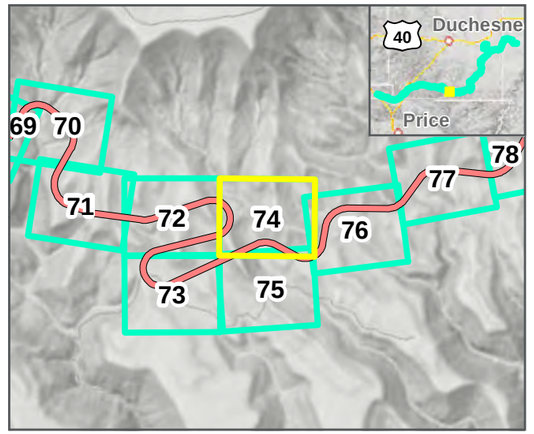
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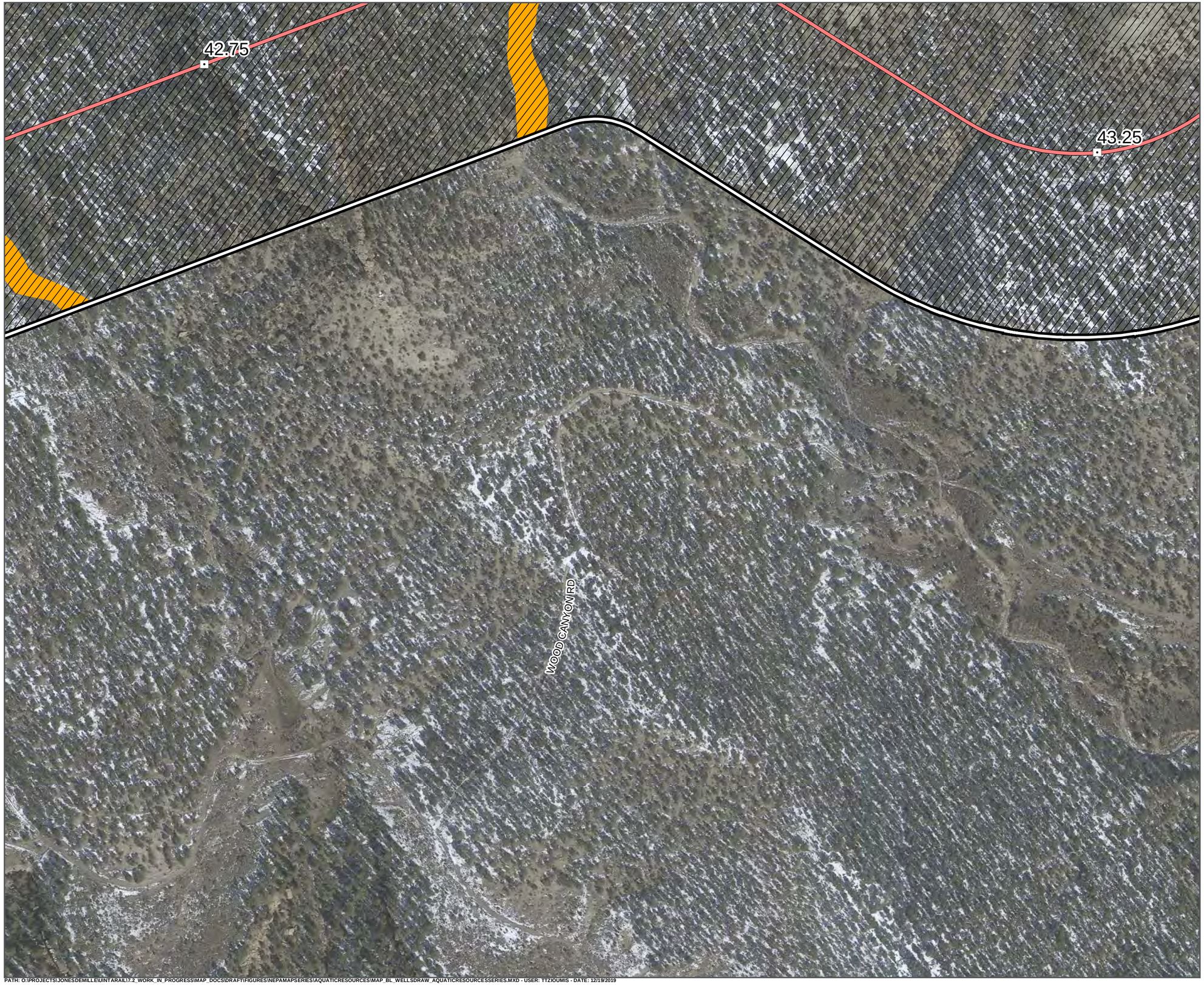
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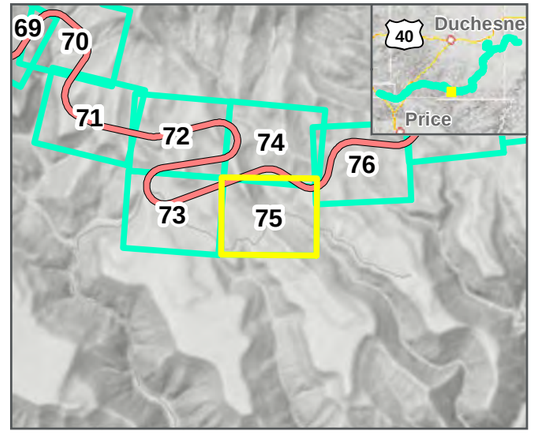
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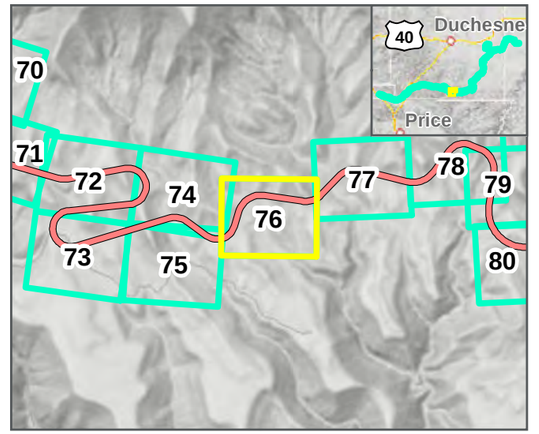
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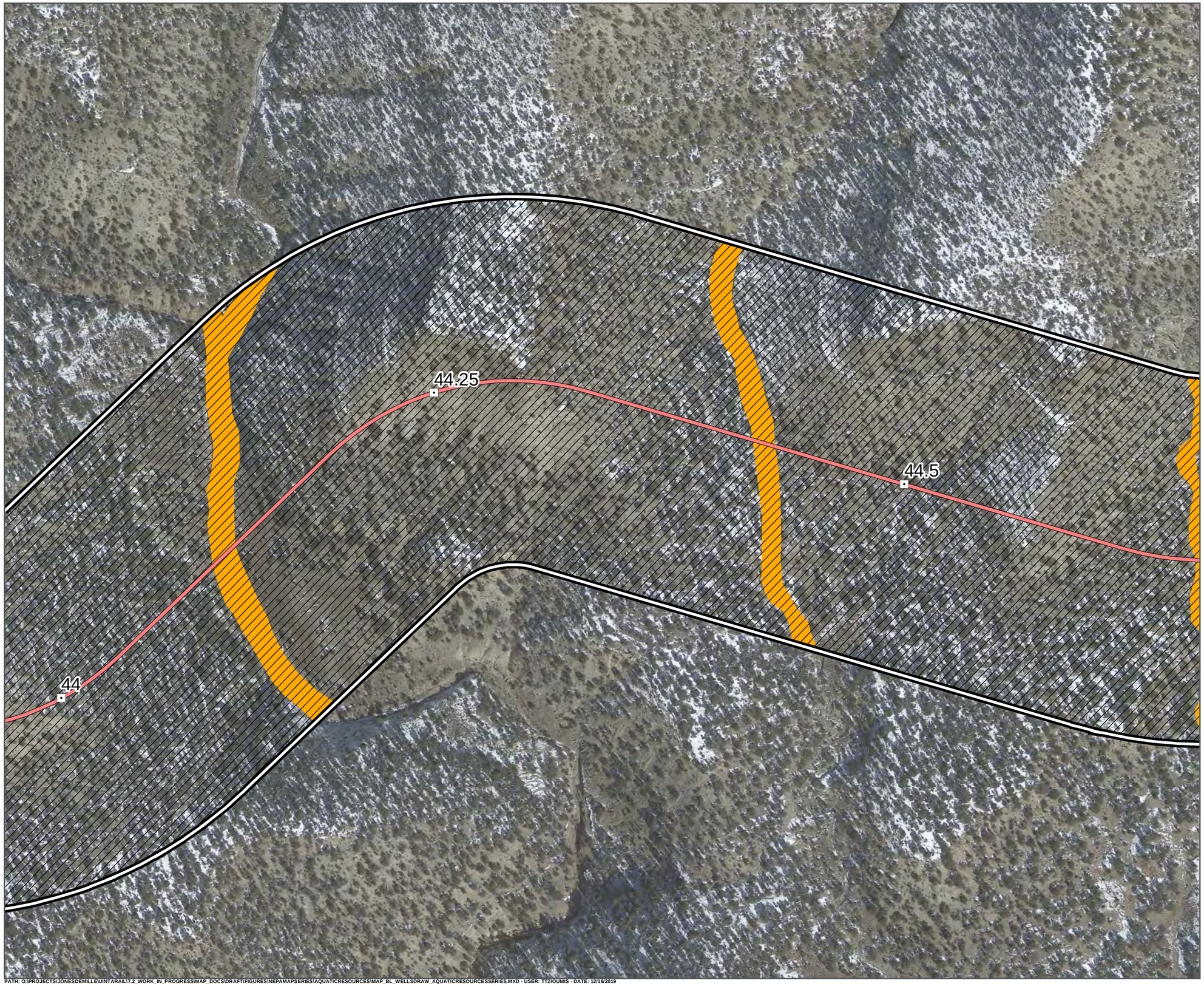
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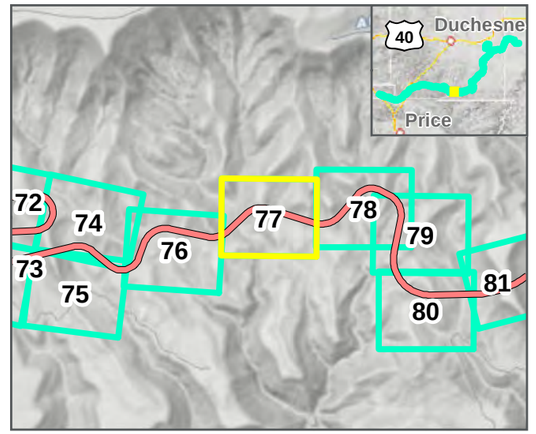
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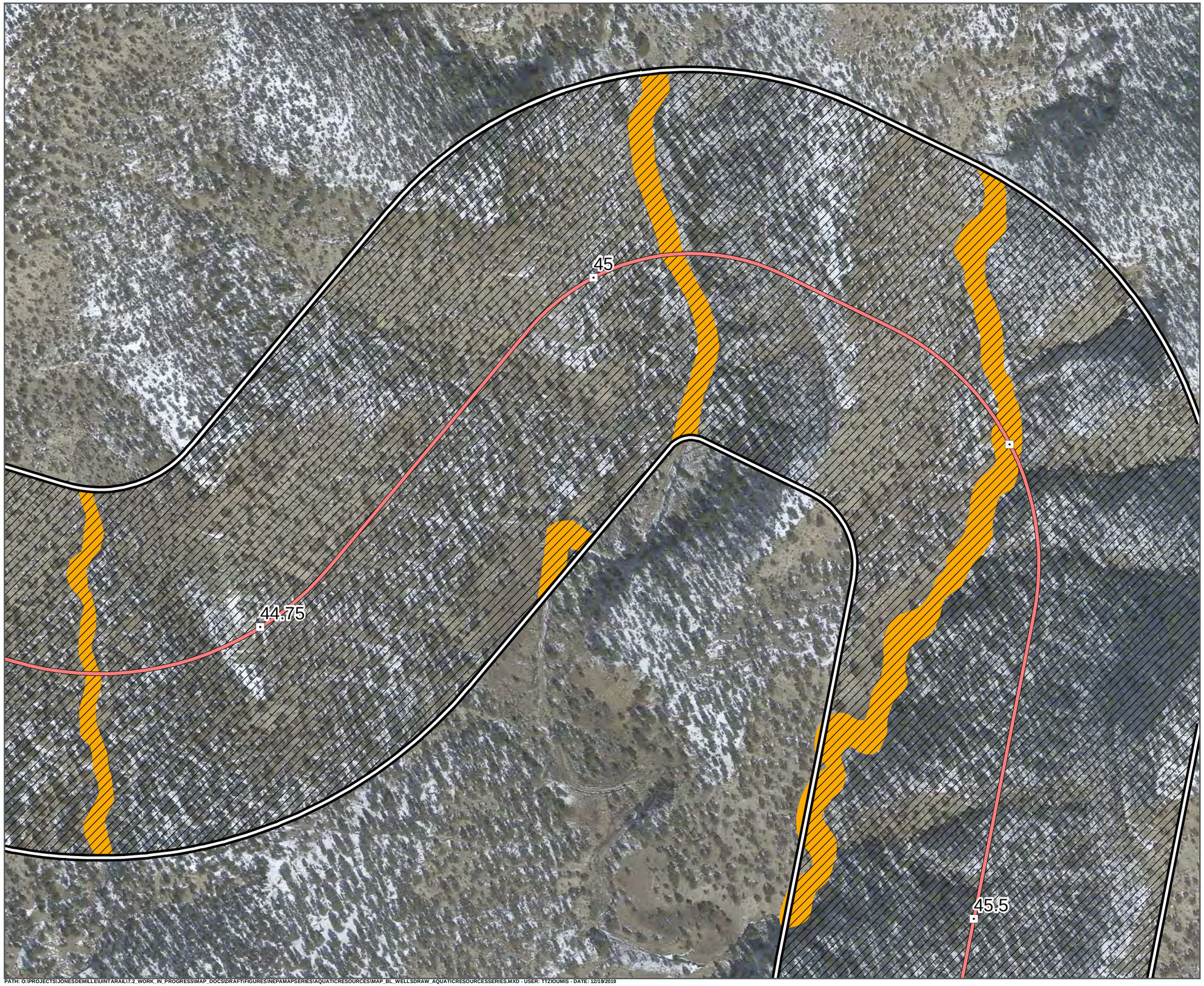
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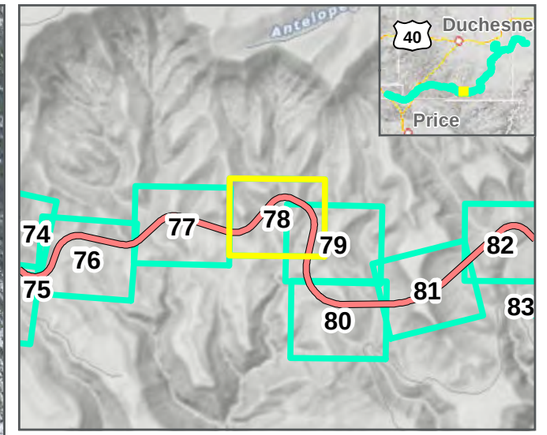
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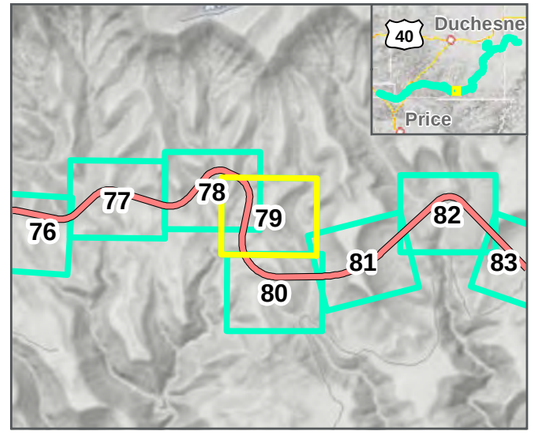
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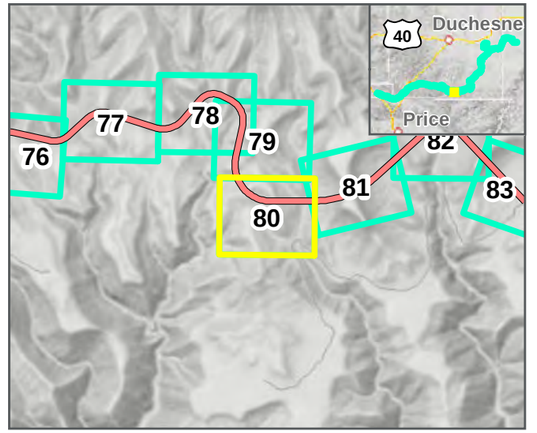
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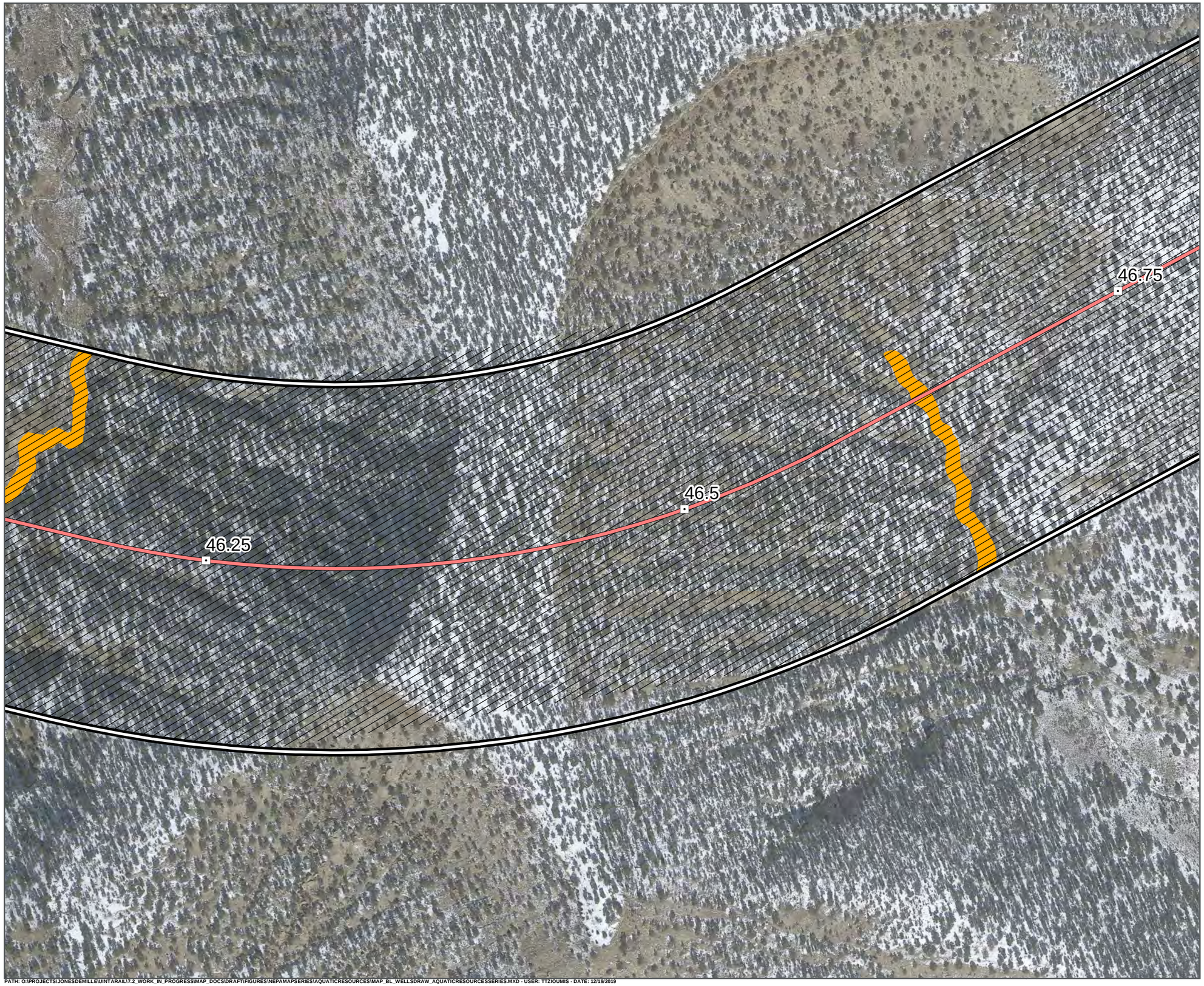
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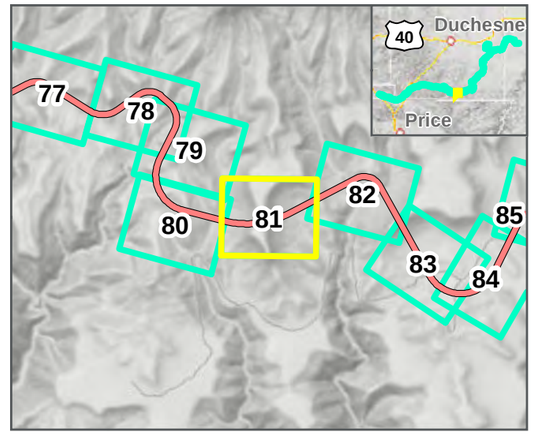
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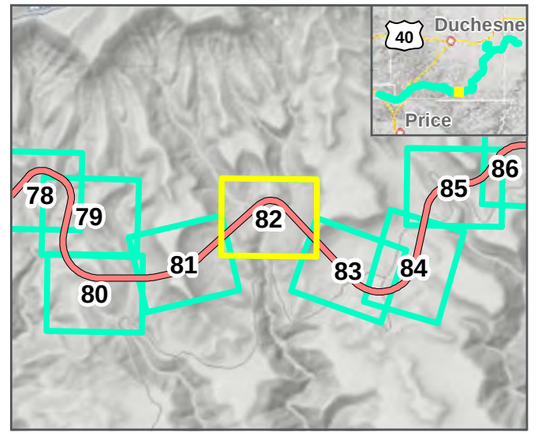
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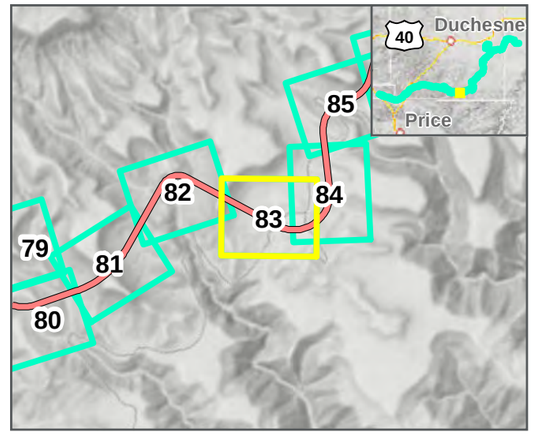
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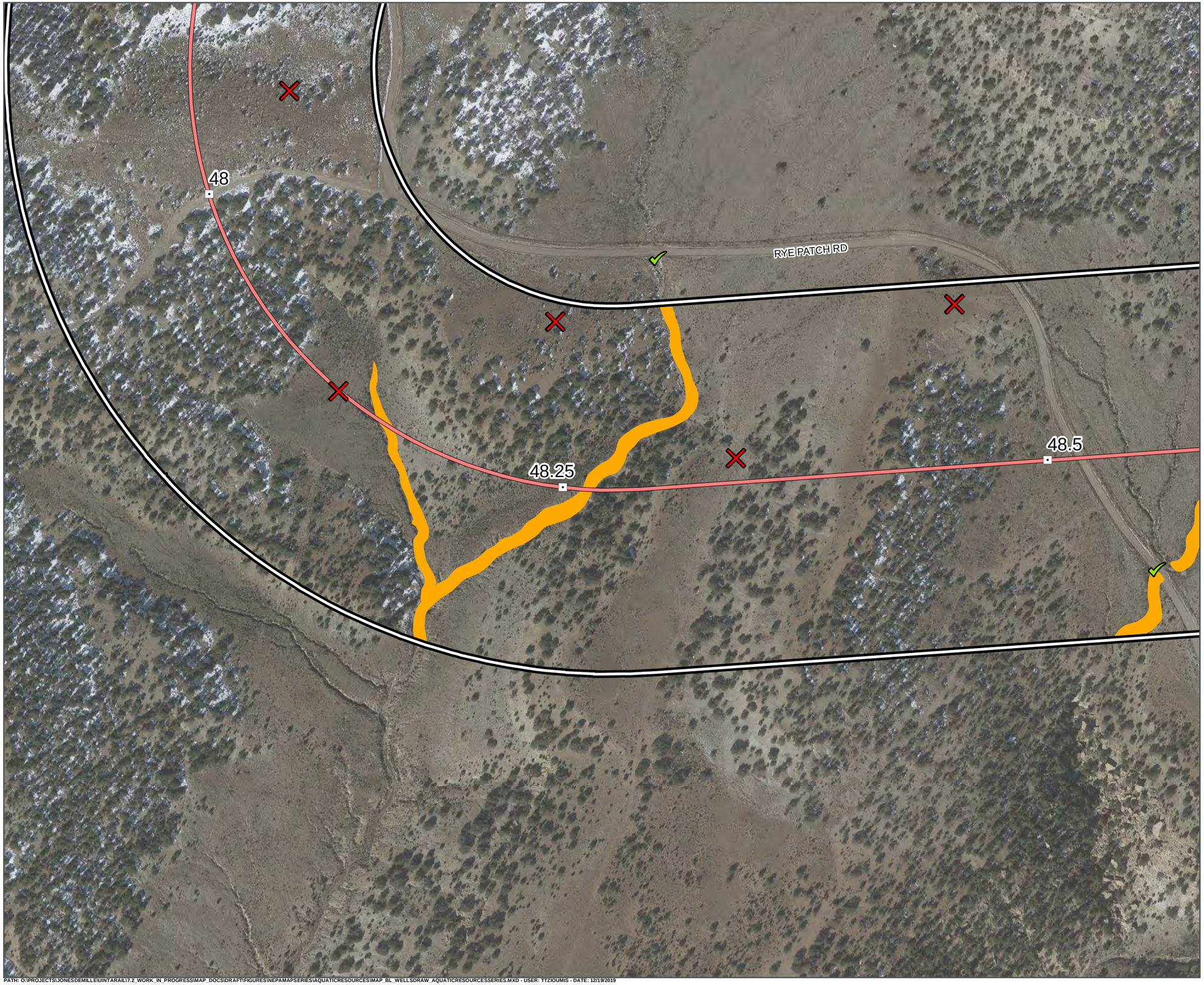
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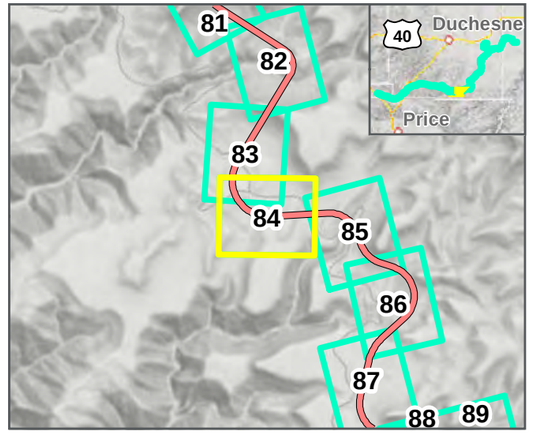
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WELLS DRAW ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

N

0 125 250 Feet

1 inch = 250 Feet

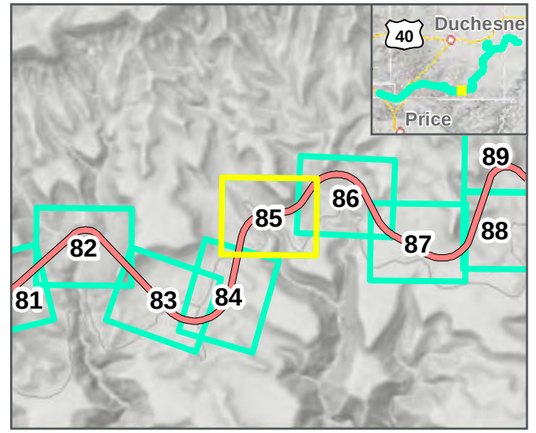
DATA SOURCES:
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COODINATE SYSTEM:
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SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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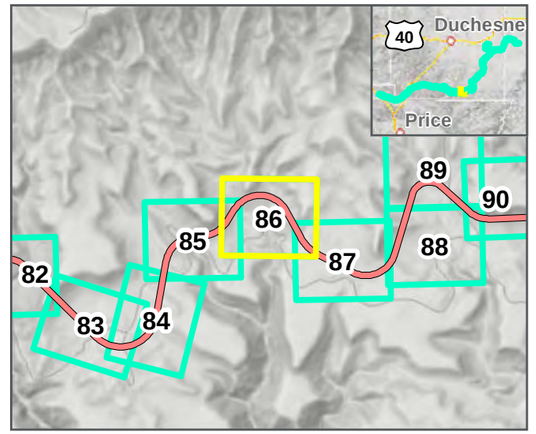
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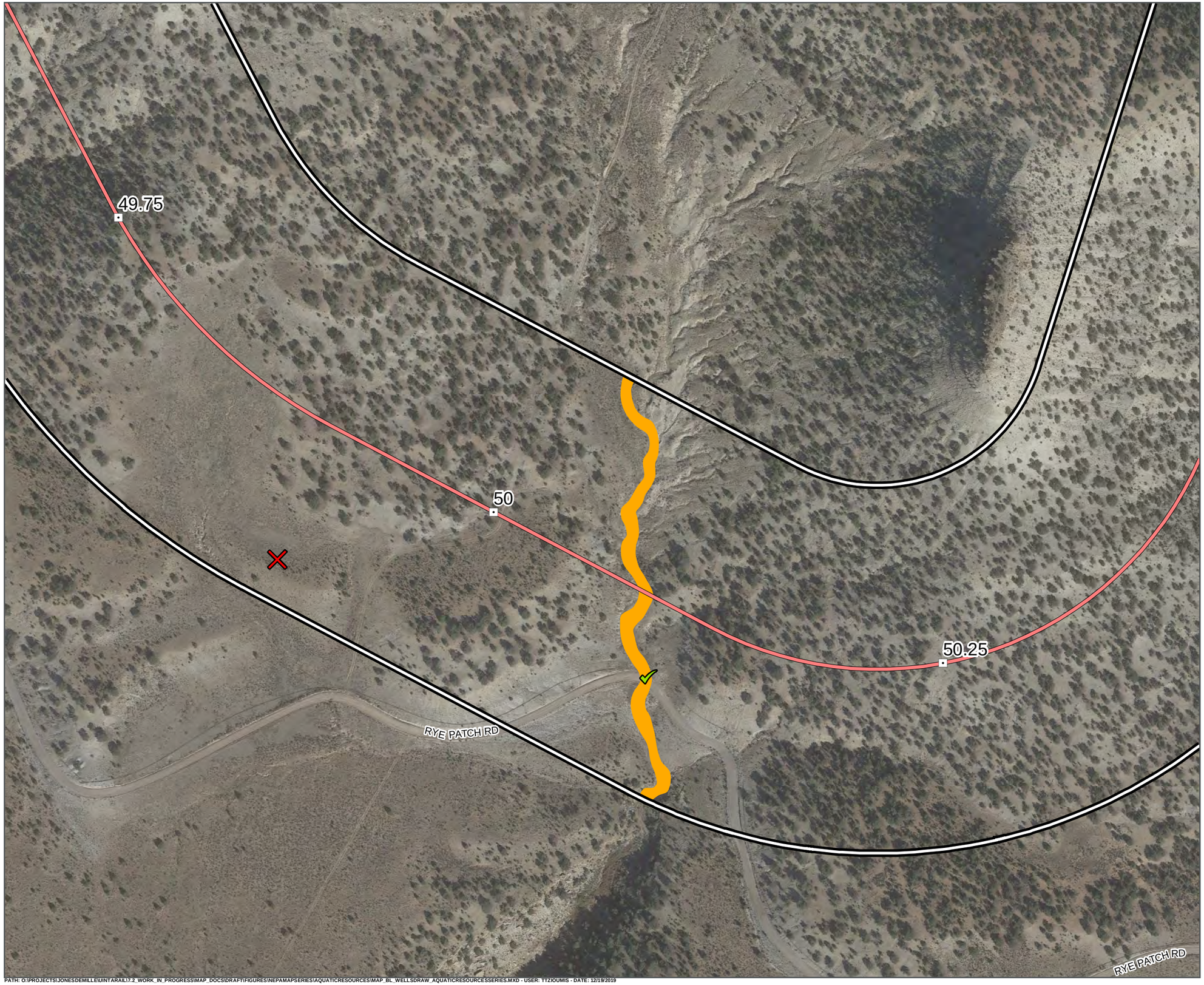
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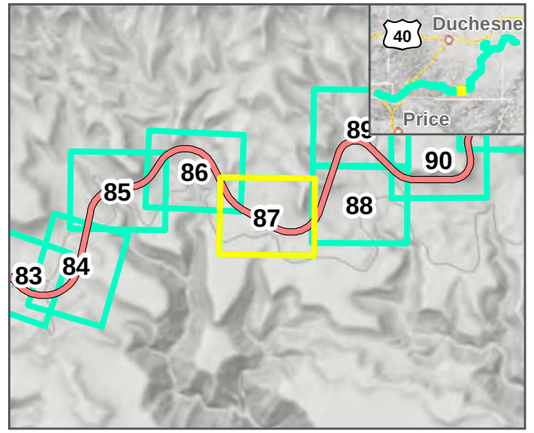
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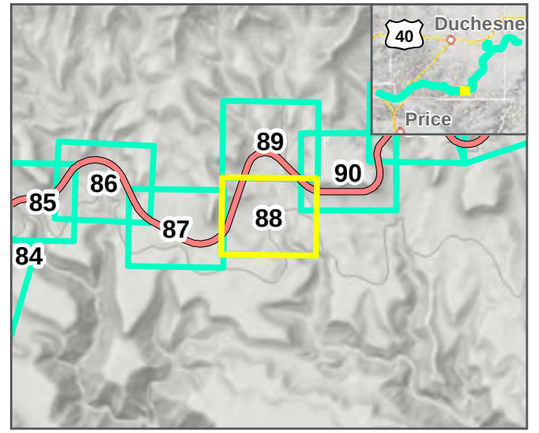
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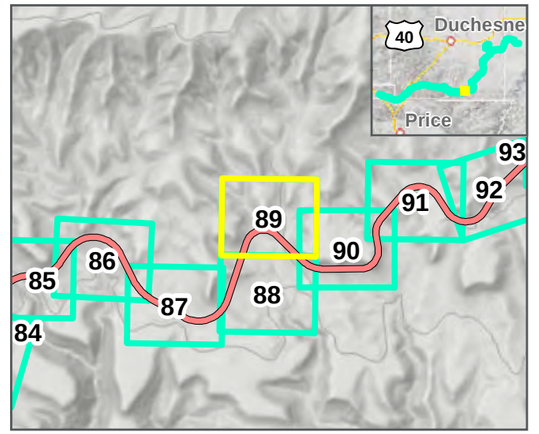
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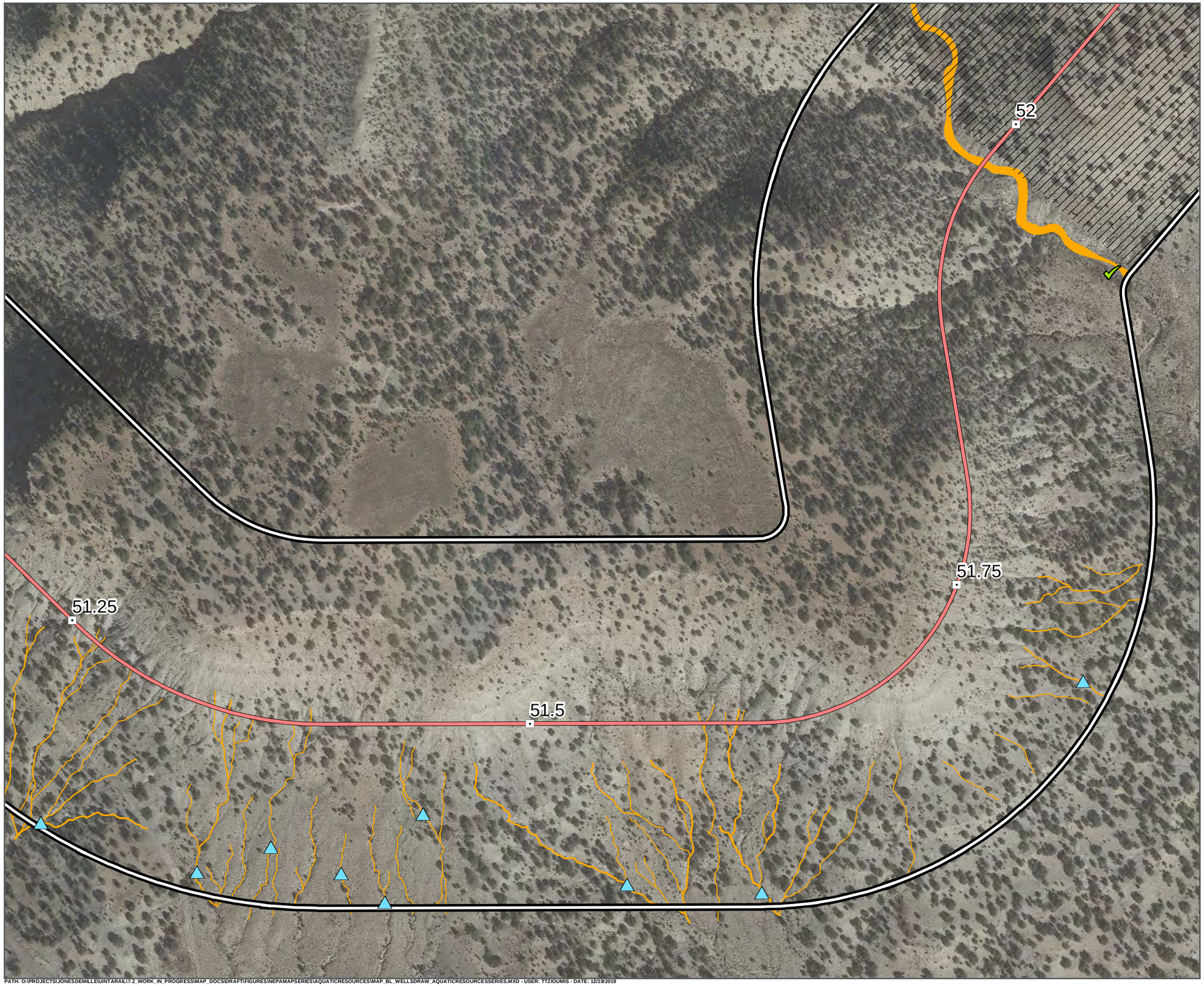
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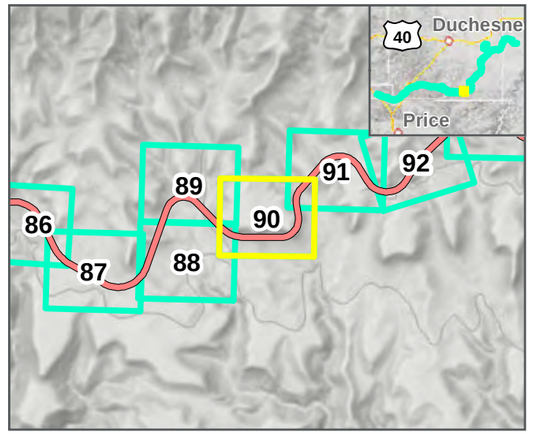
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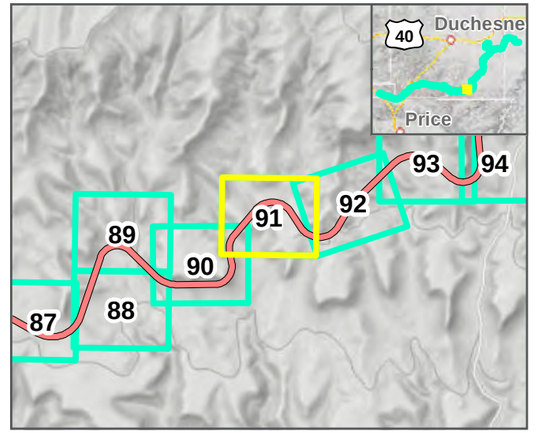
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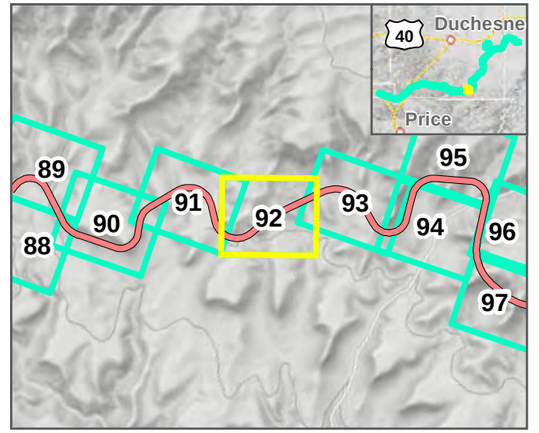
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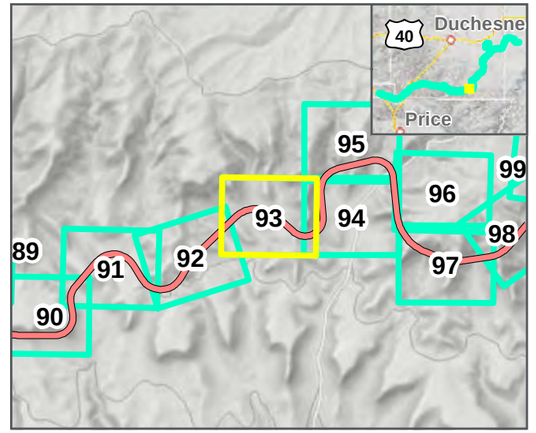
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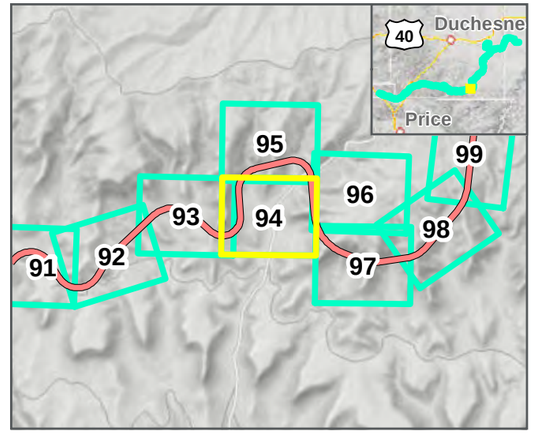
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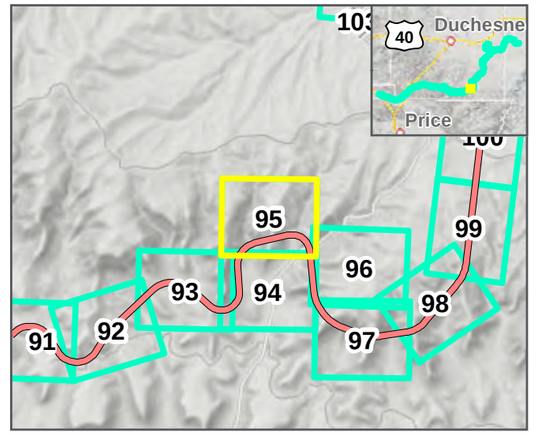
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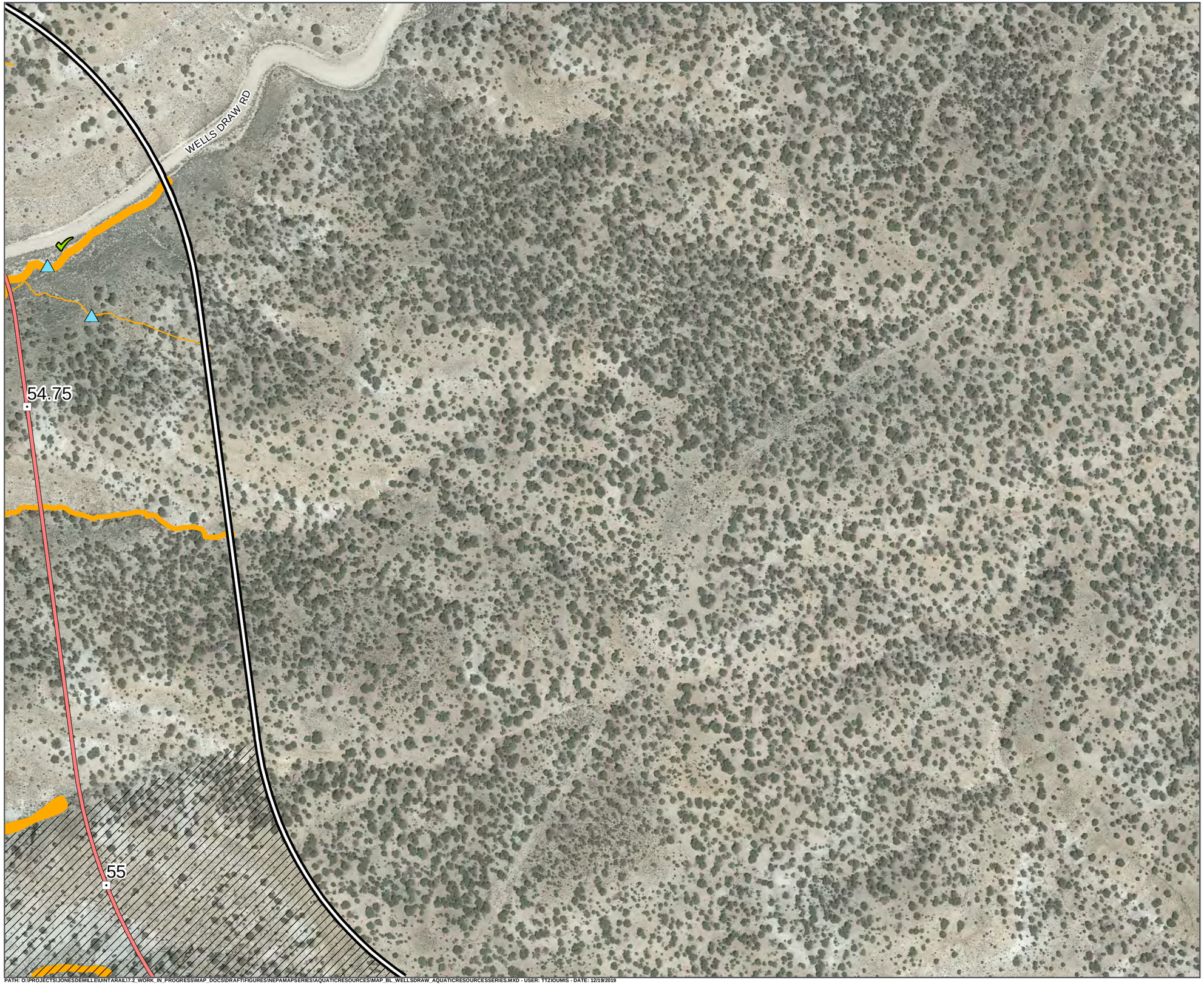
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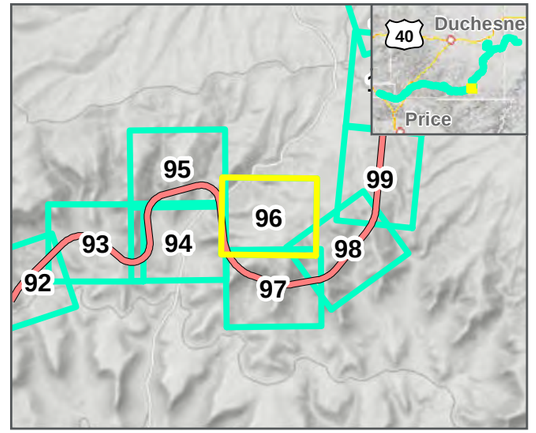
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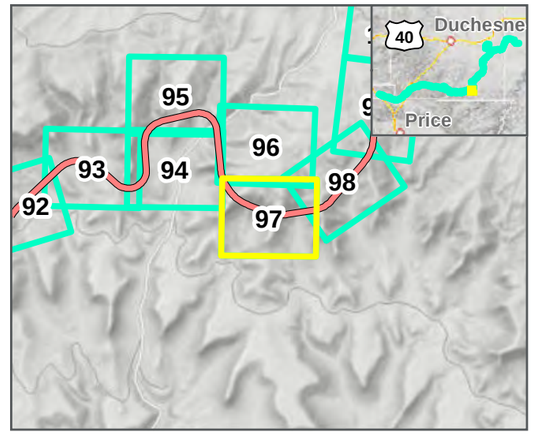
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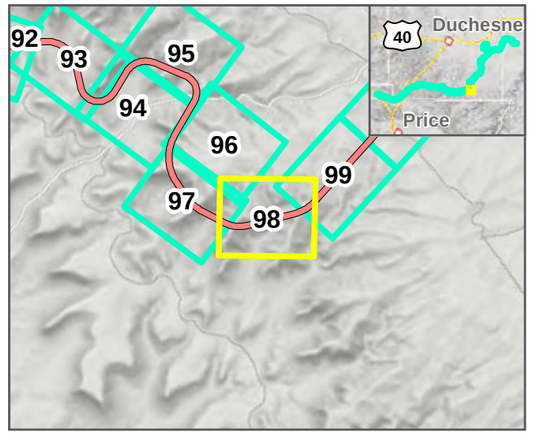
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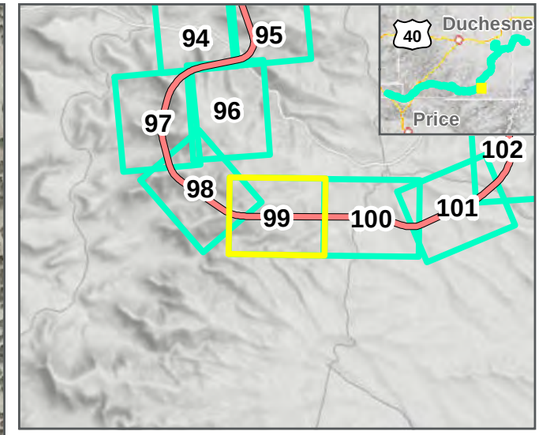
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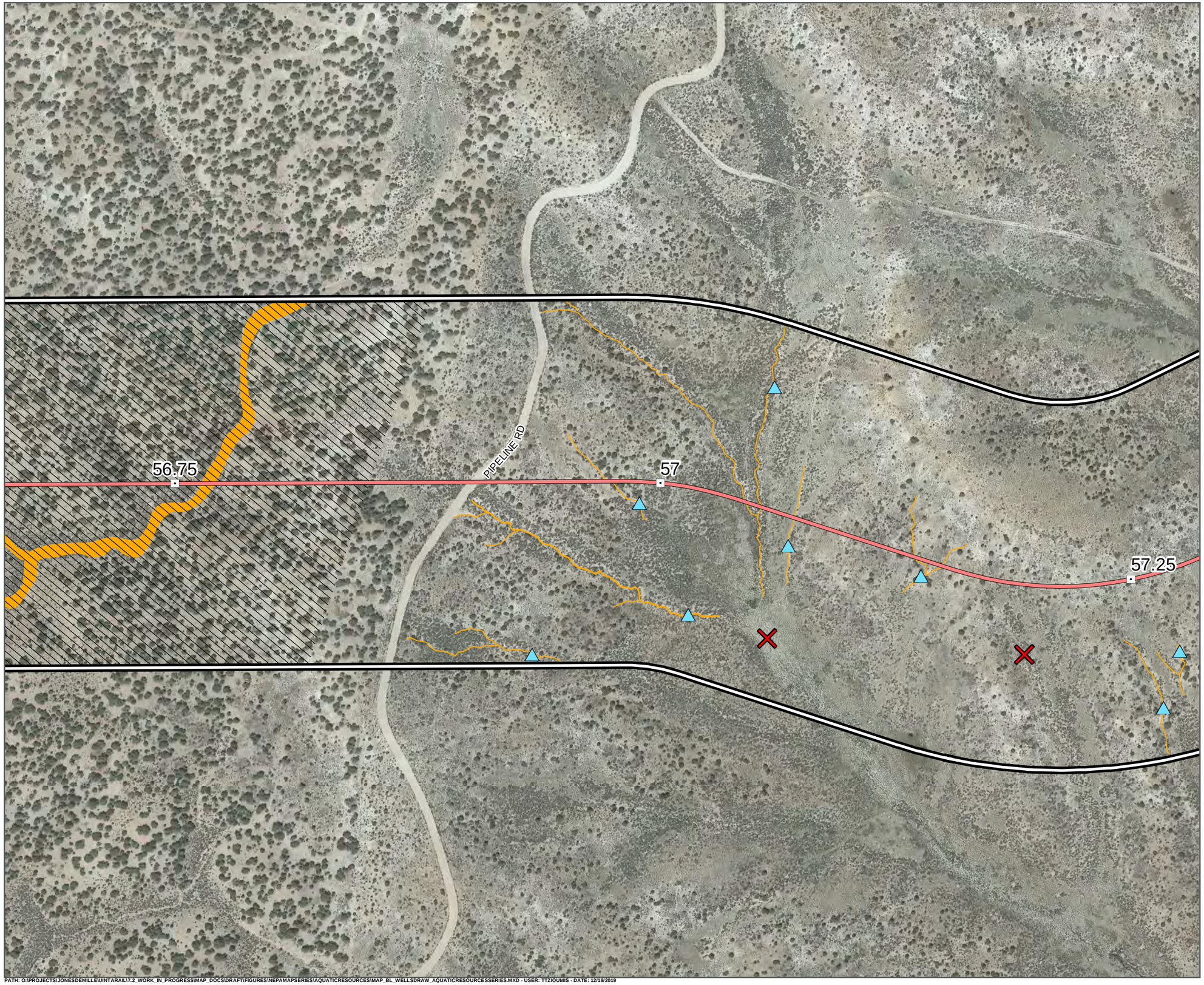
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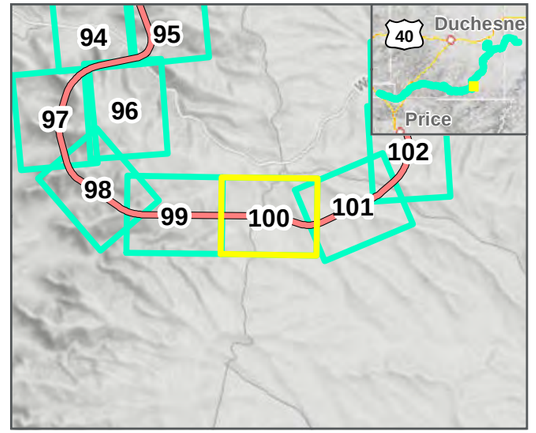
DATA SOURCES:
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COODINATE SYSTEM:
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SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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- Milepost
- Wells Draw Centerline
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WELLS DRAW ALTERNATIVE: 11/22/2019

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DECEMBER 2019

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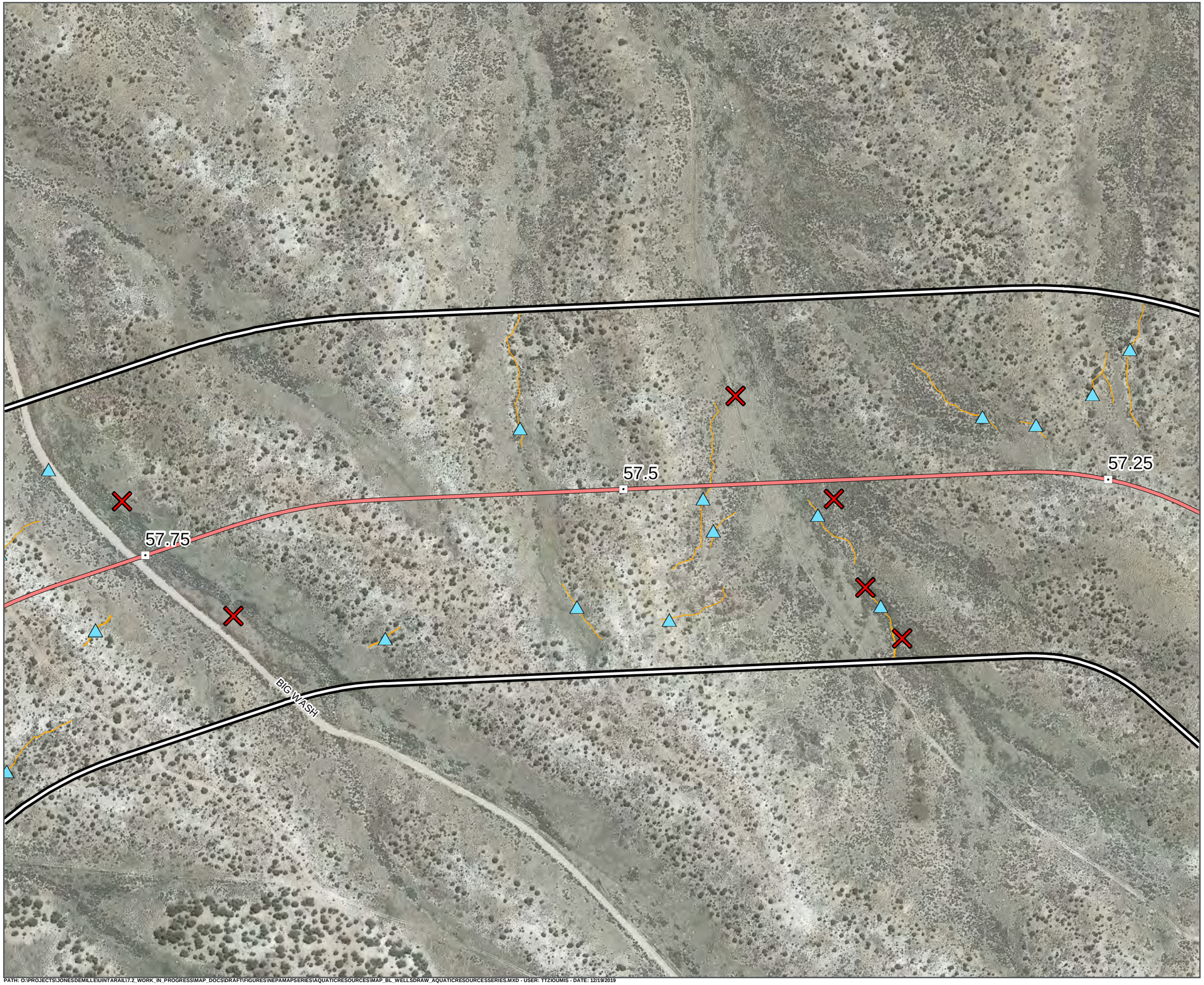
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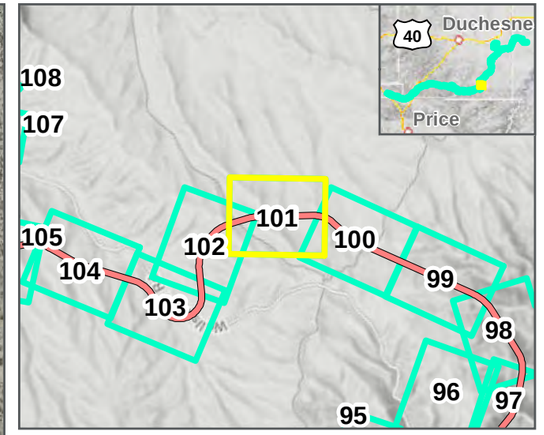
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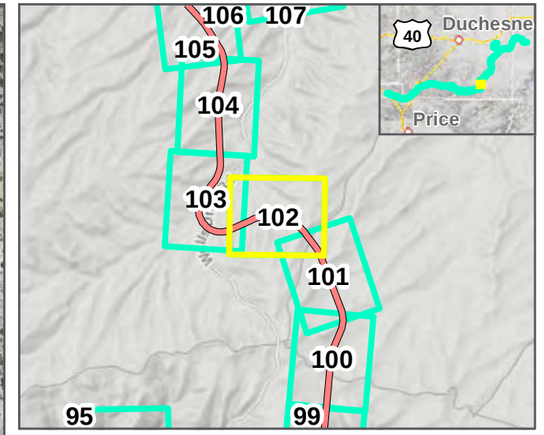
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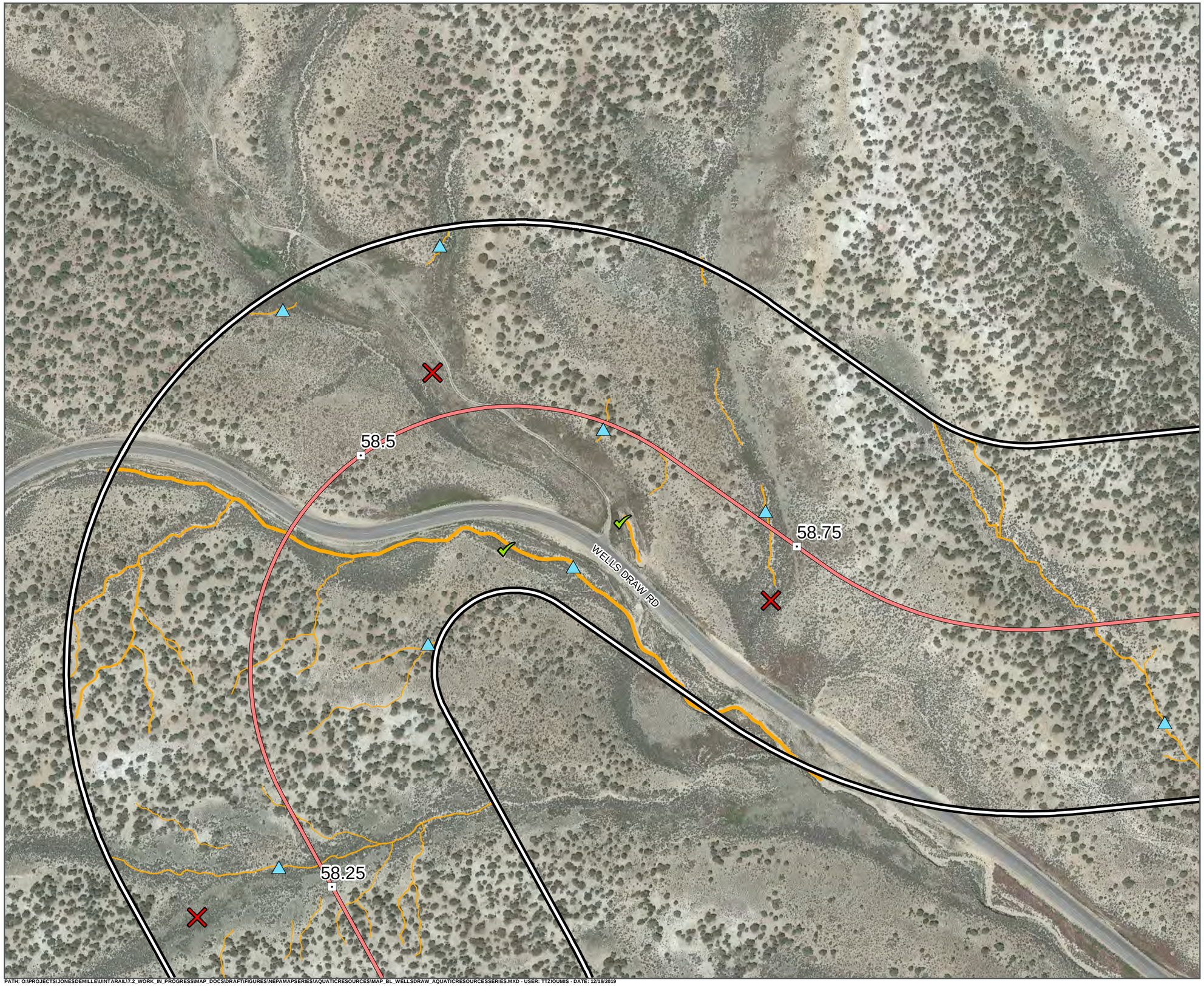
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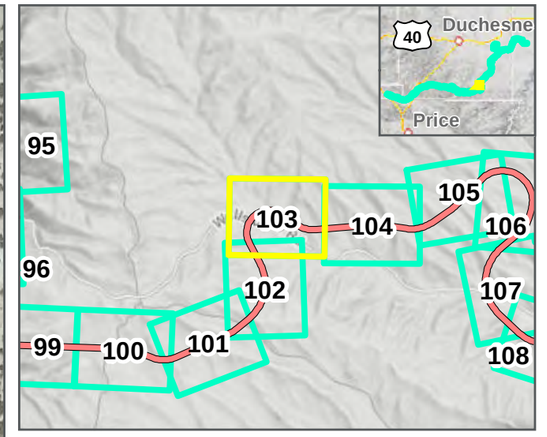
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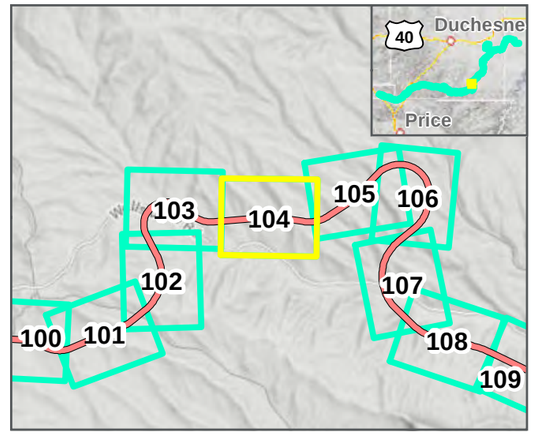
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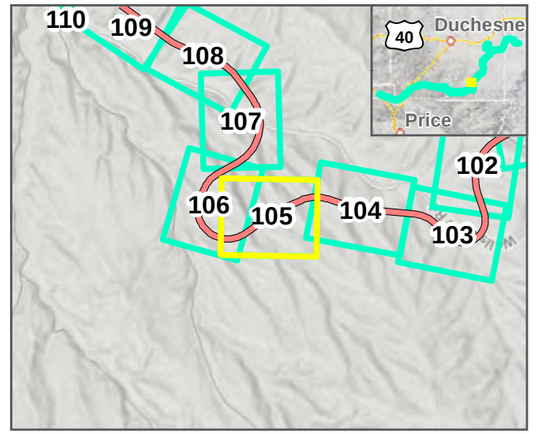
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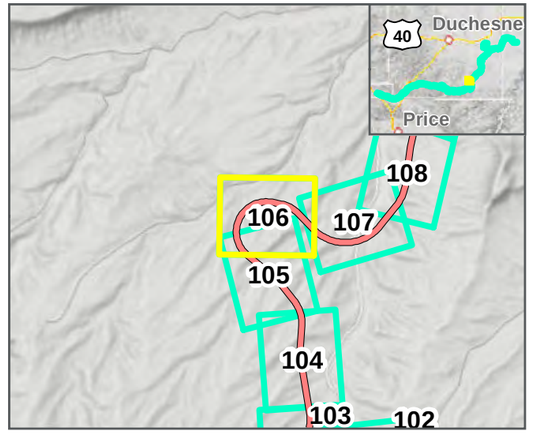
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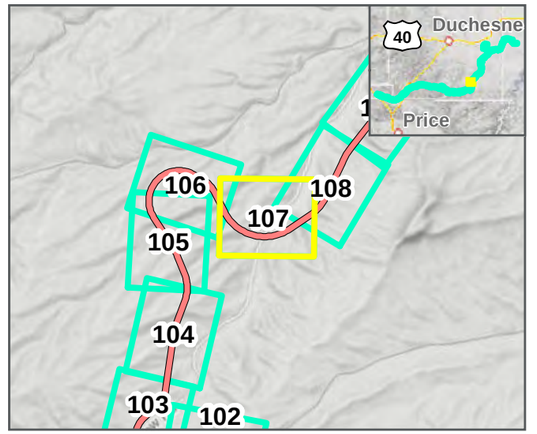
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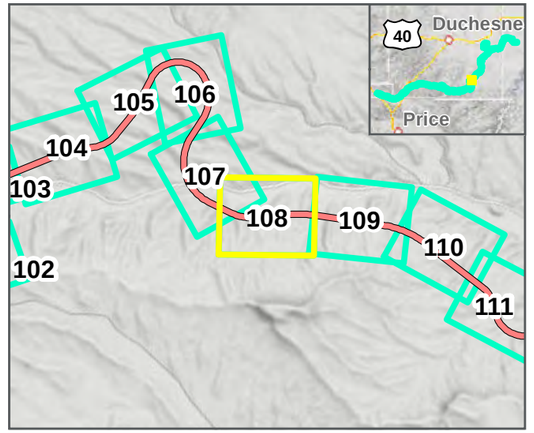
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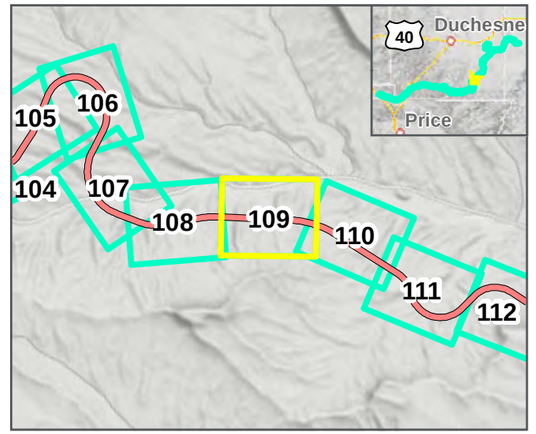
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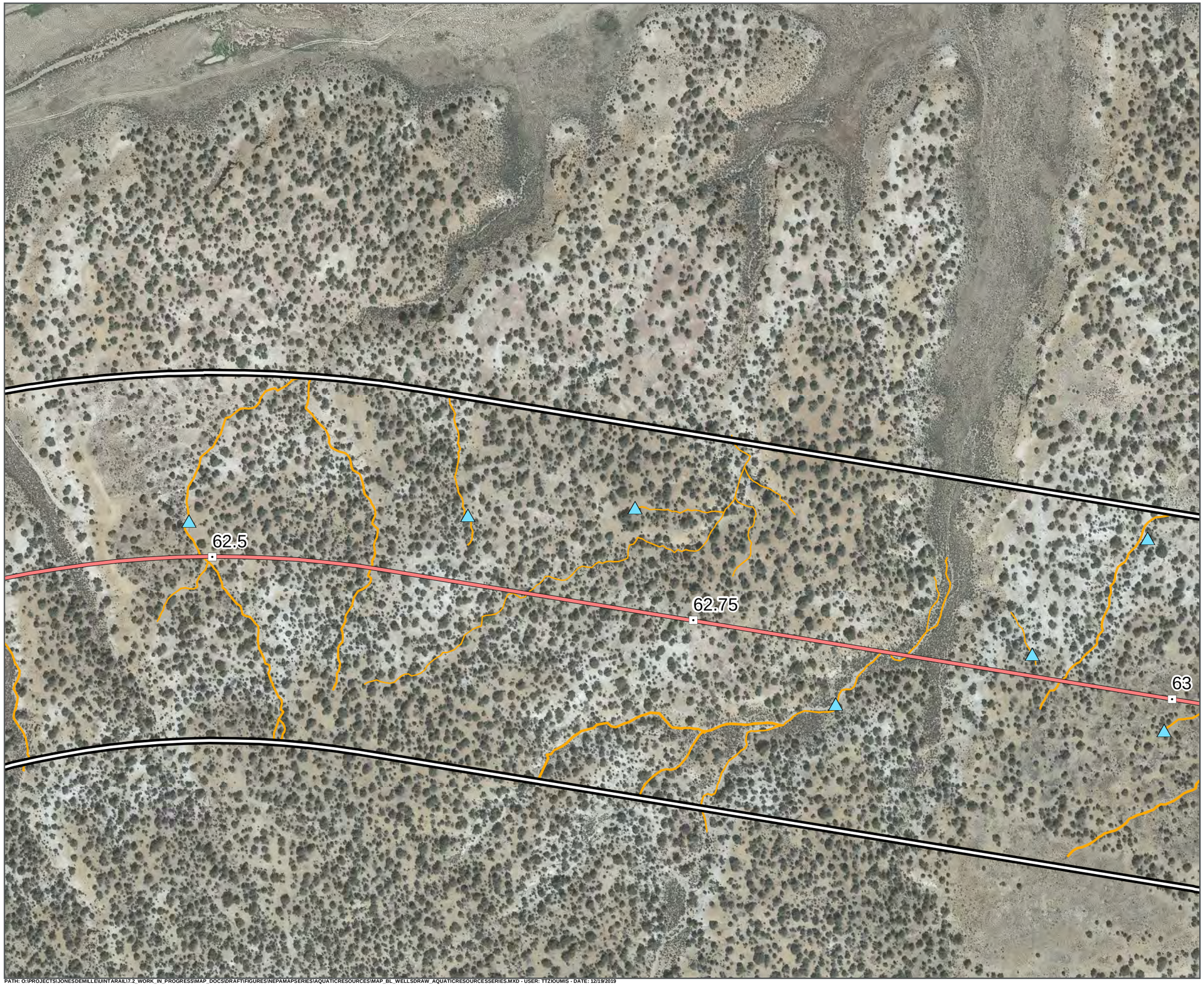
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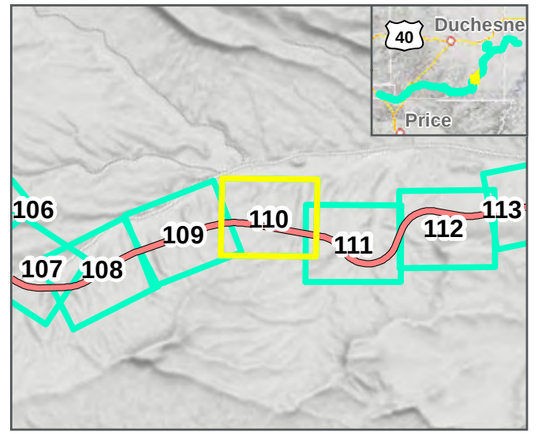
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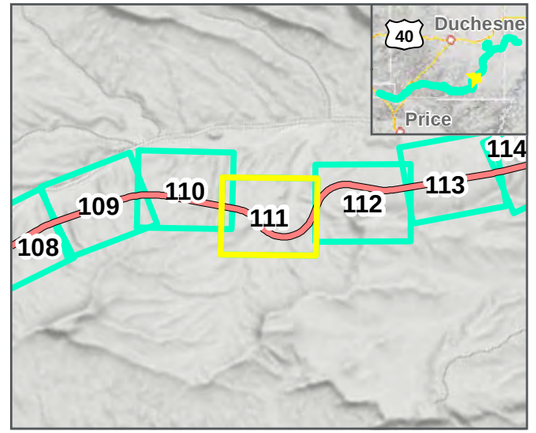
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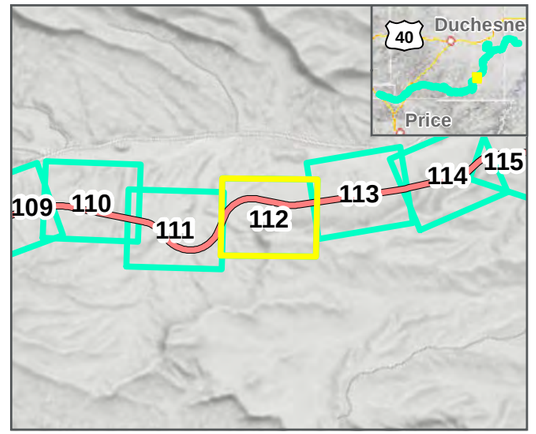
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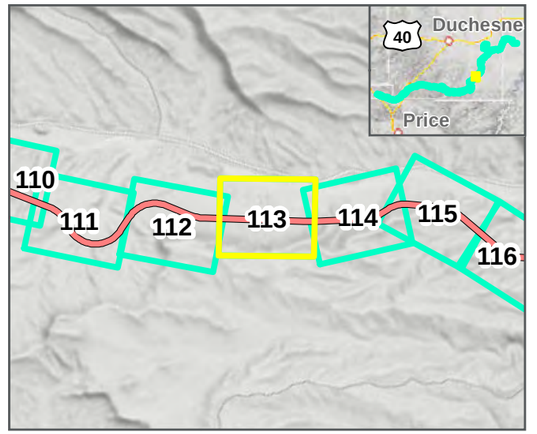
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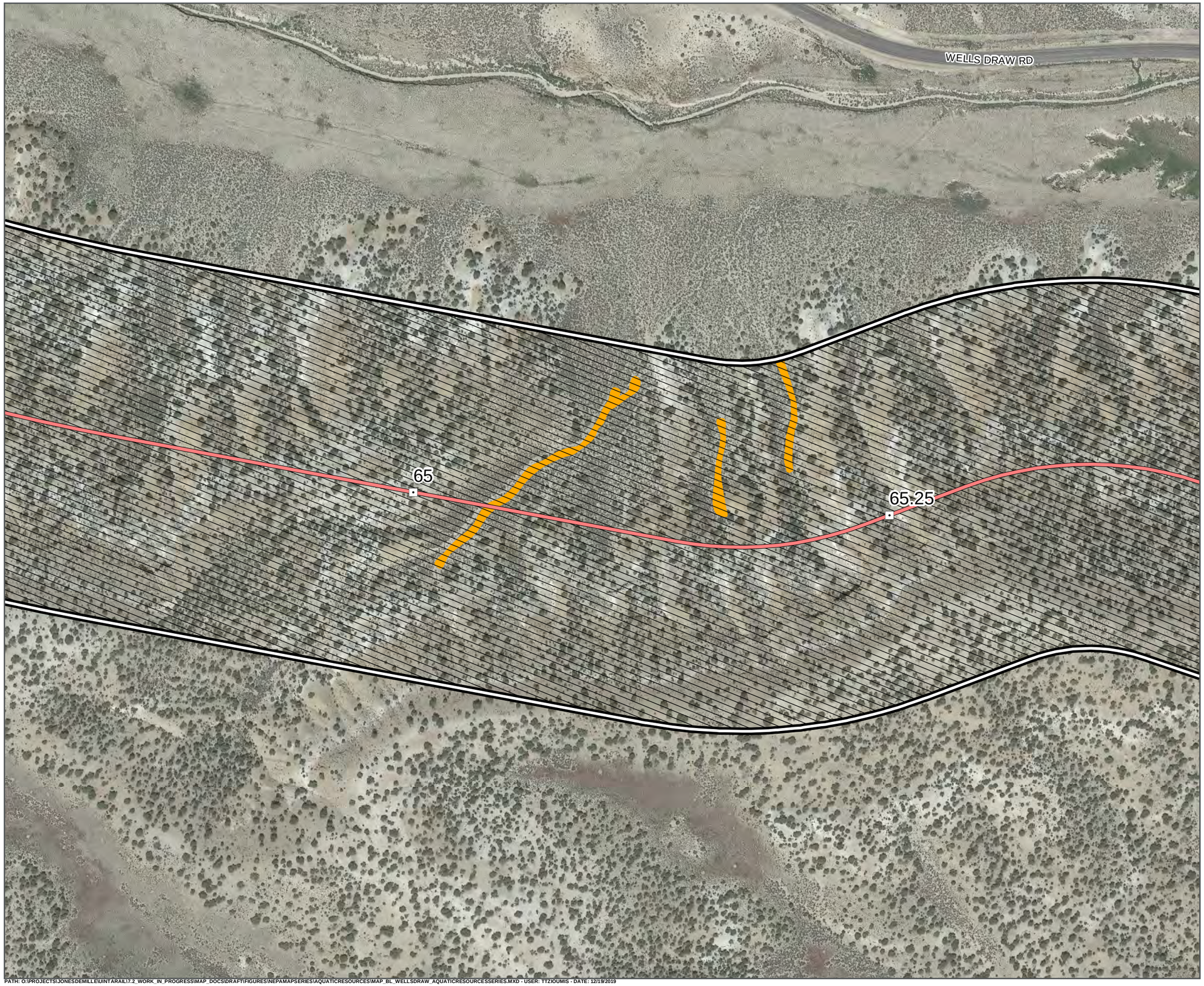
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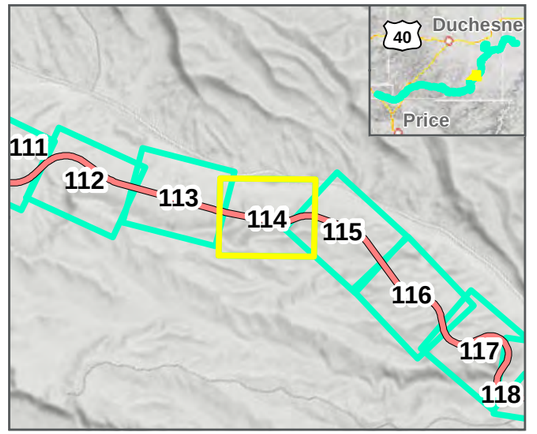
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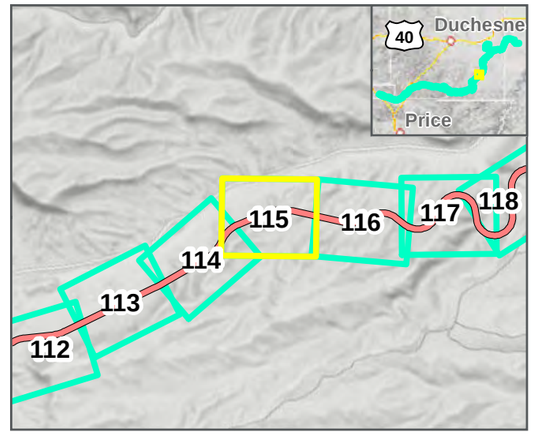
DATA SOURCES:
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COODINATE SYSTEM:
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SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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- Study Area
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WELLS DRAW ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

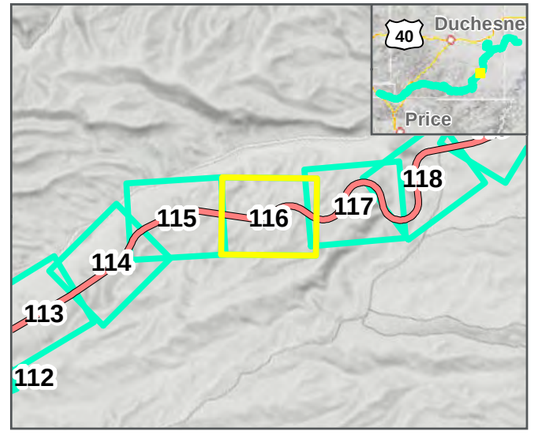
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DECEMBER 2019

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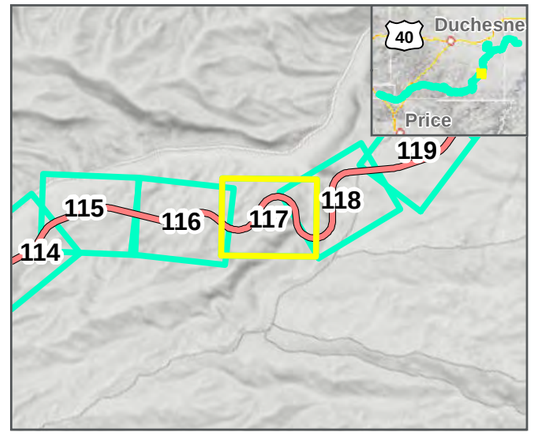
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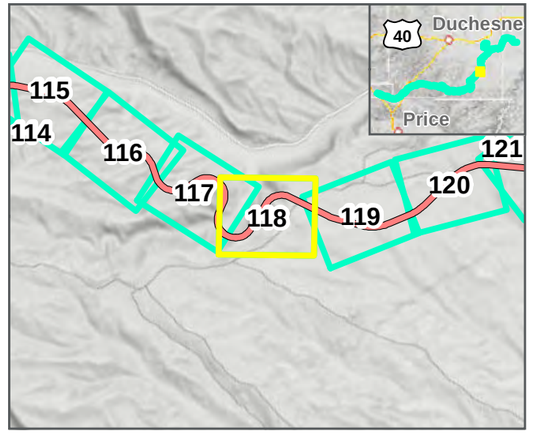
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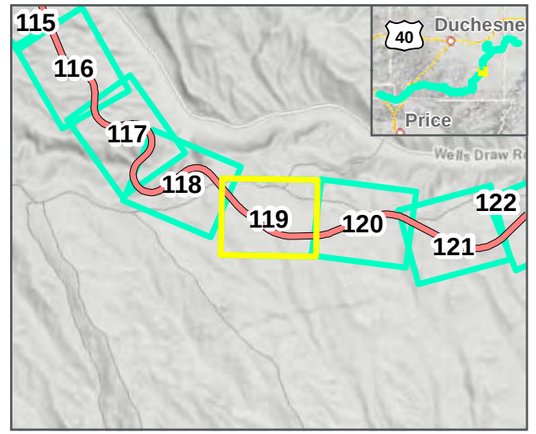
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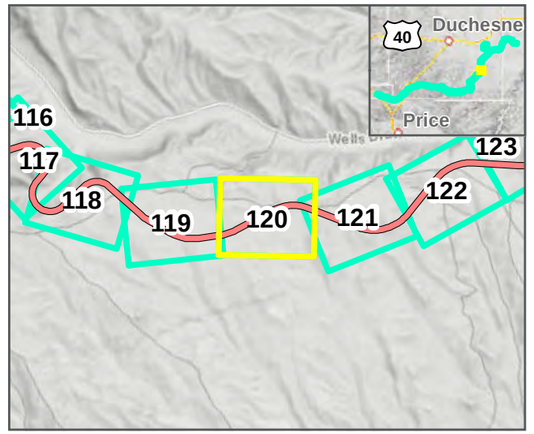
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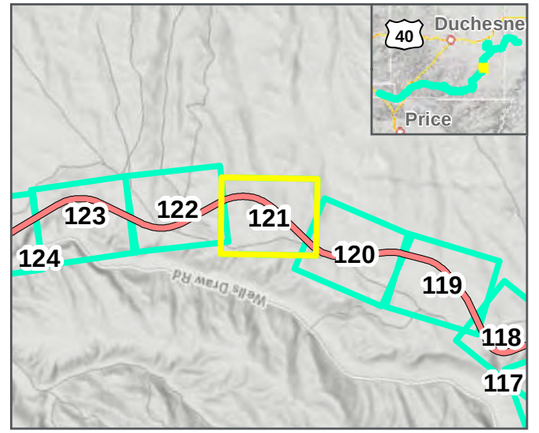
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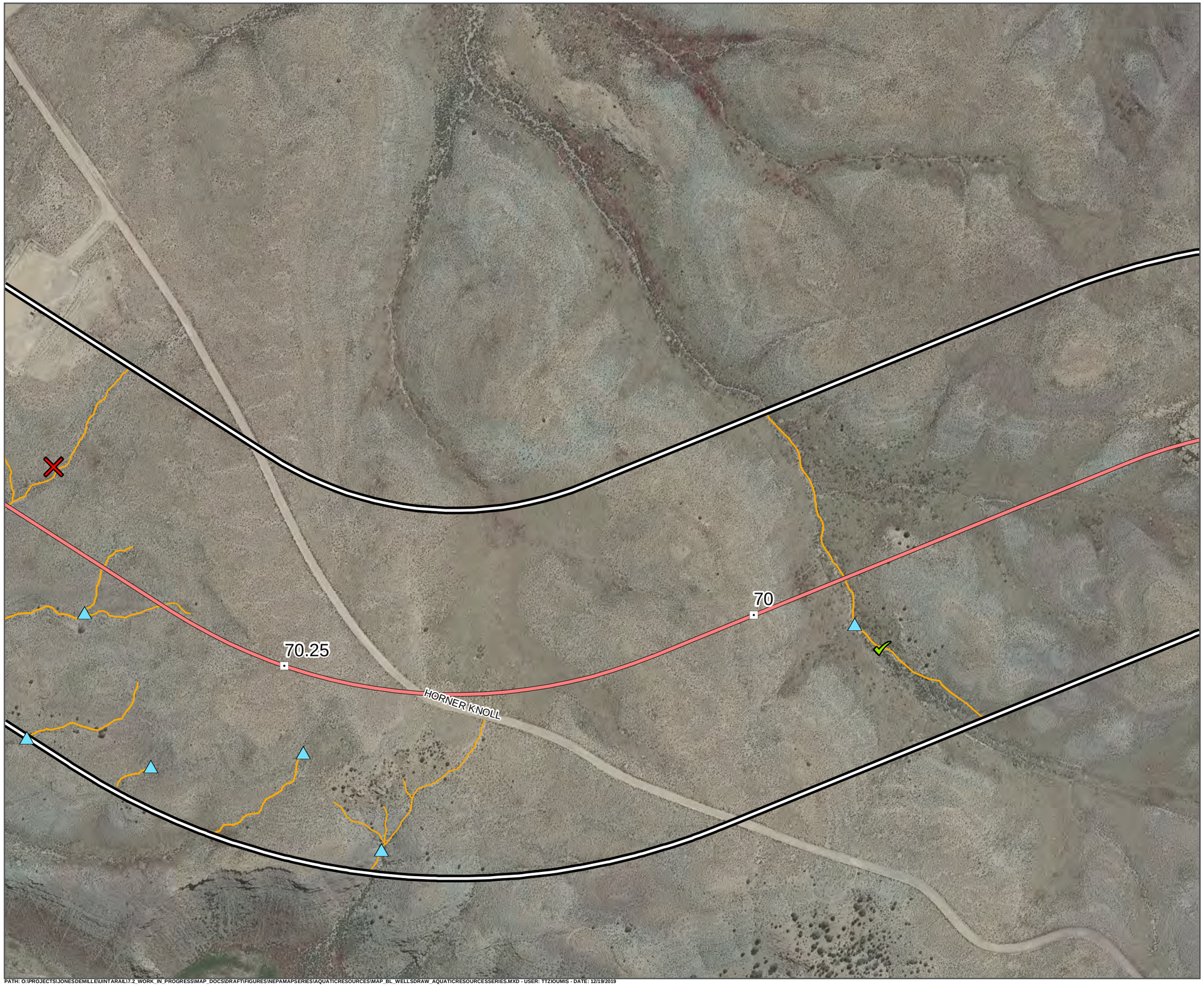
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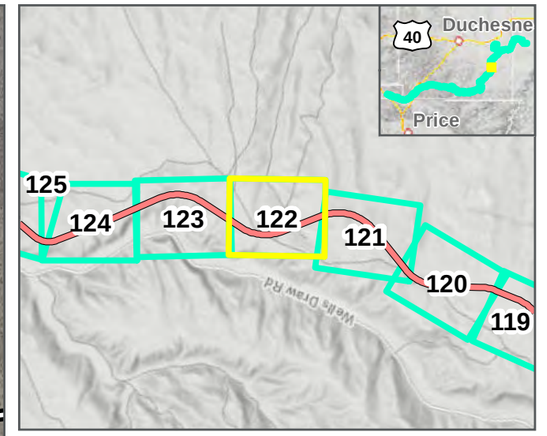
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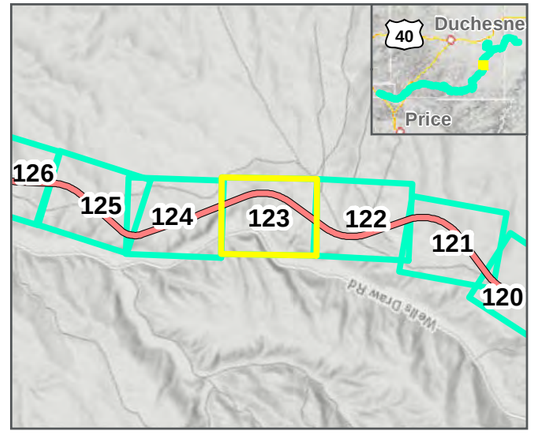
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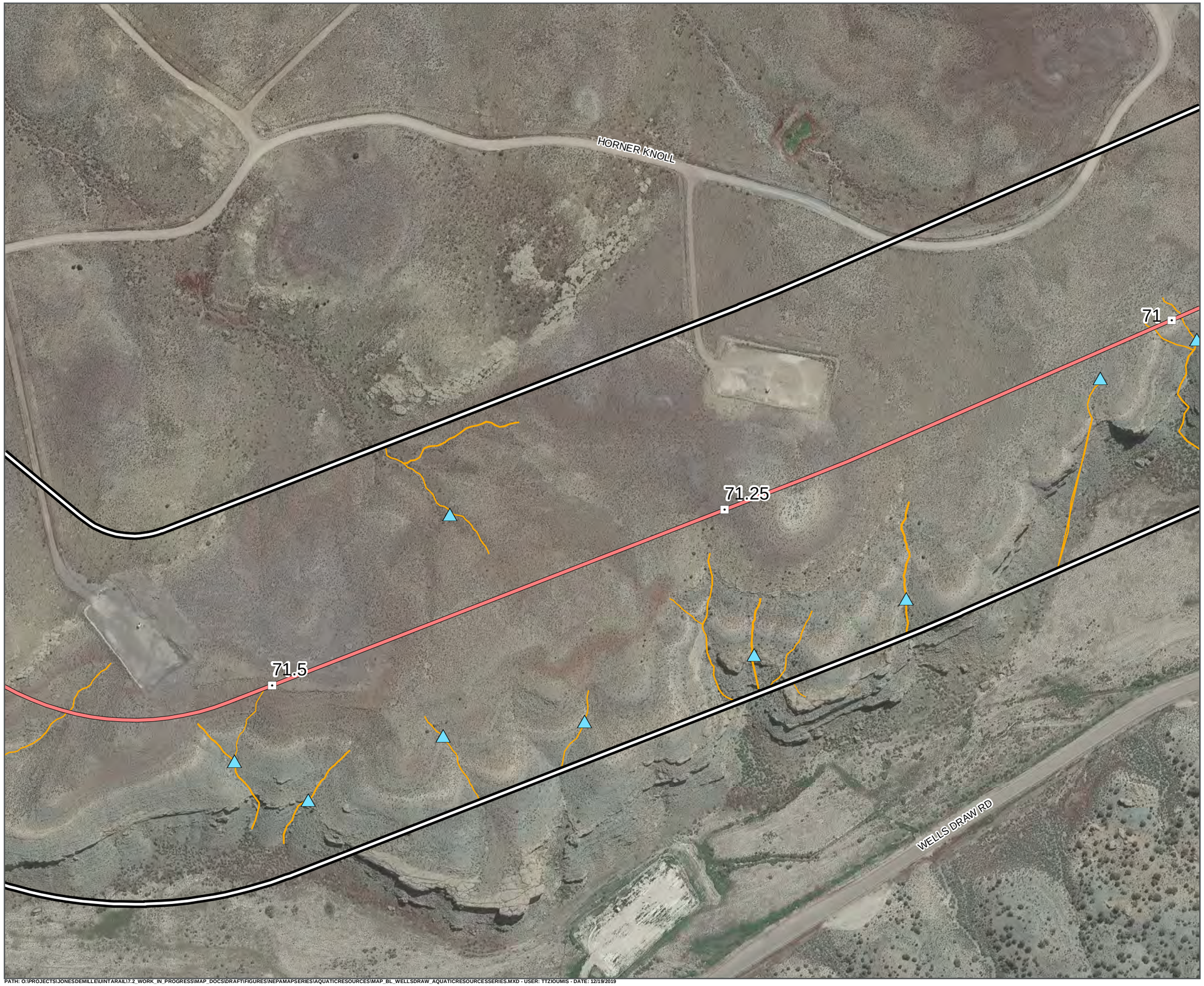
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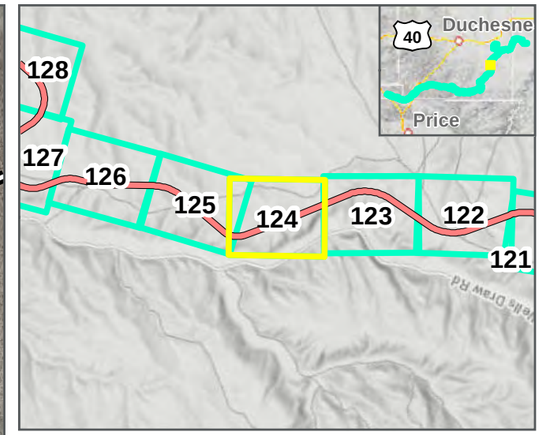
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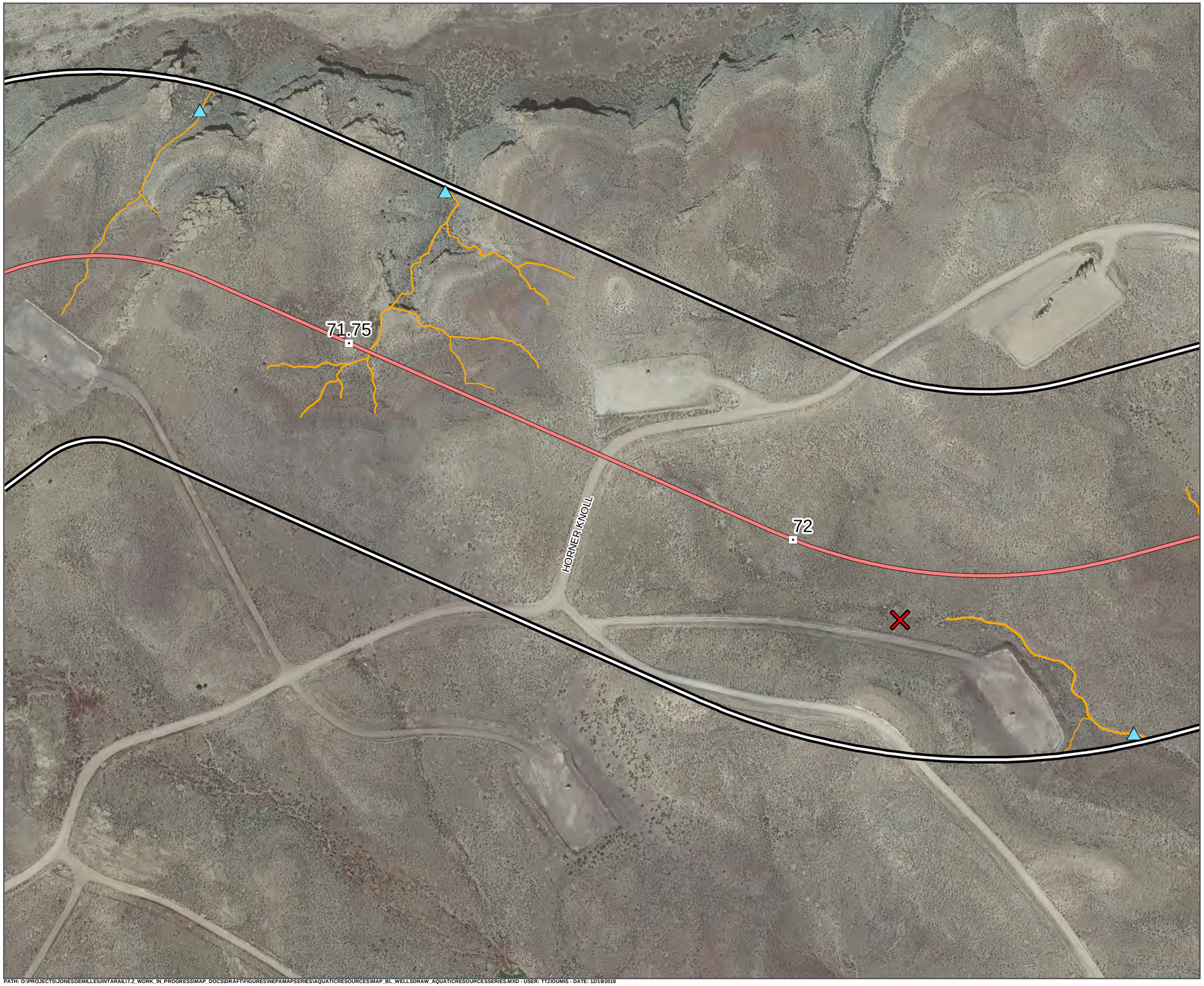
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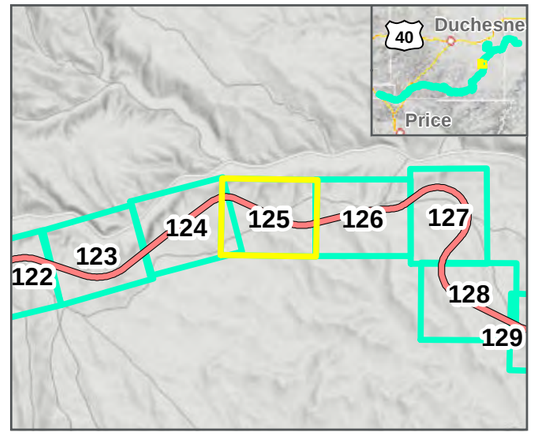
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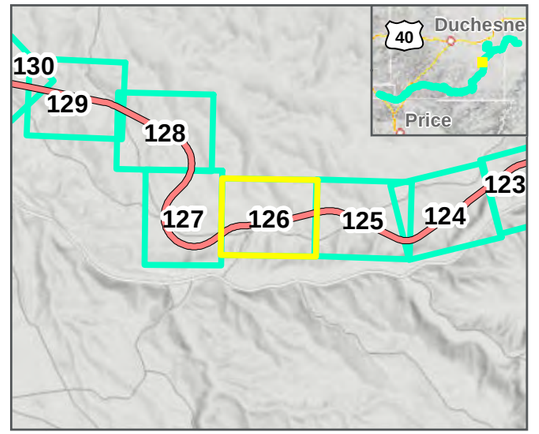
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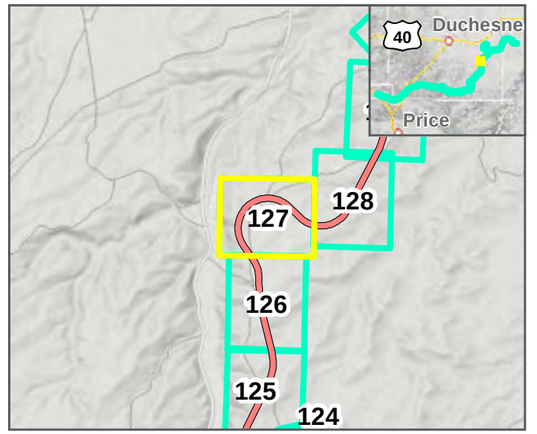
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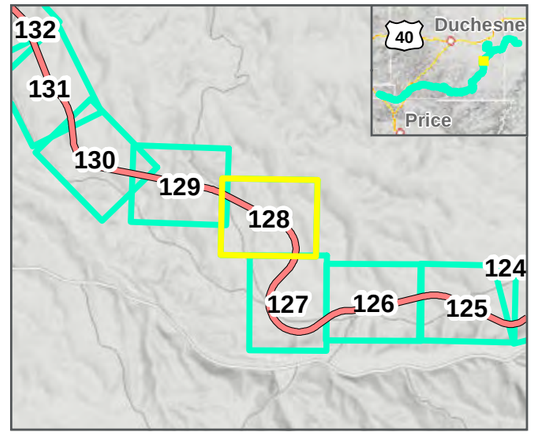
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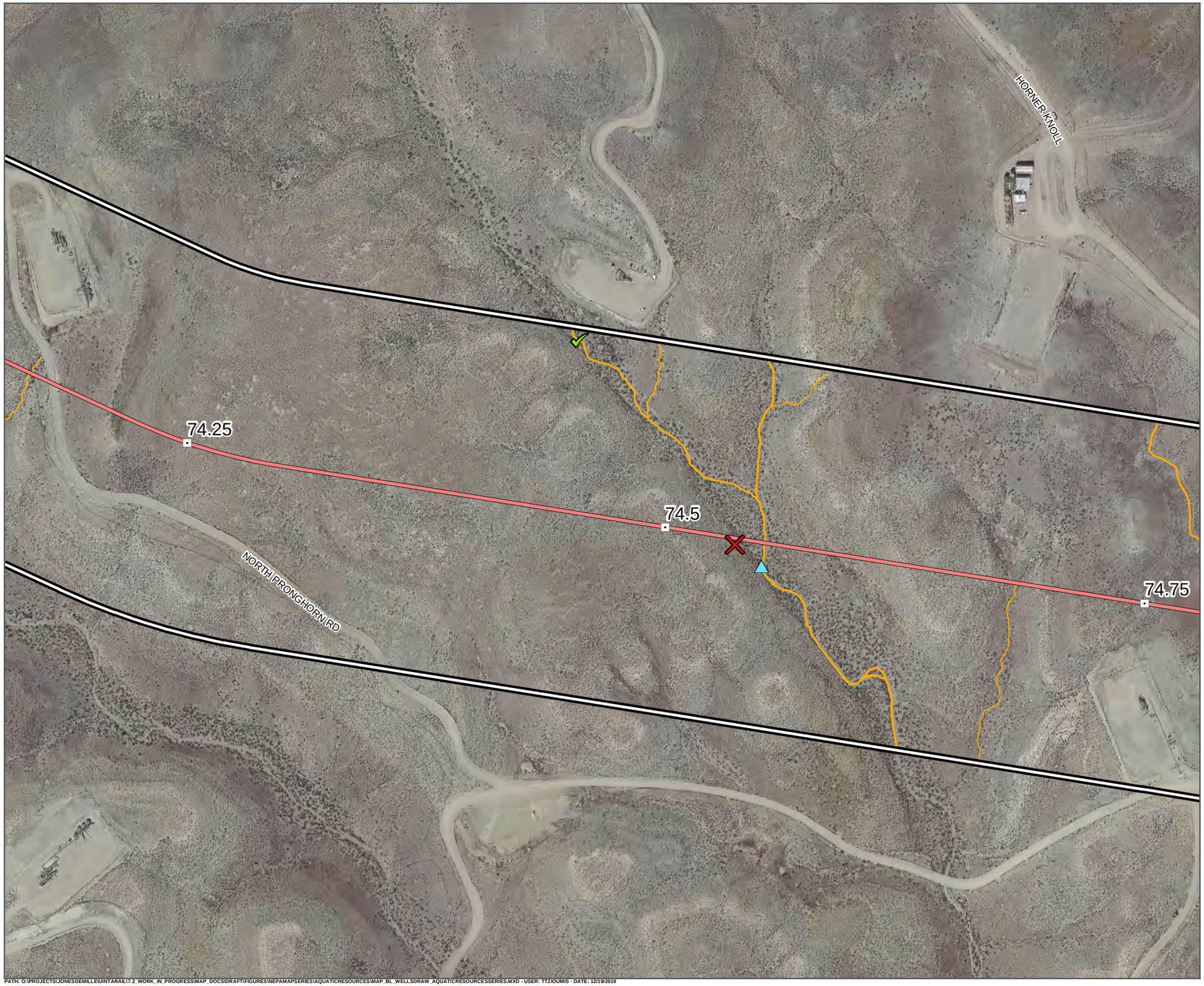
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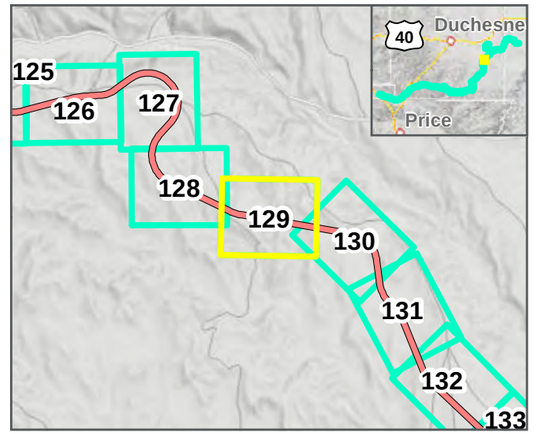
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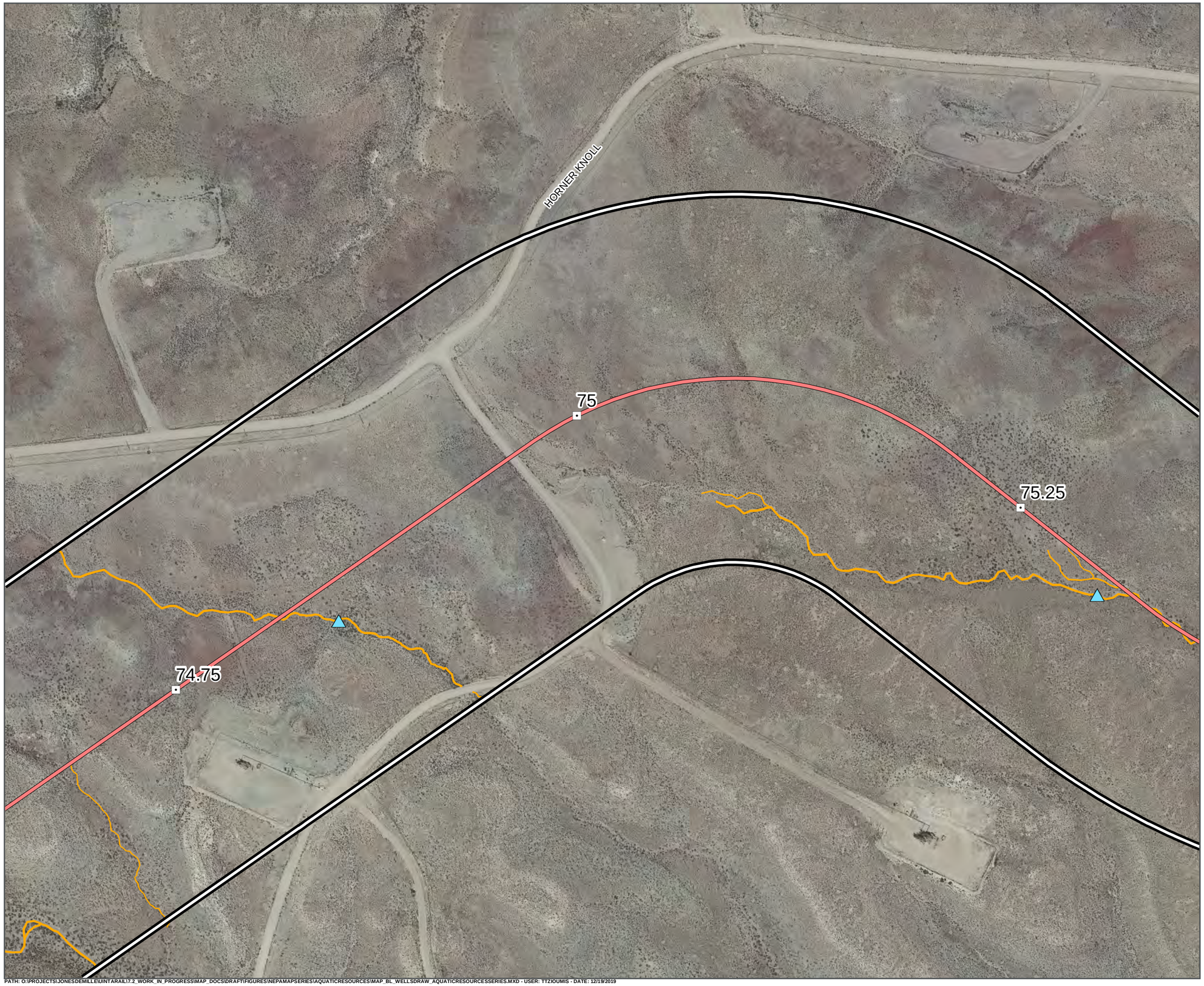
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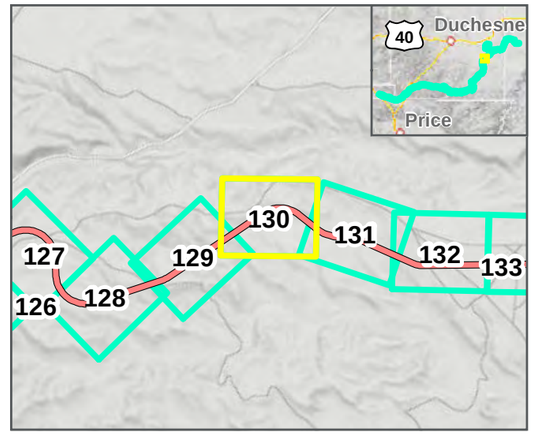
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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- Milepost
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WELLS DRAW ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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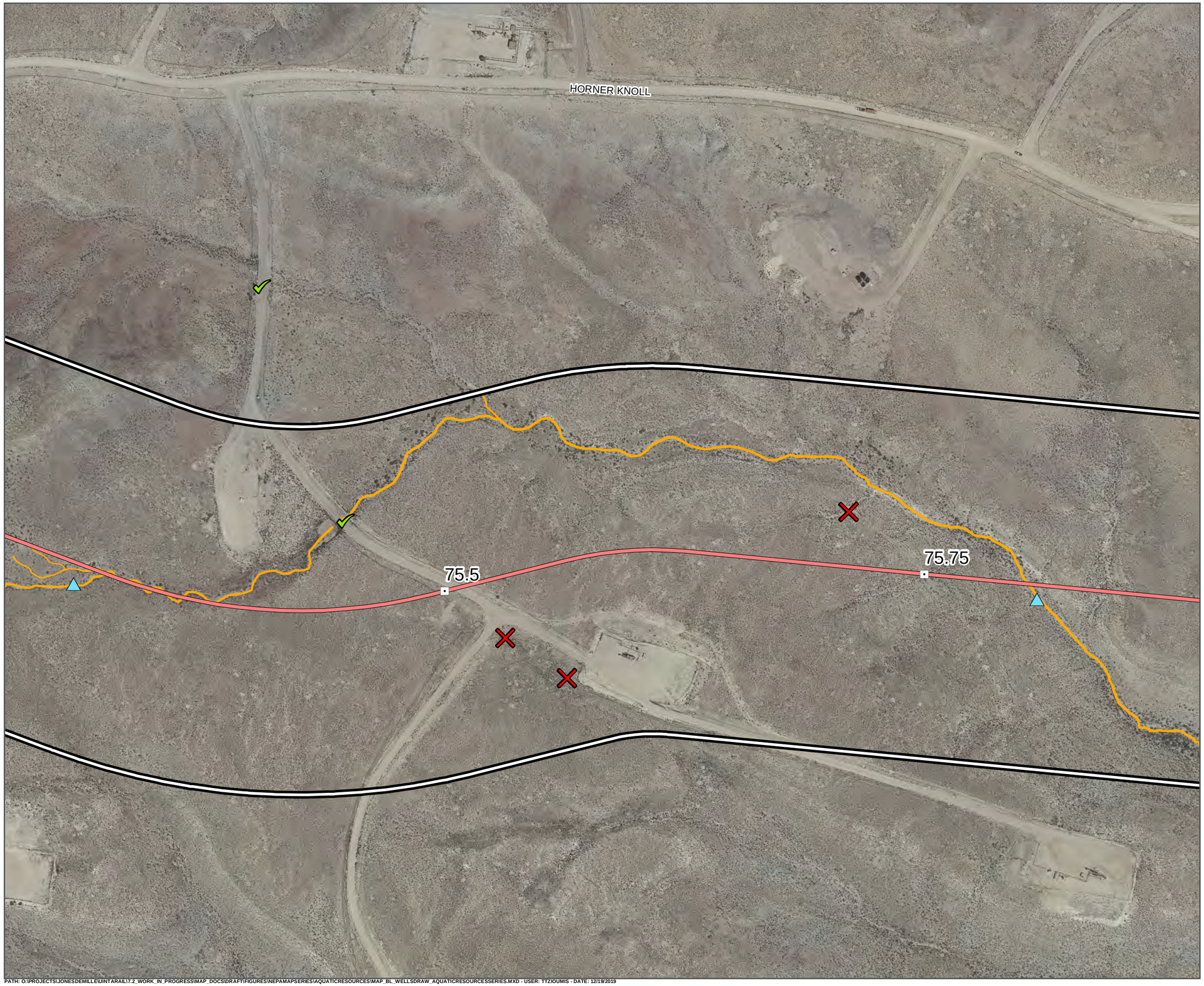
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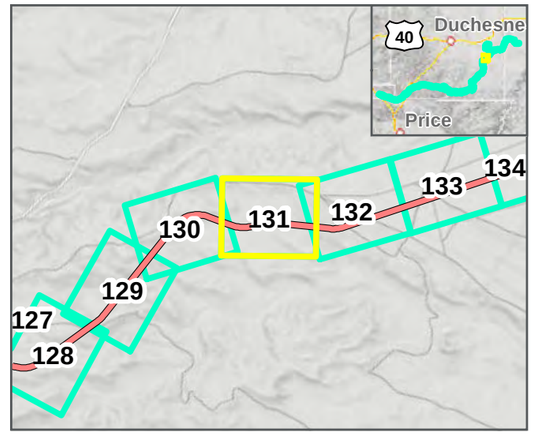
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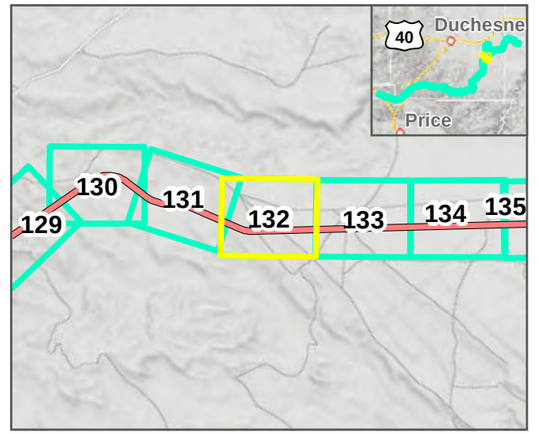
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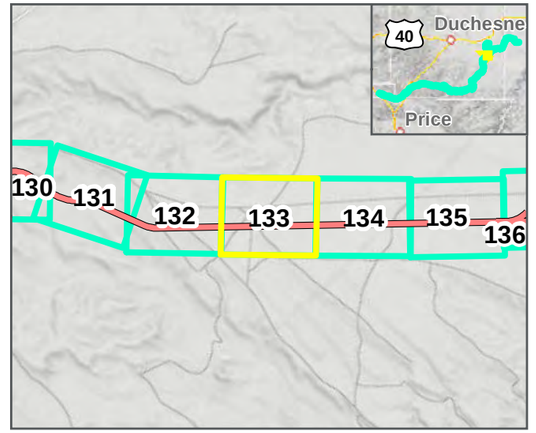
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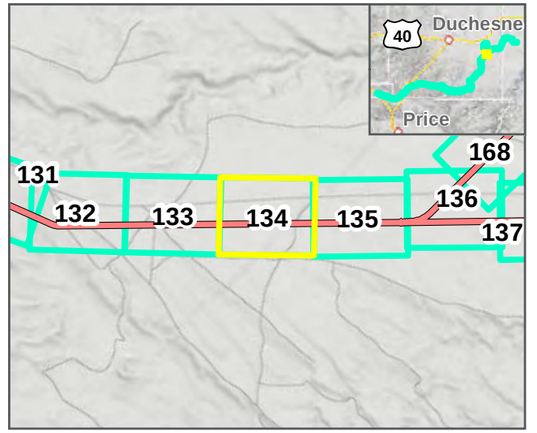
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DECEMBER 2019

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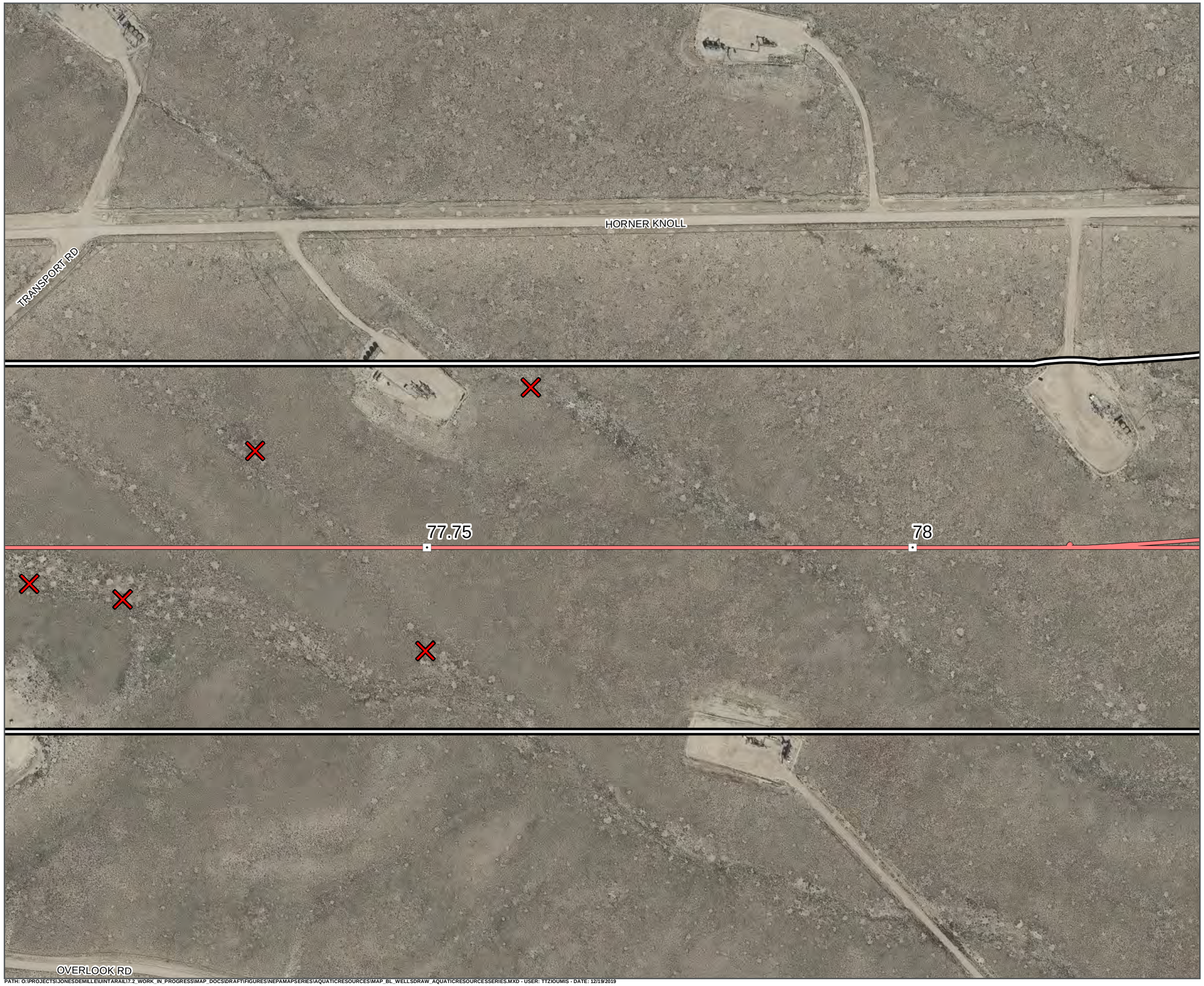
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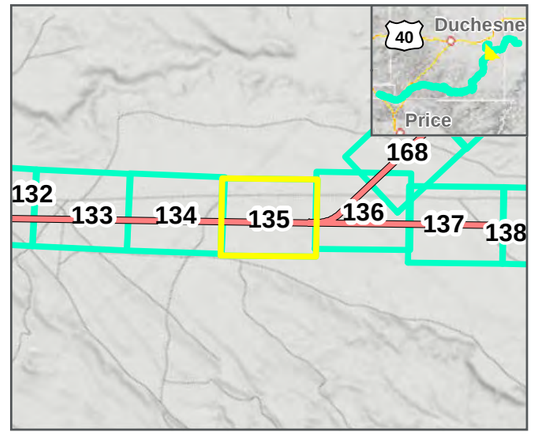
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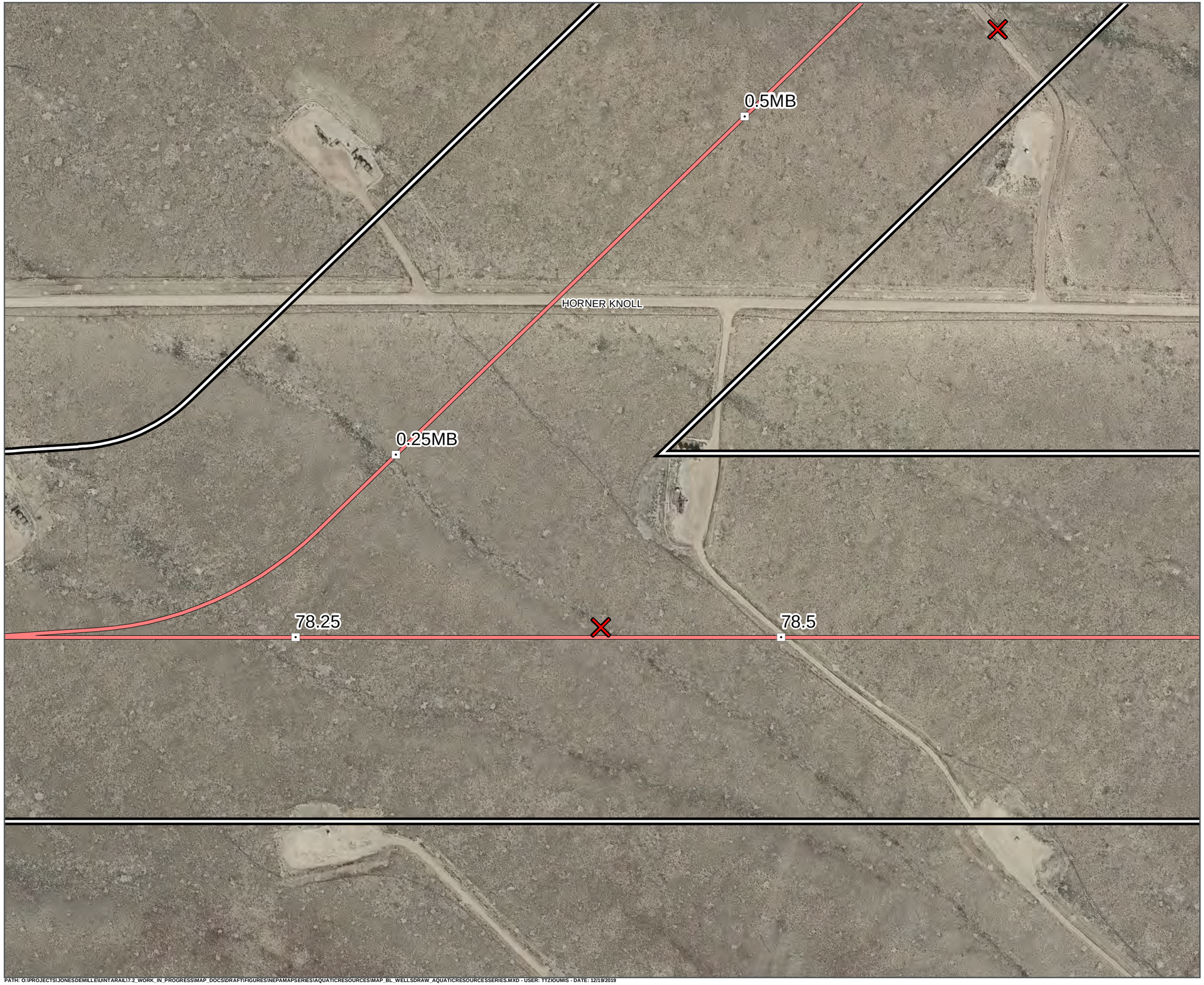
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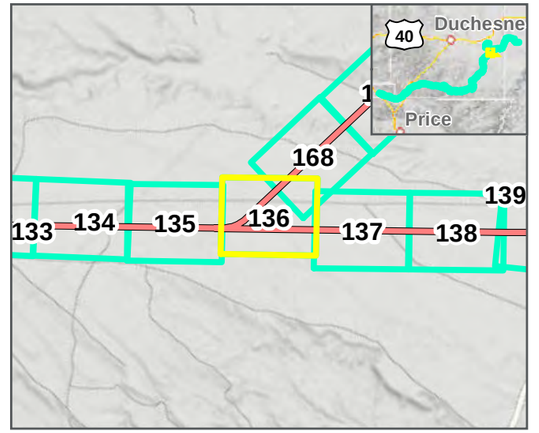
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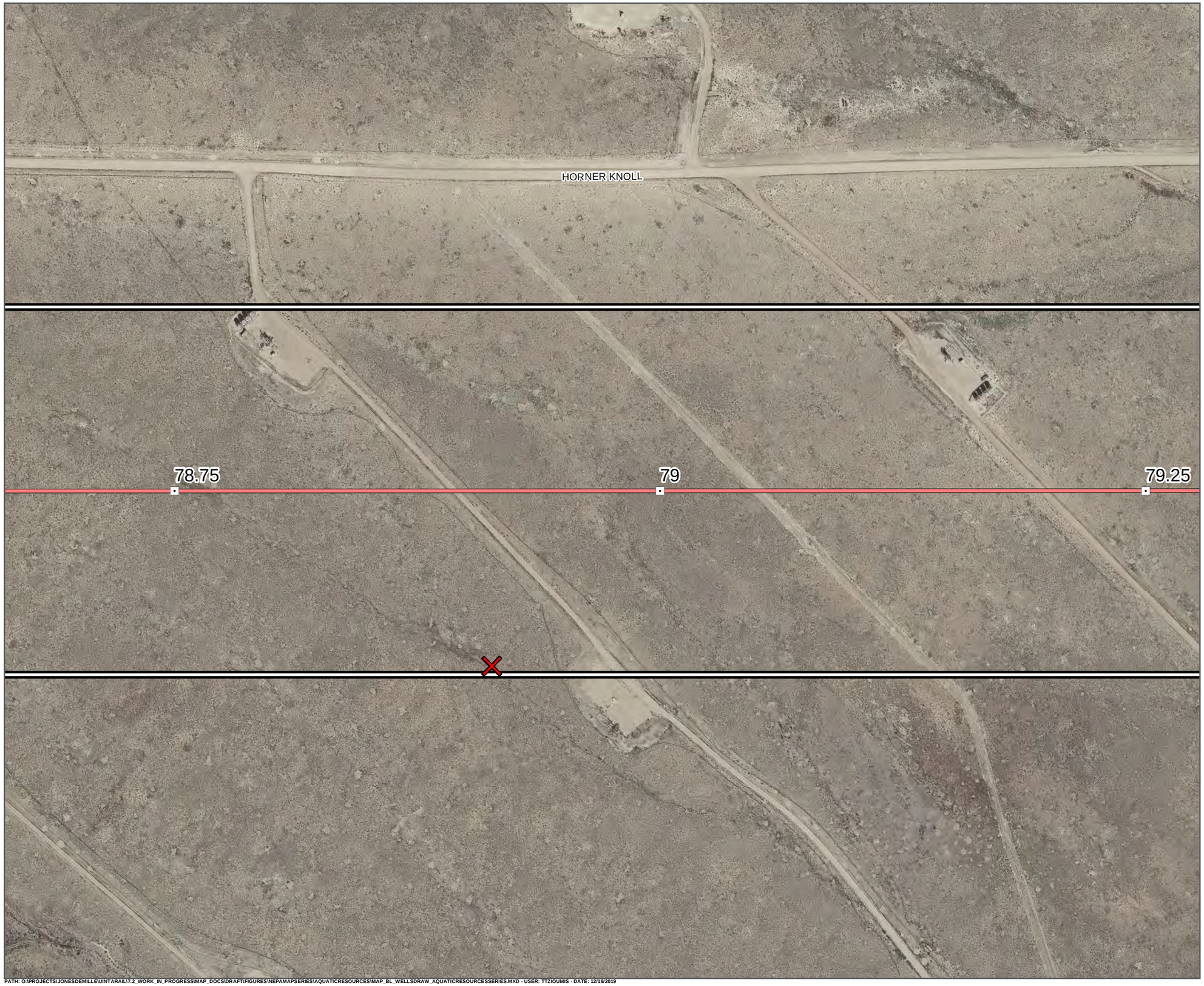
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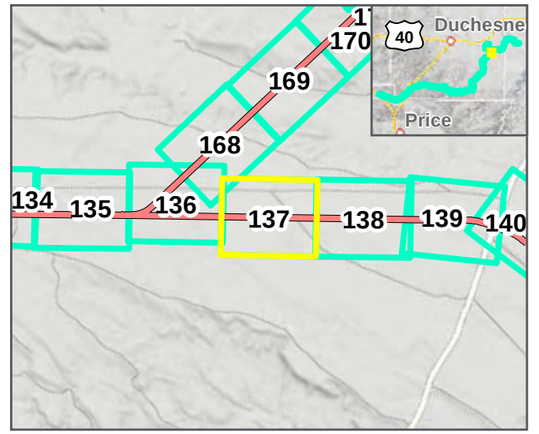
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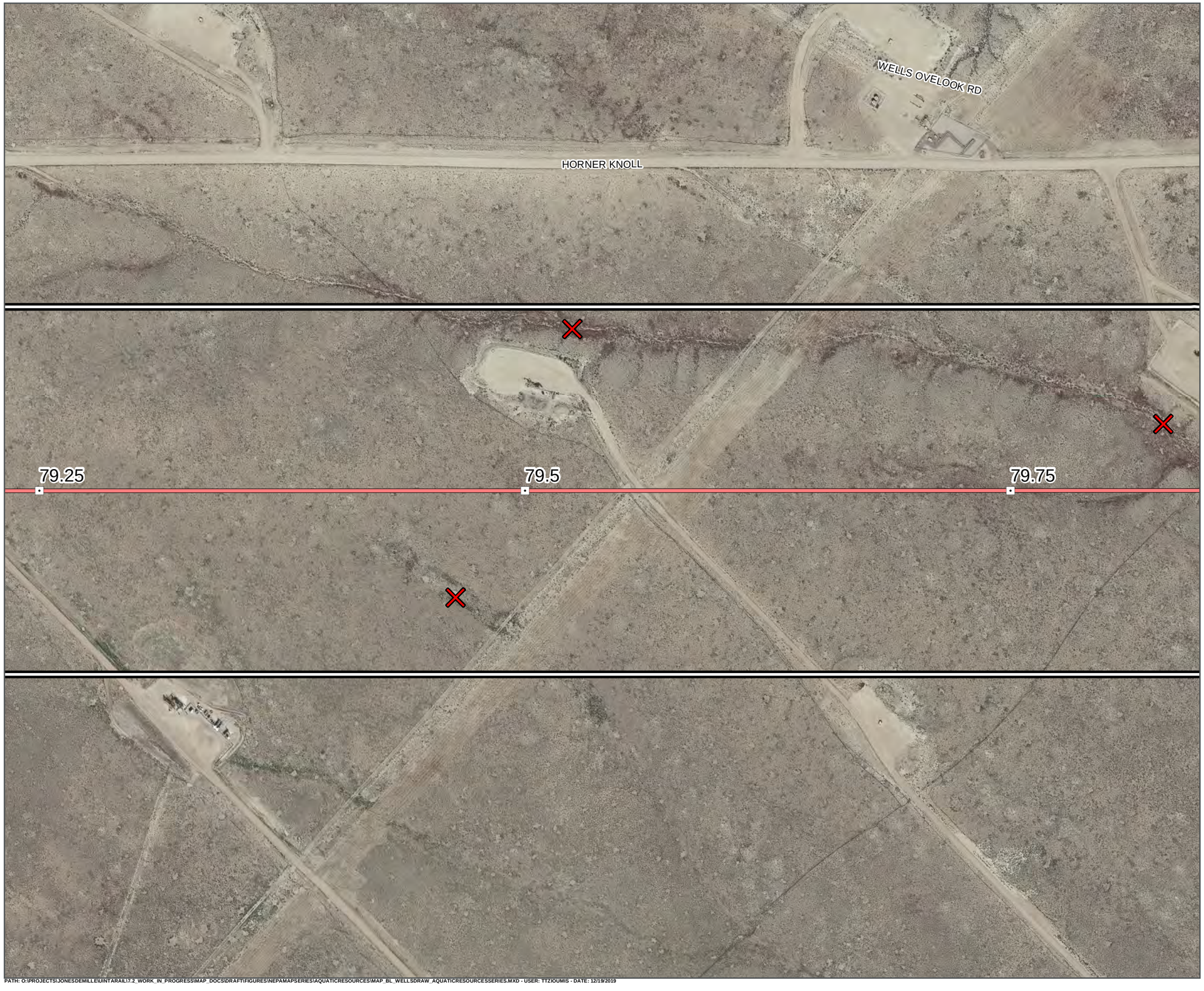
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DECEMBER 2019

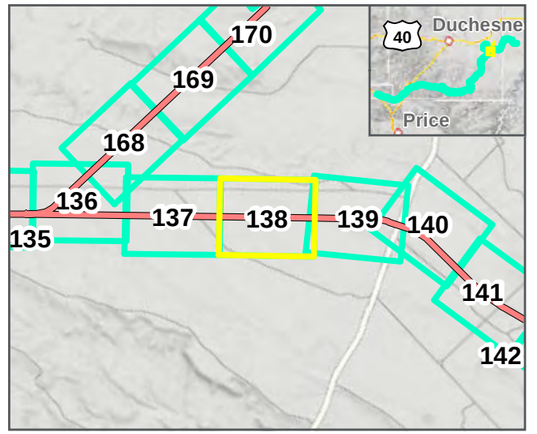
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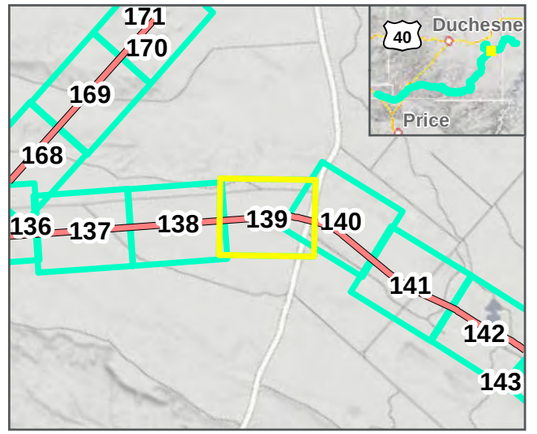
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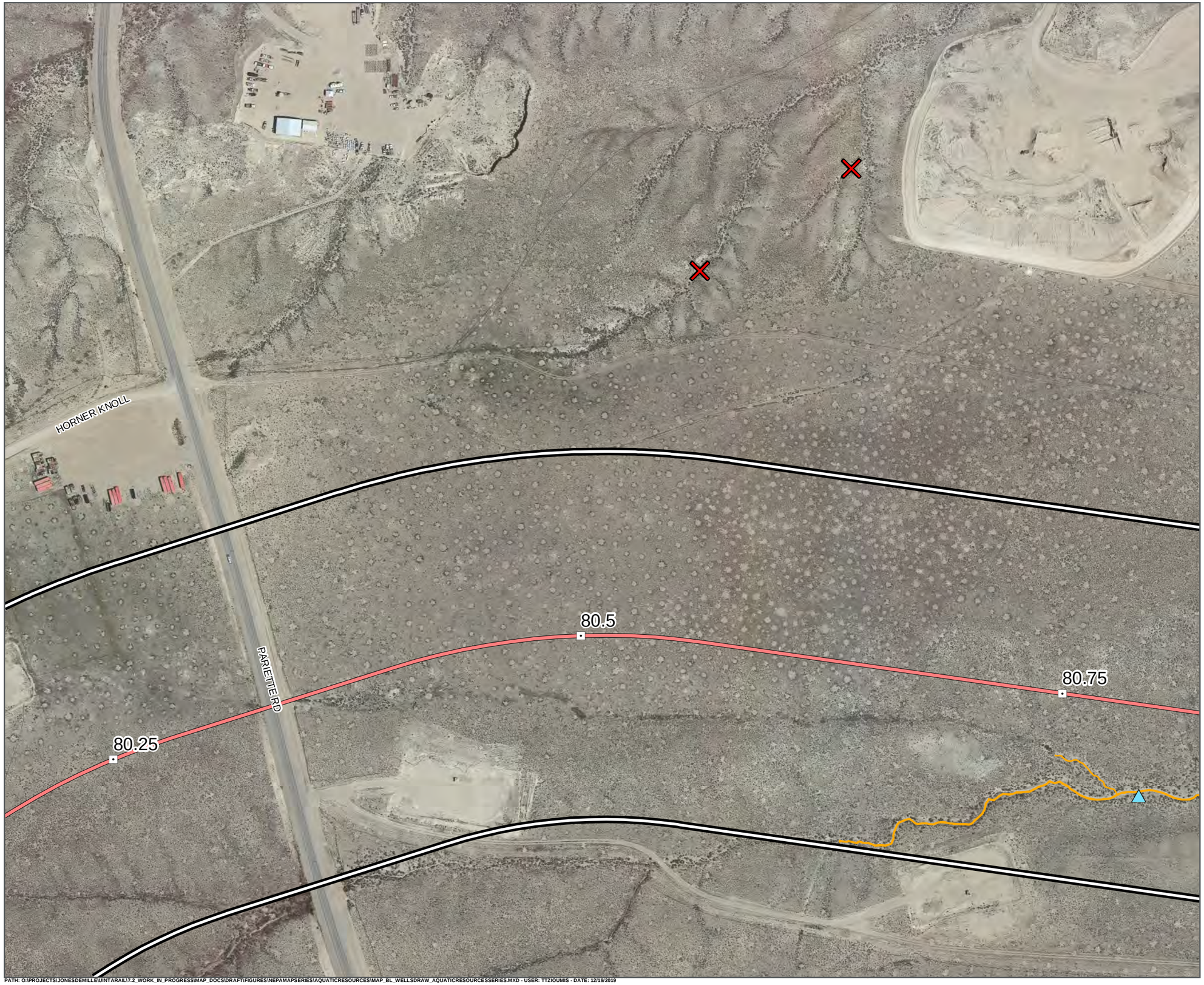
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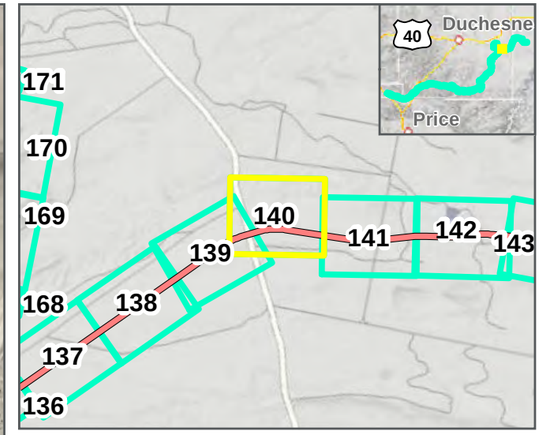
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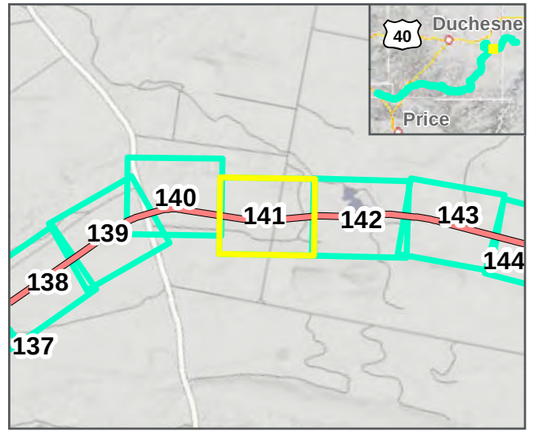
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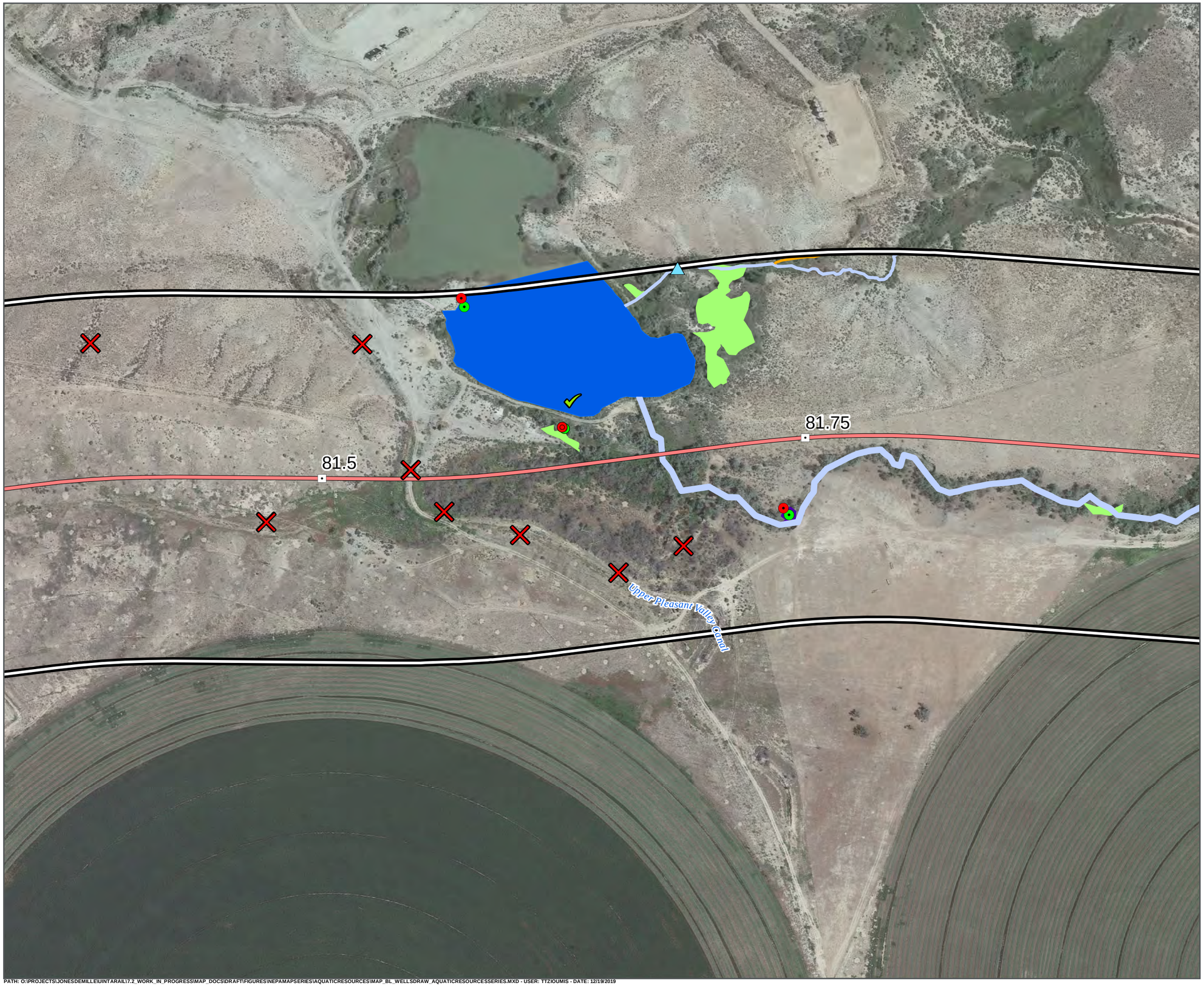
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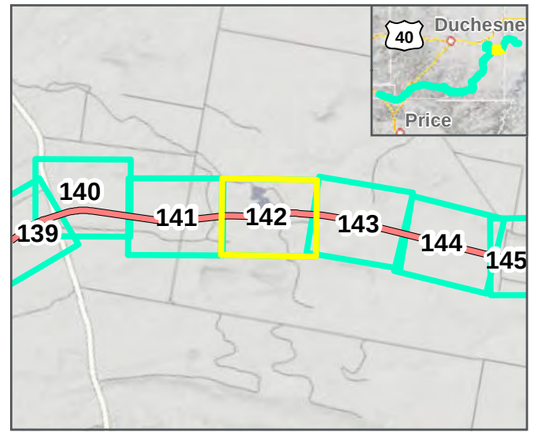
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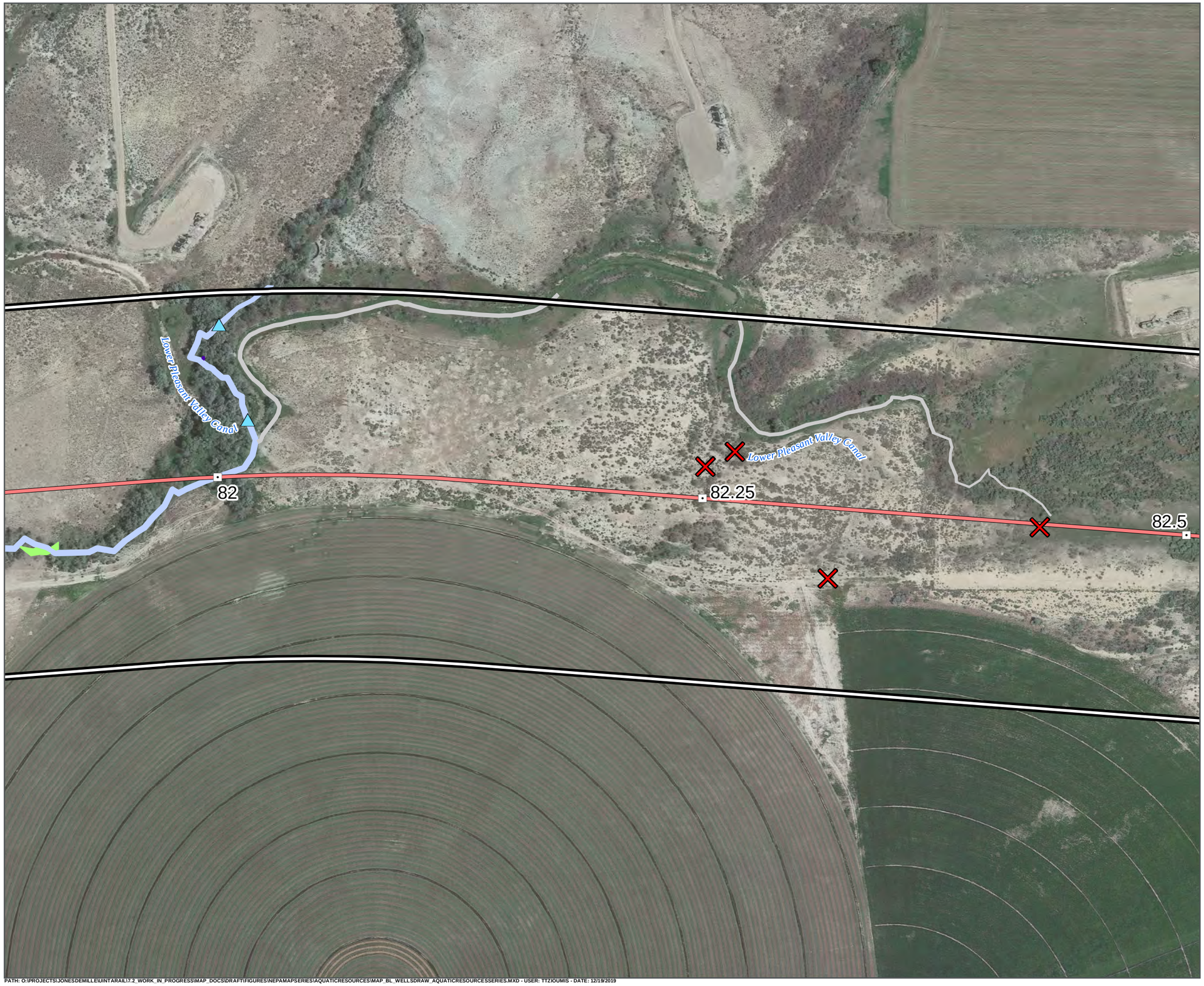
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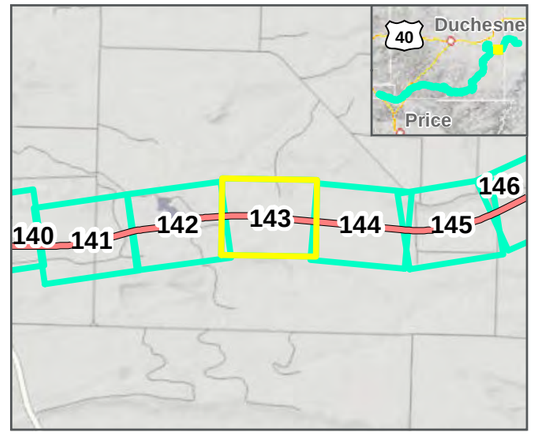
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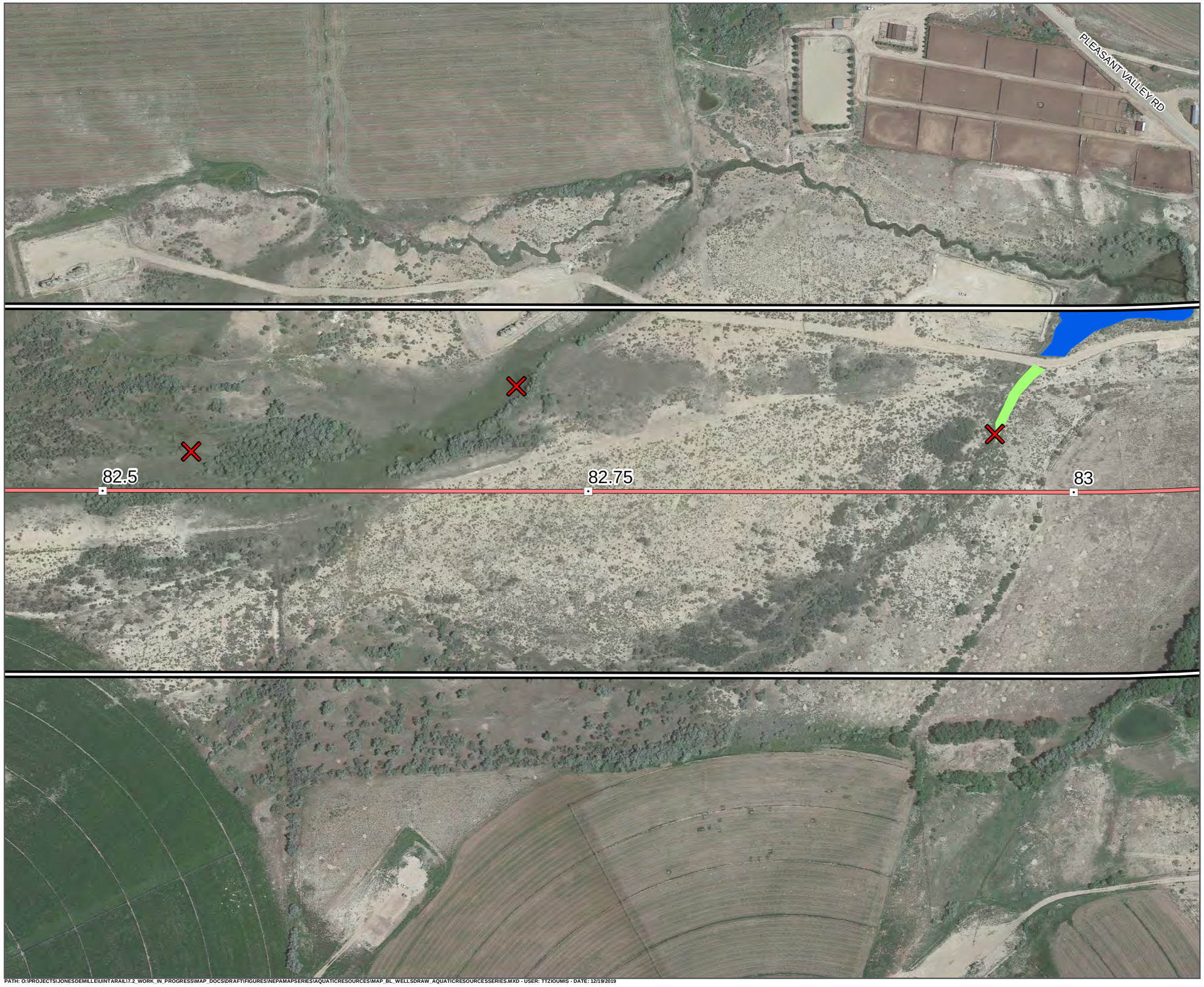
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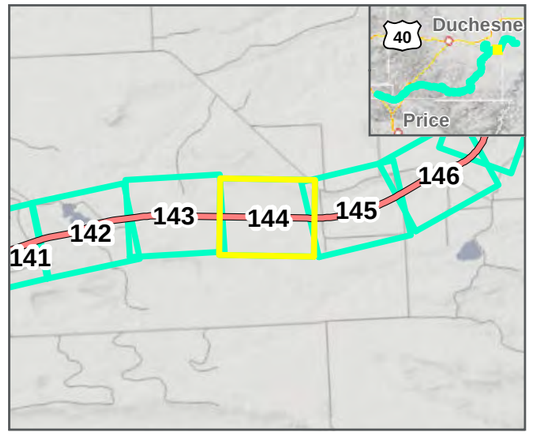
DATA SOURCES:
HDR Field Work & Engineering 2019
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COODINATE SYSTEM:
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SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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WELLS DRAW ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

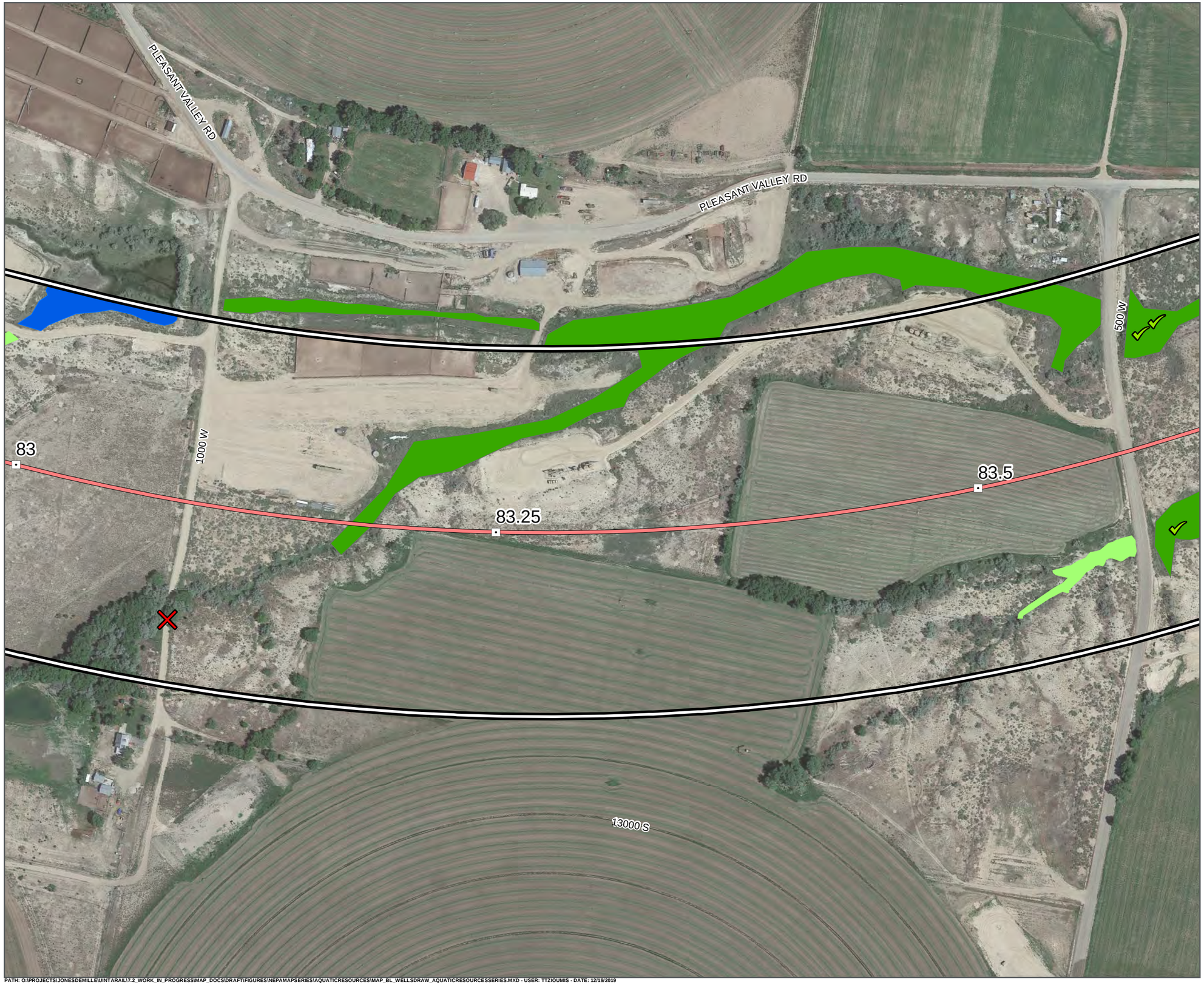
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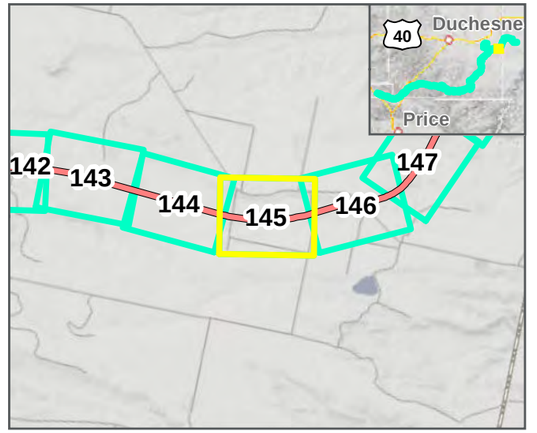
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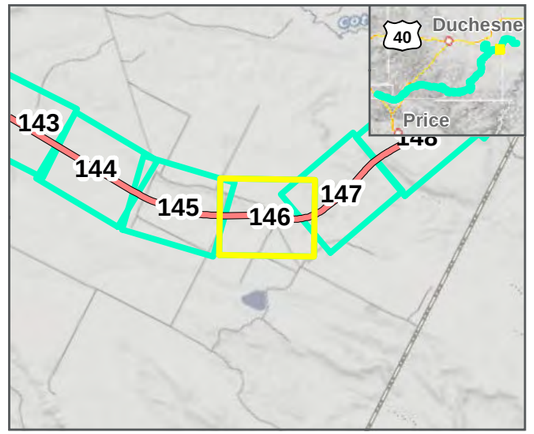
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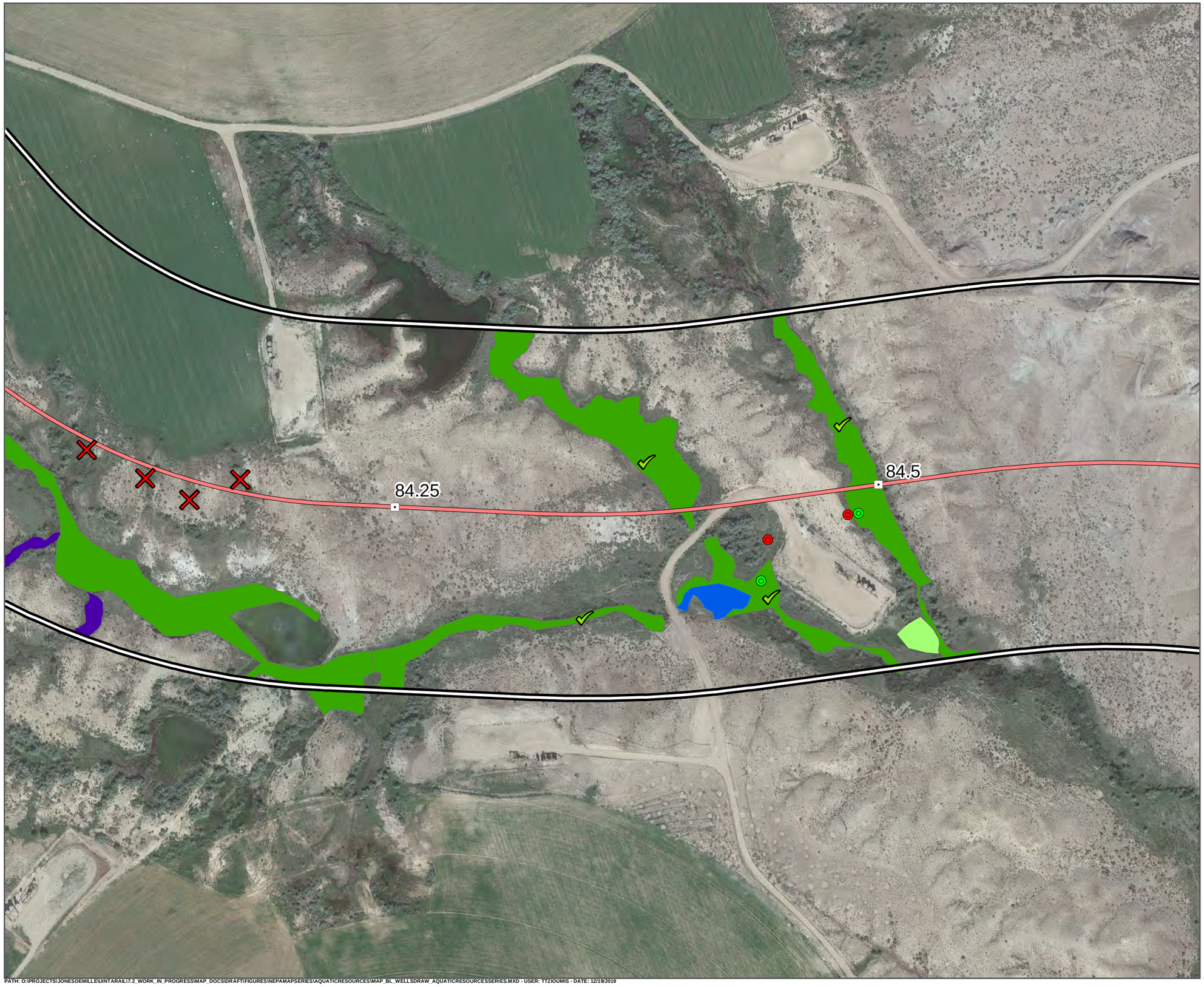
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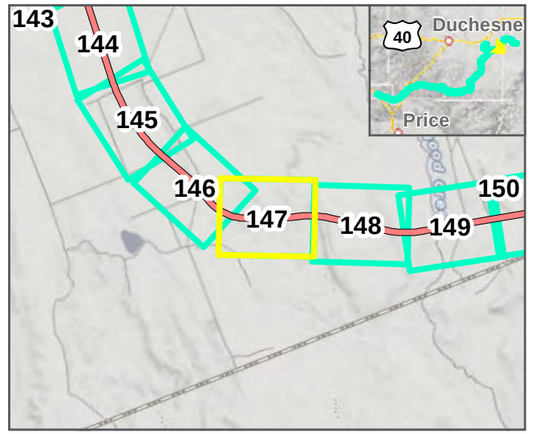
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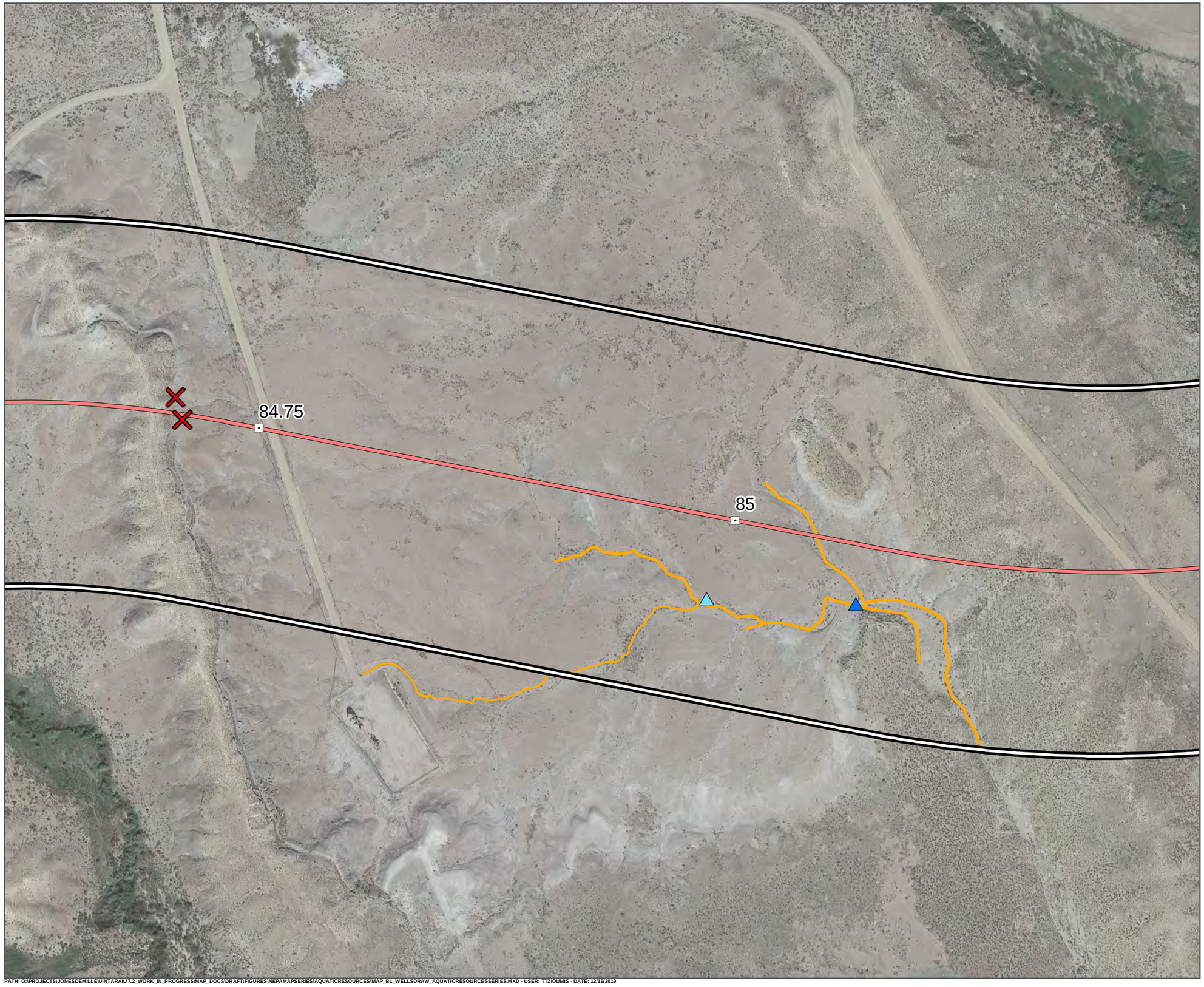
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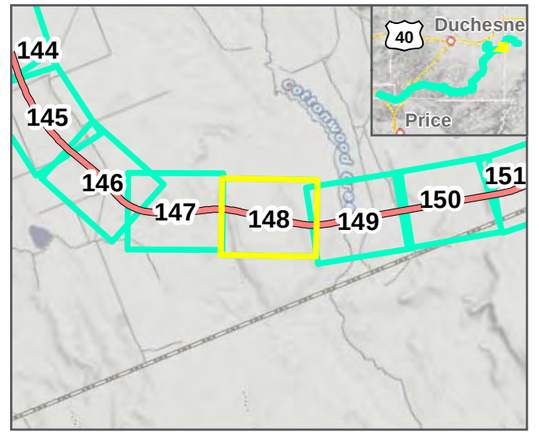
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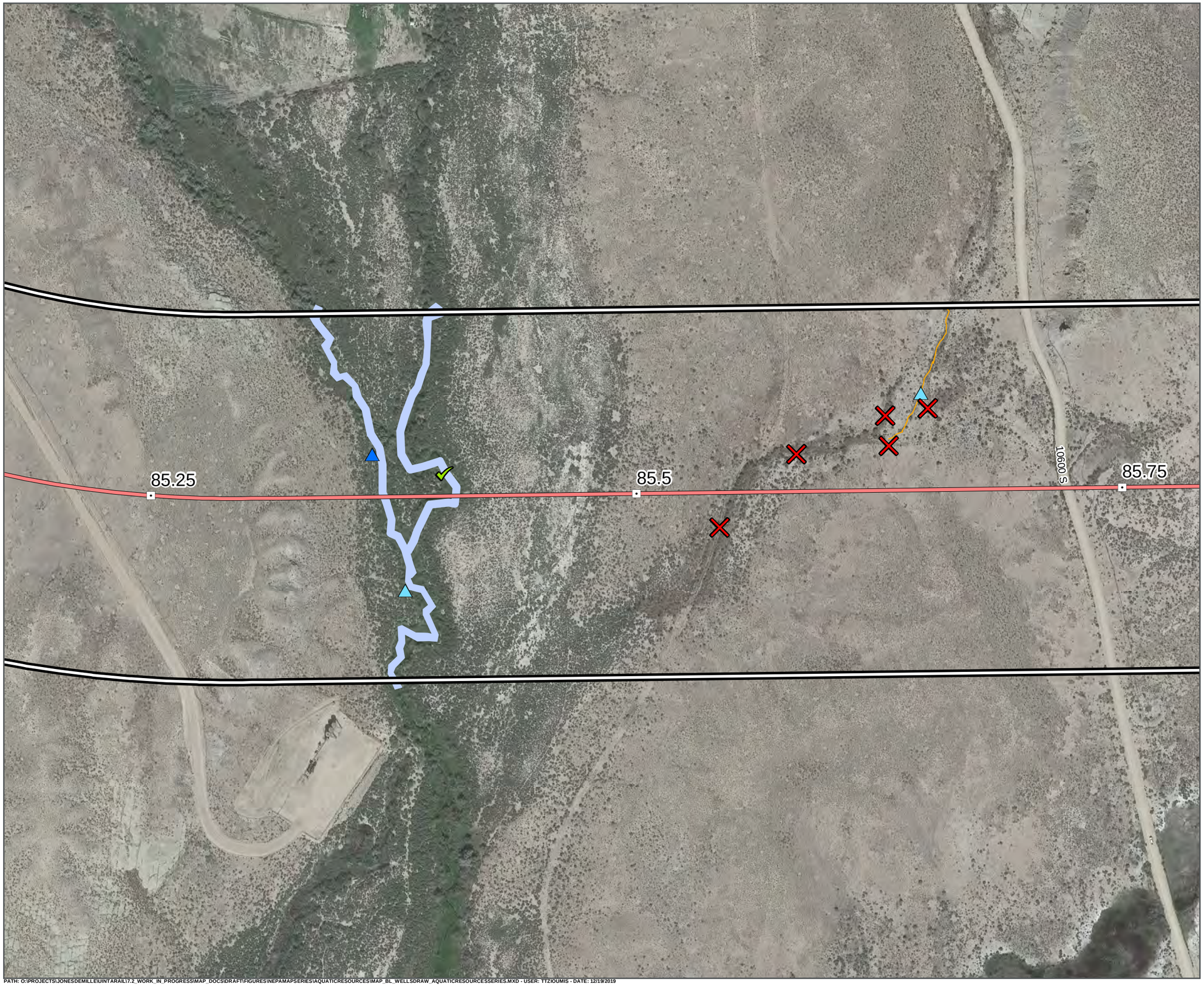
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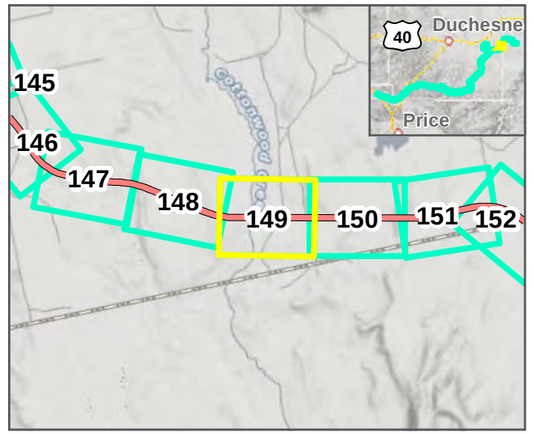
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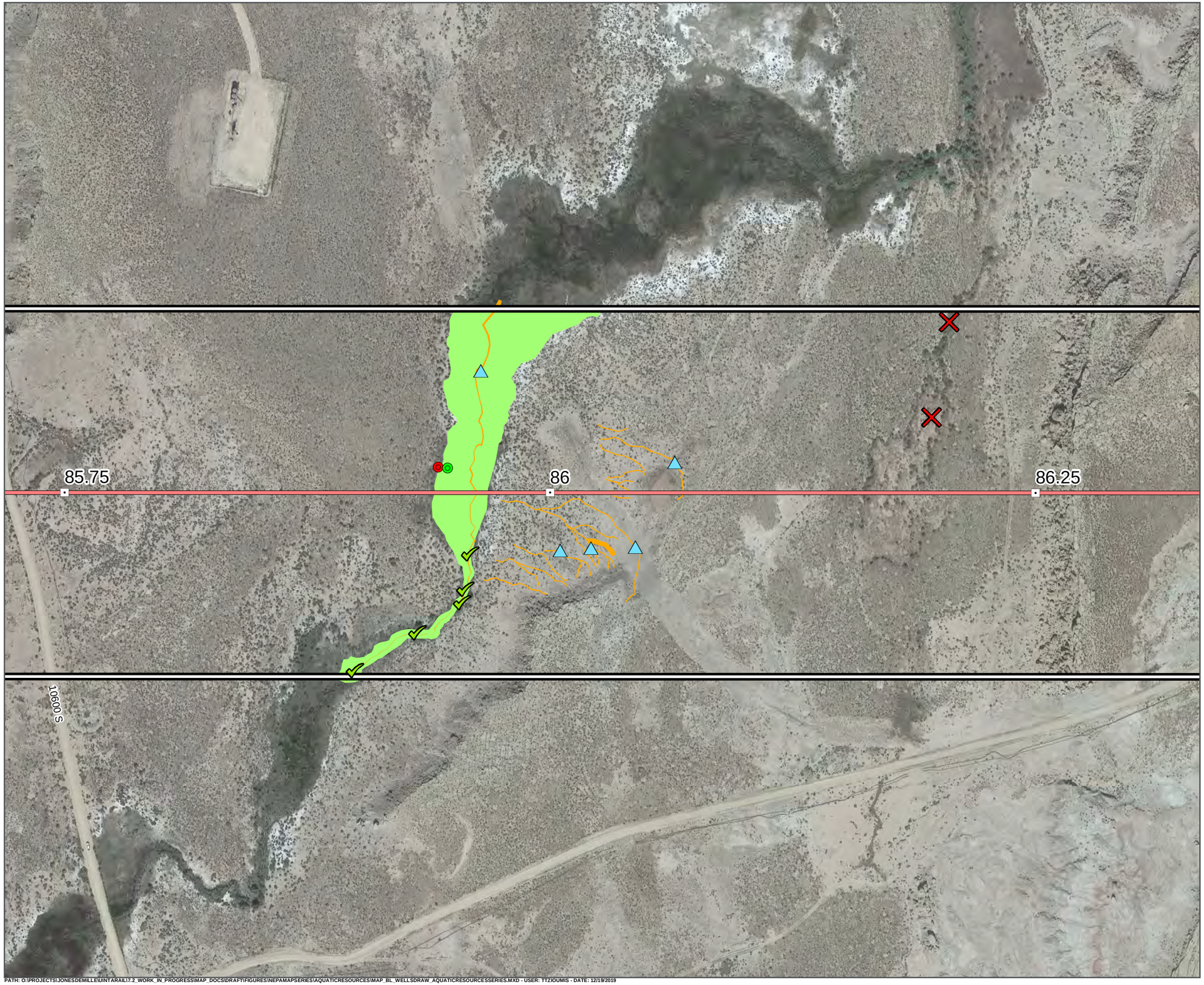
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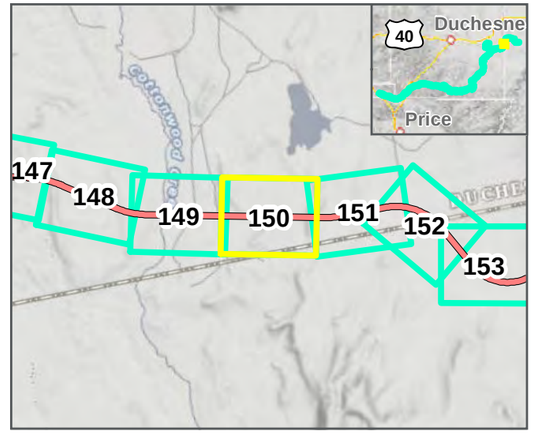
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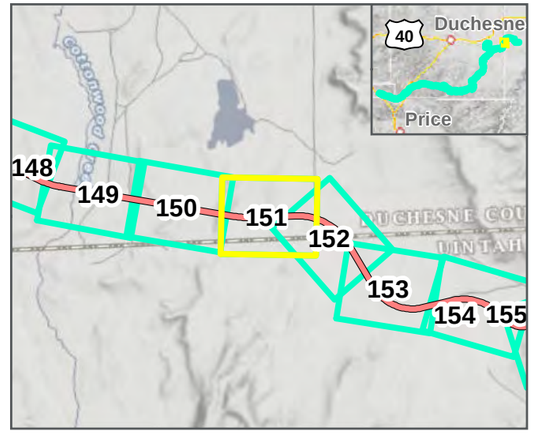
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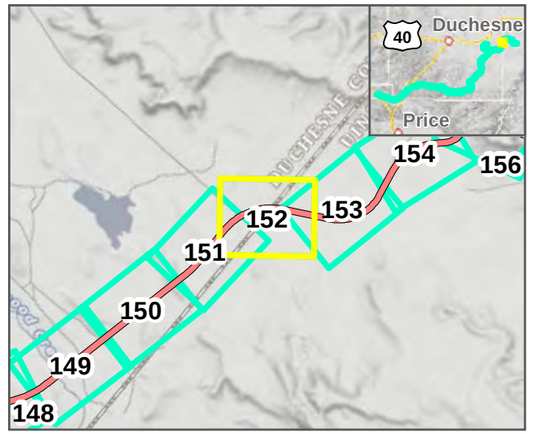
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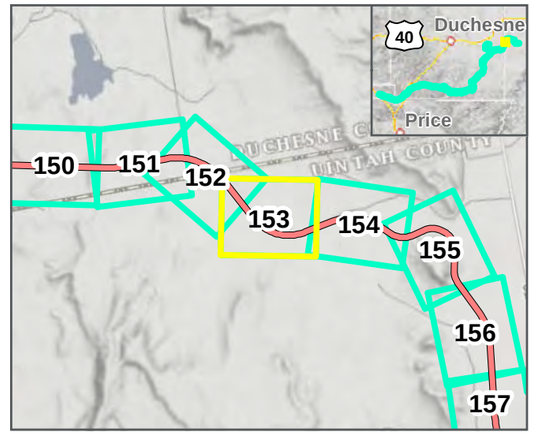
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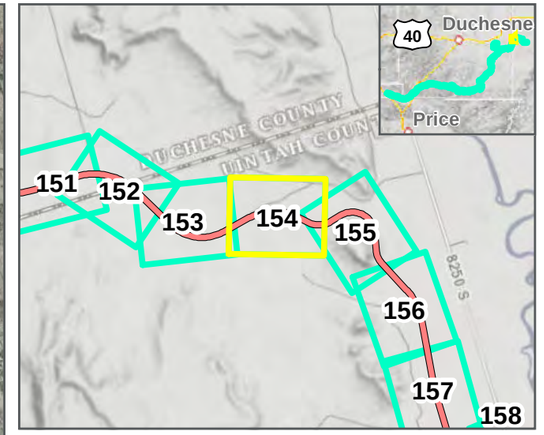
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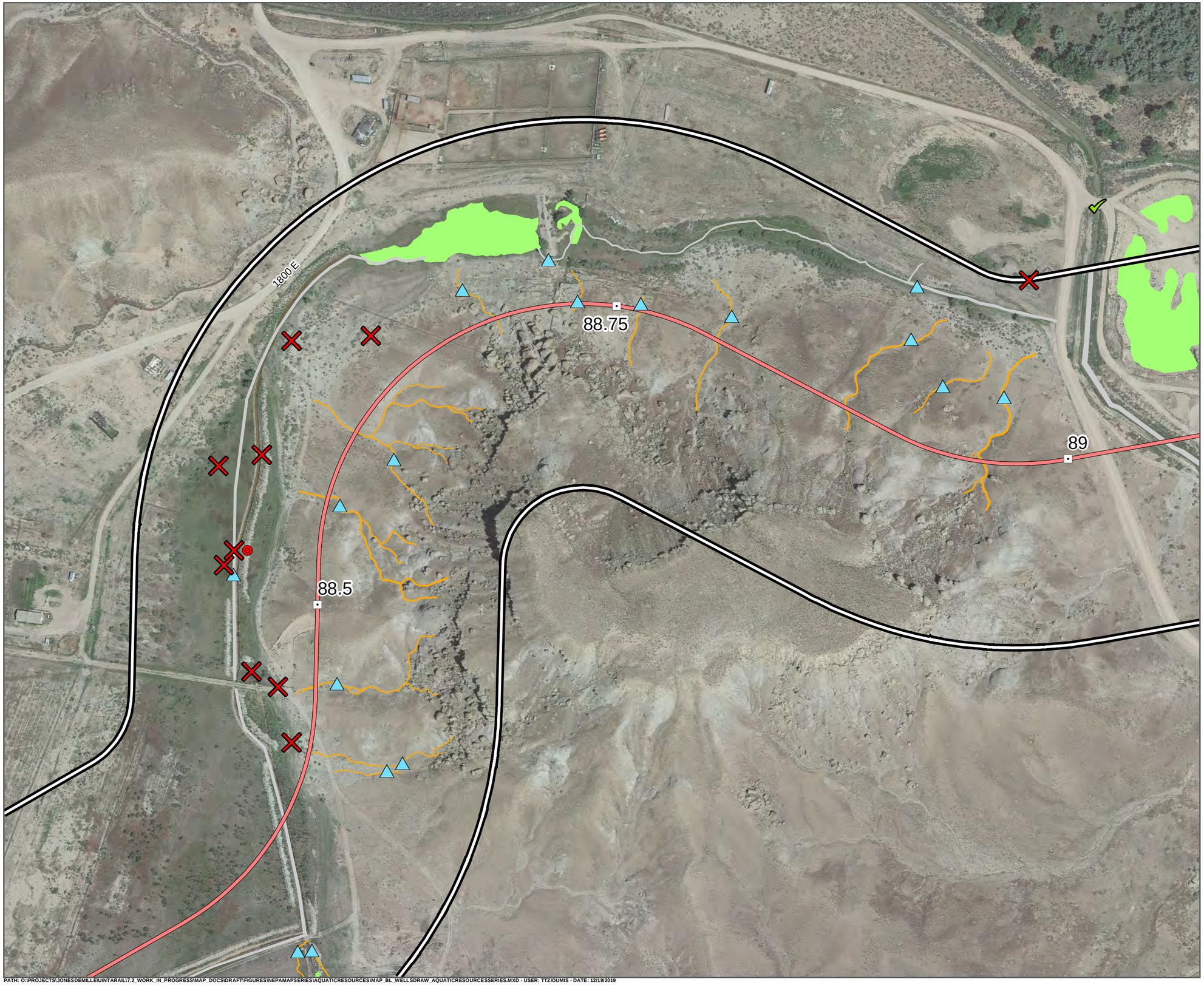
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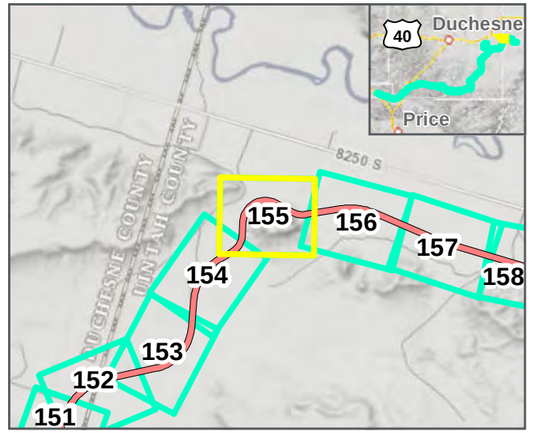
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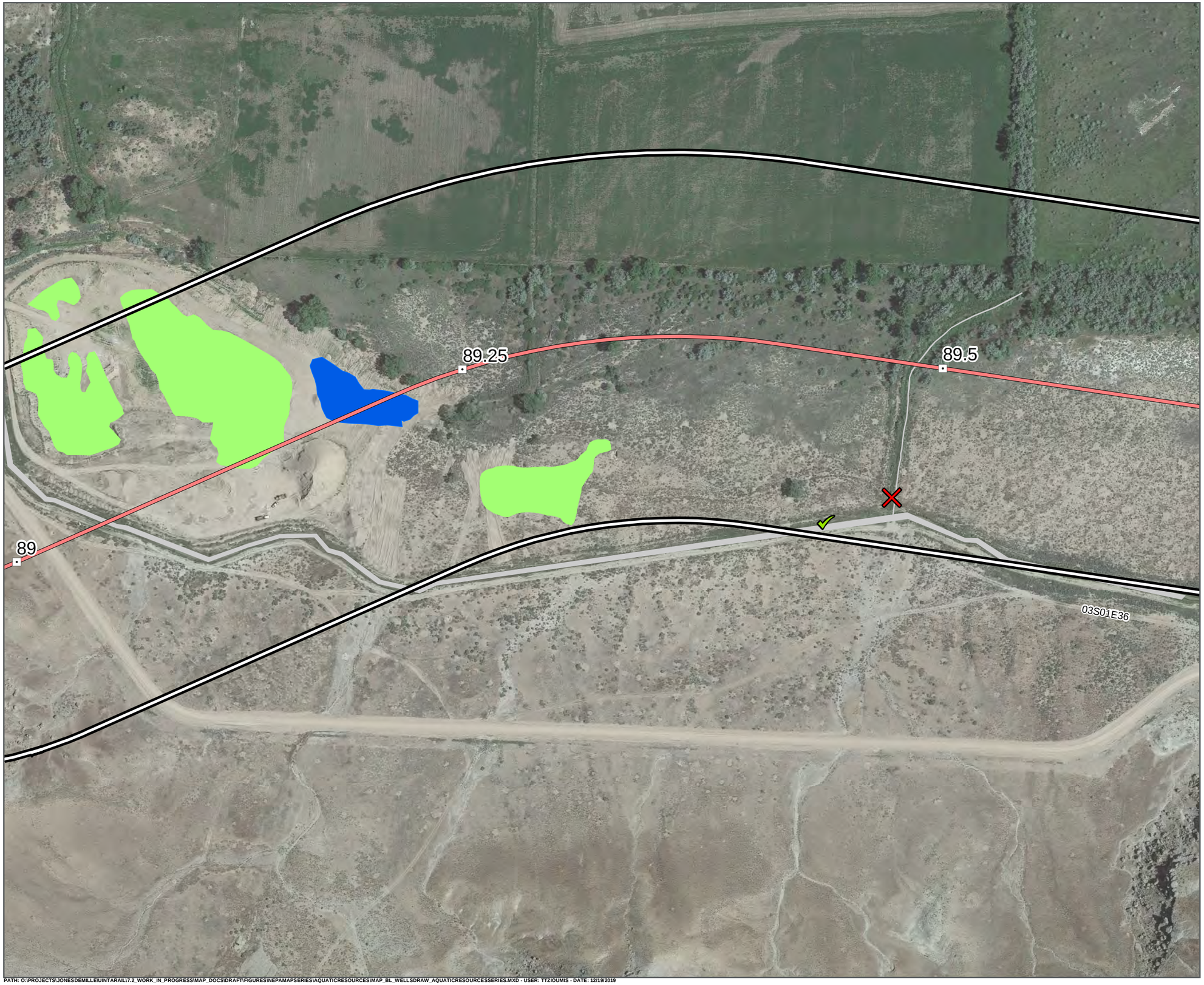
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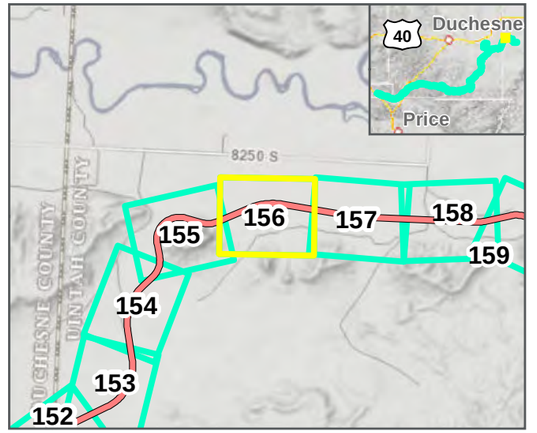
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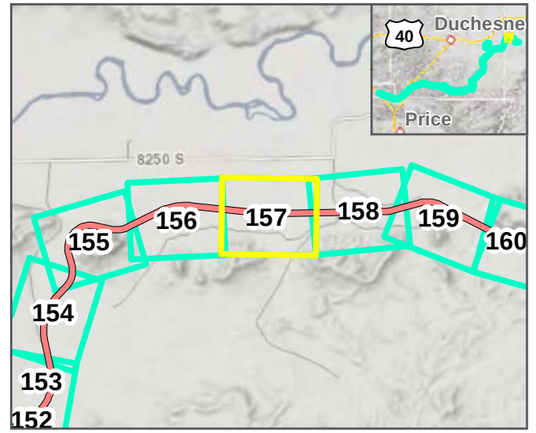
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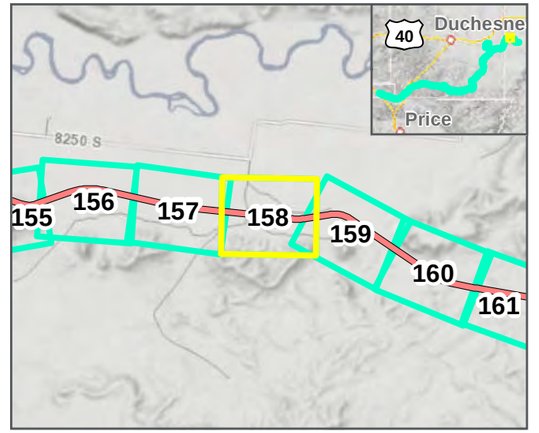
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1 inch = 250 Feet

DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery
Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

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WELLS DRAW ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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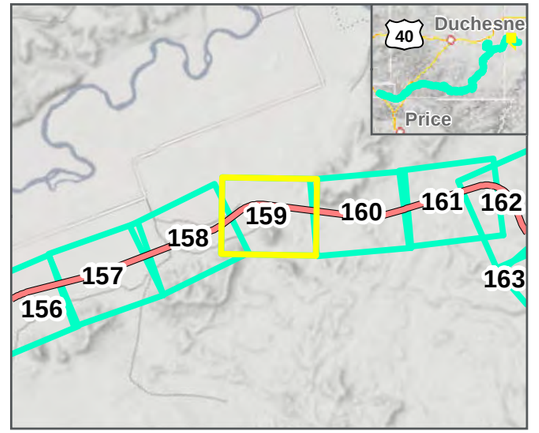
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Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

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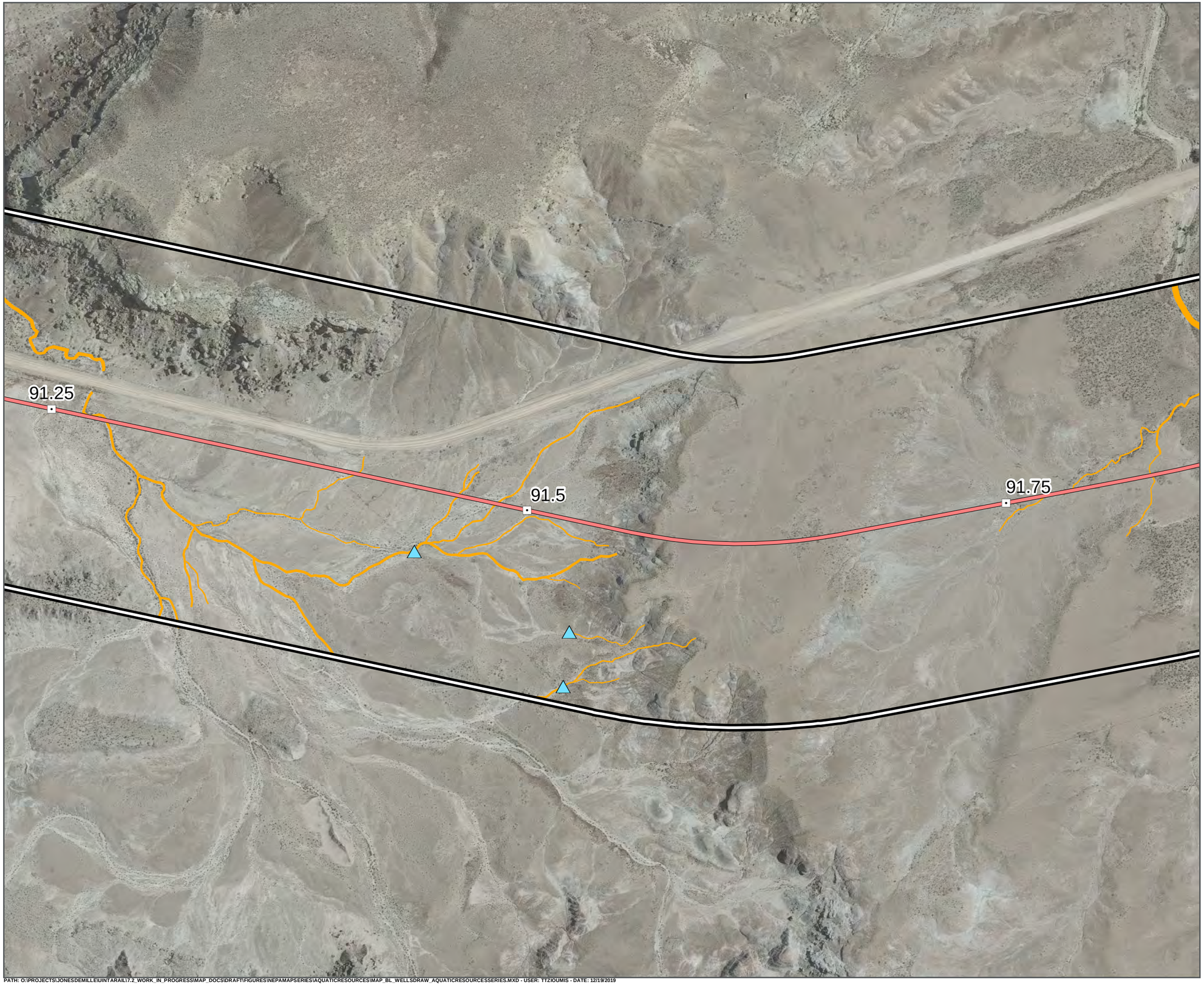
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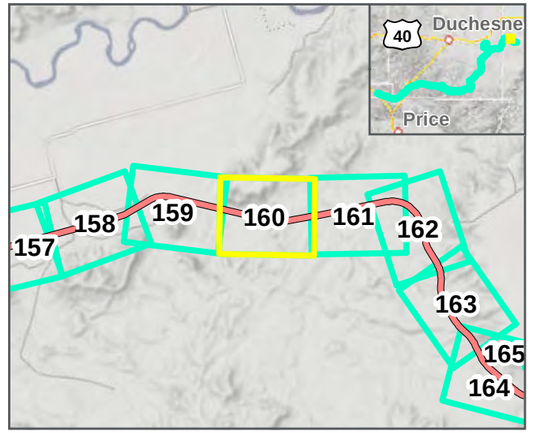
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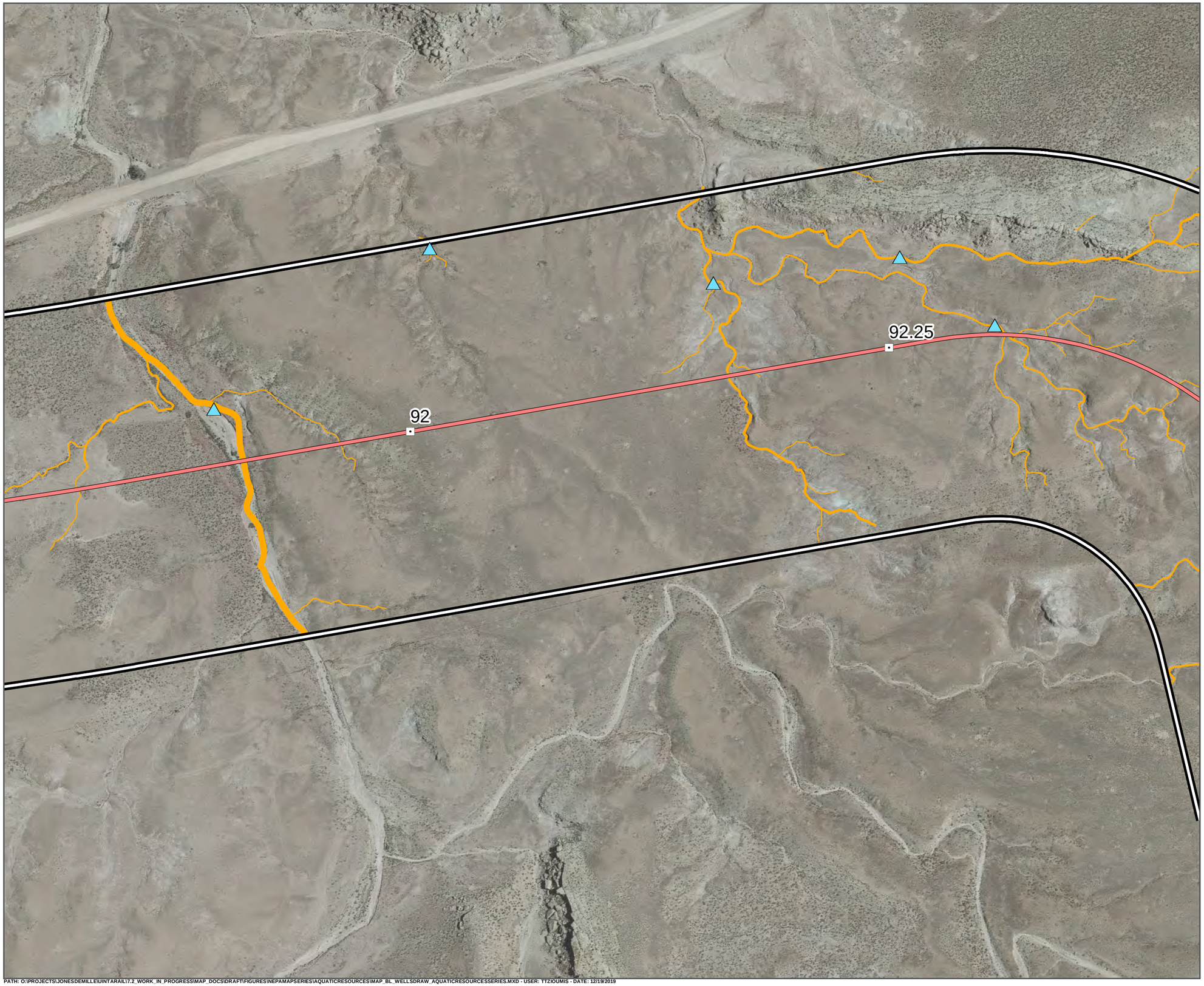
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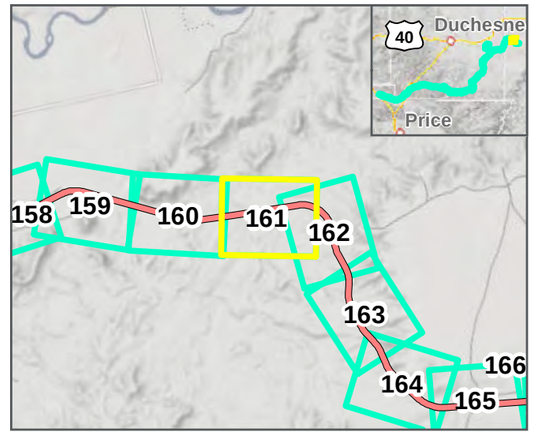
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Seven County Infrastructure Coalition

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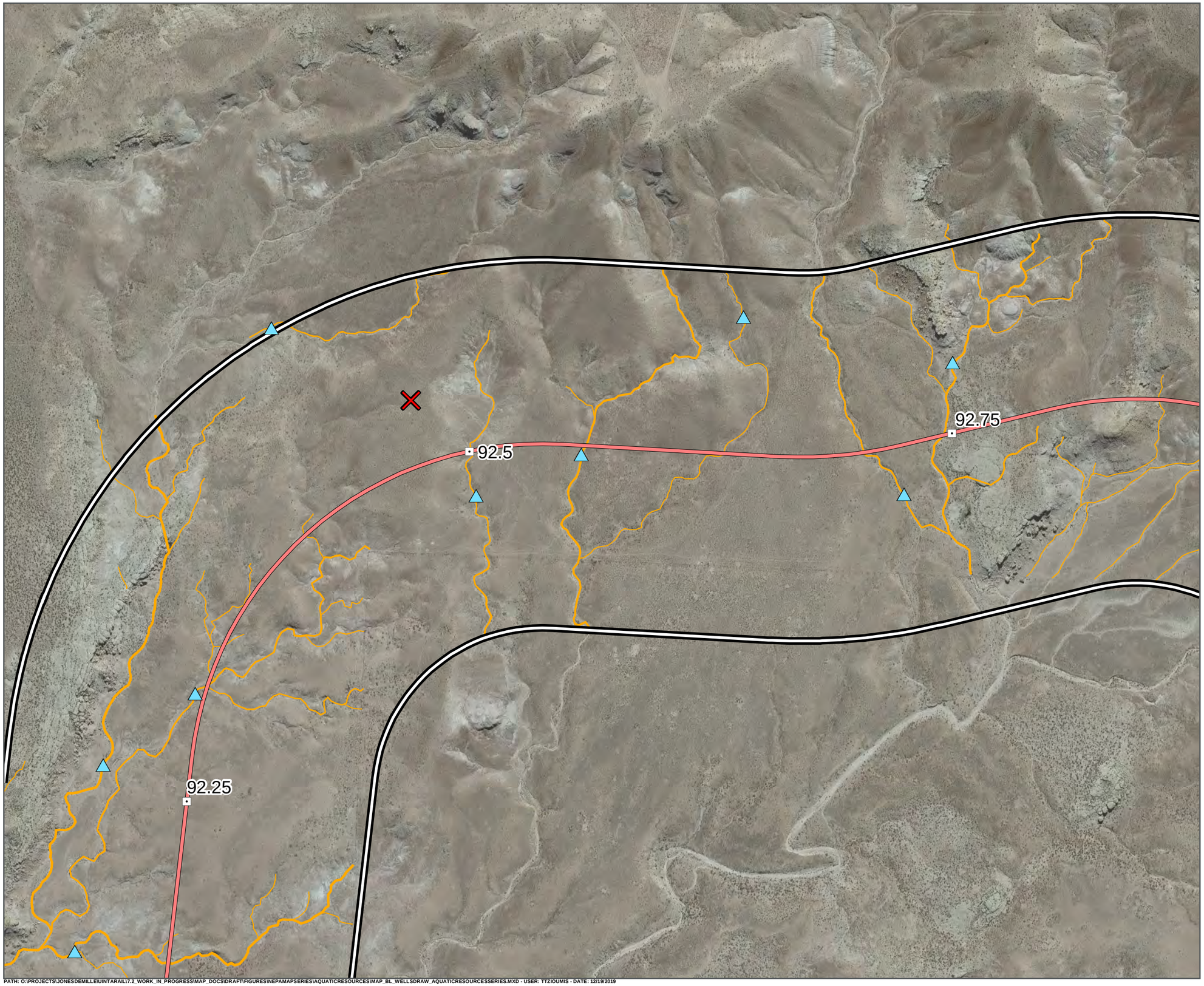
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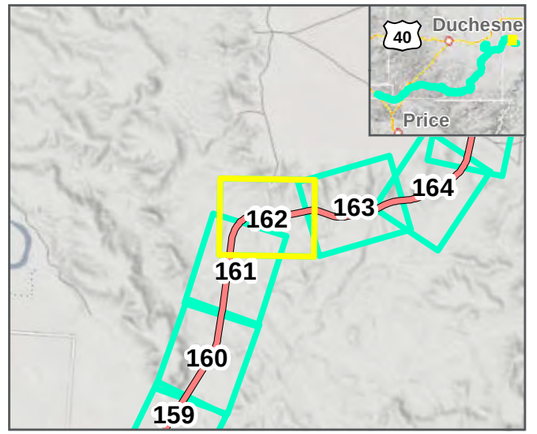
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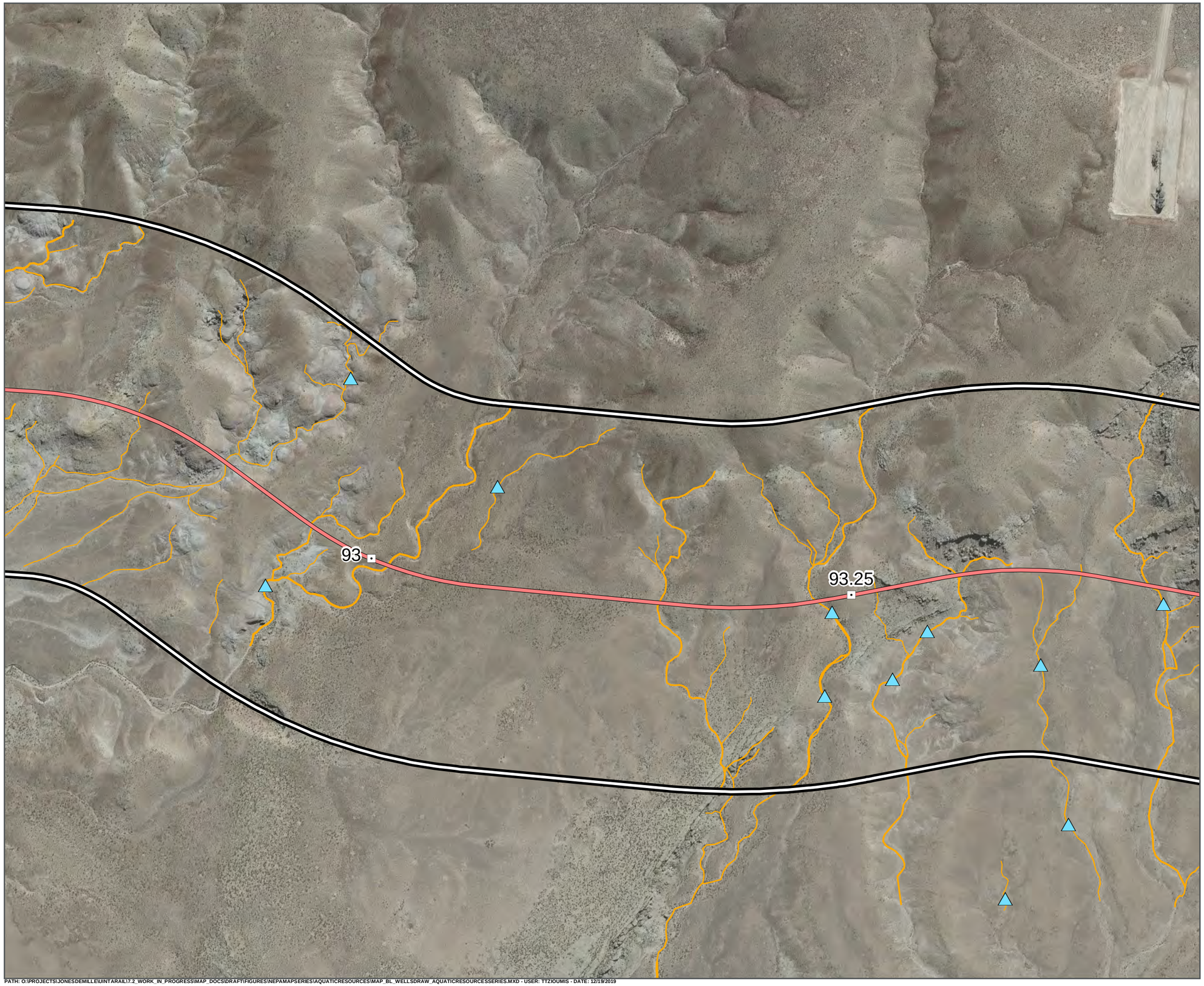
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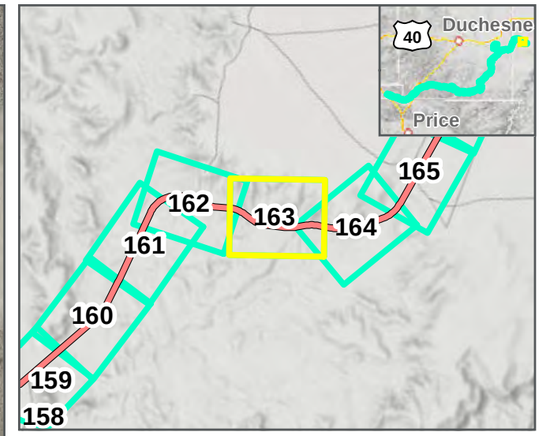
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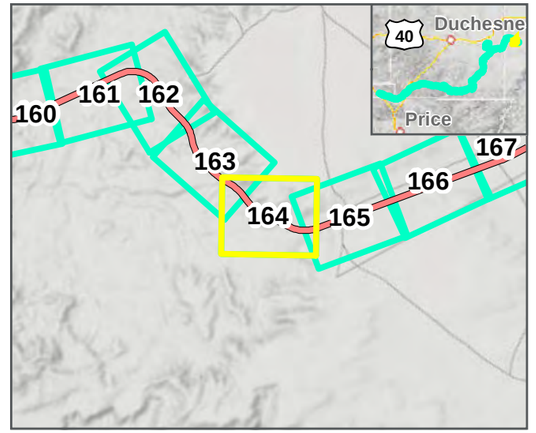
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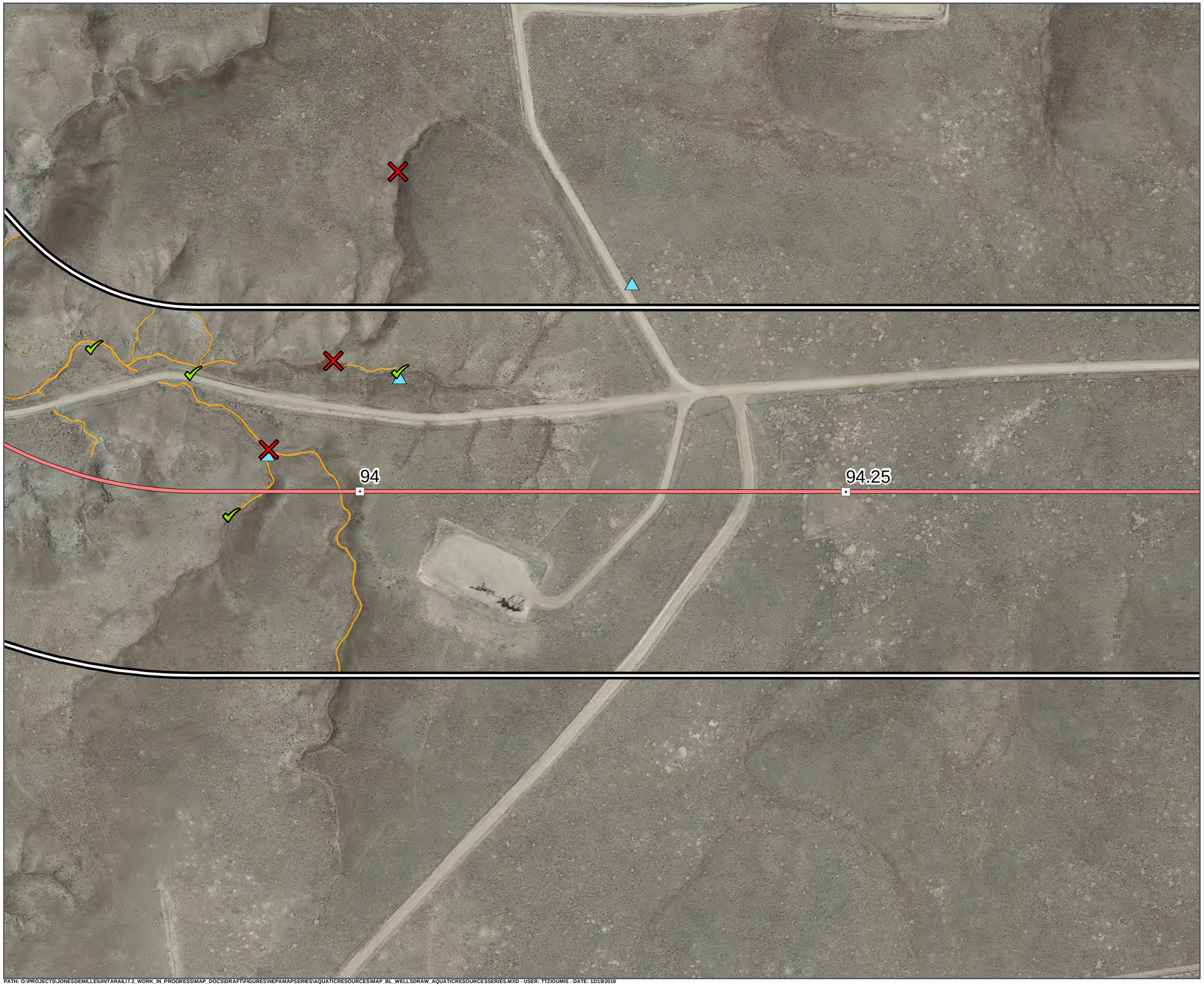
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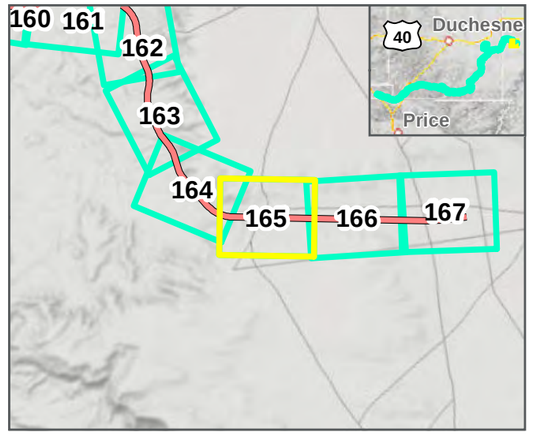
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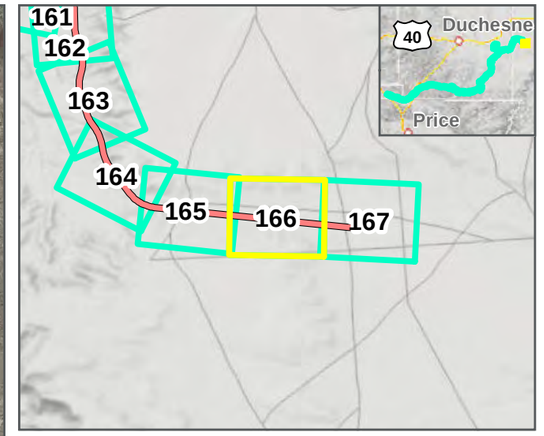
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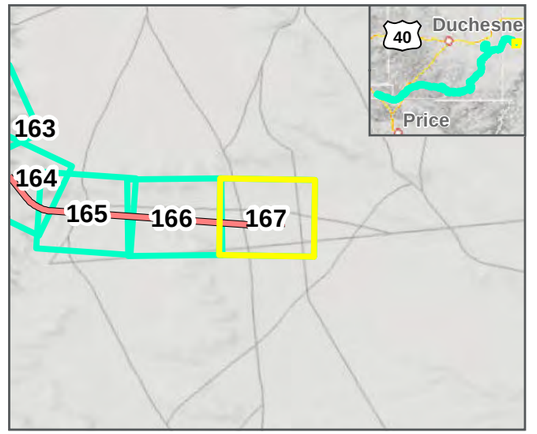
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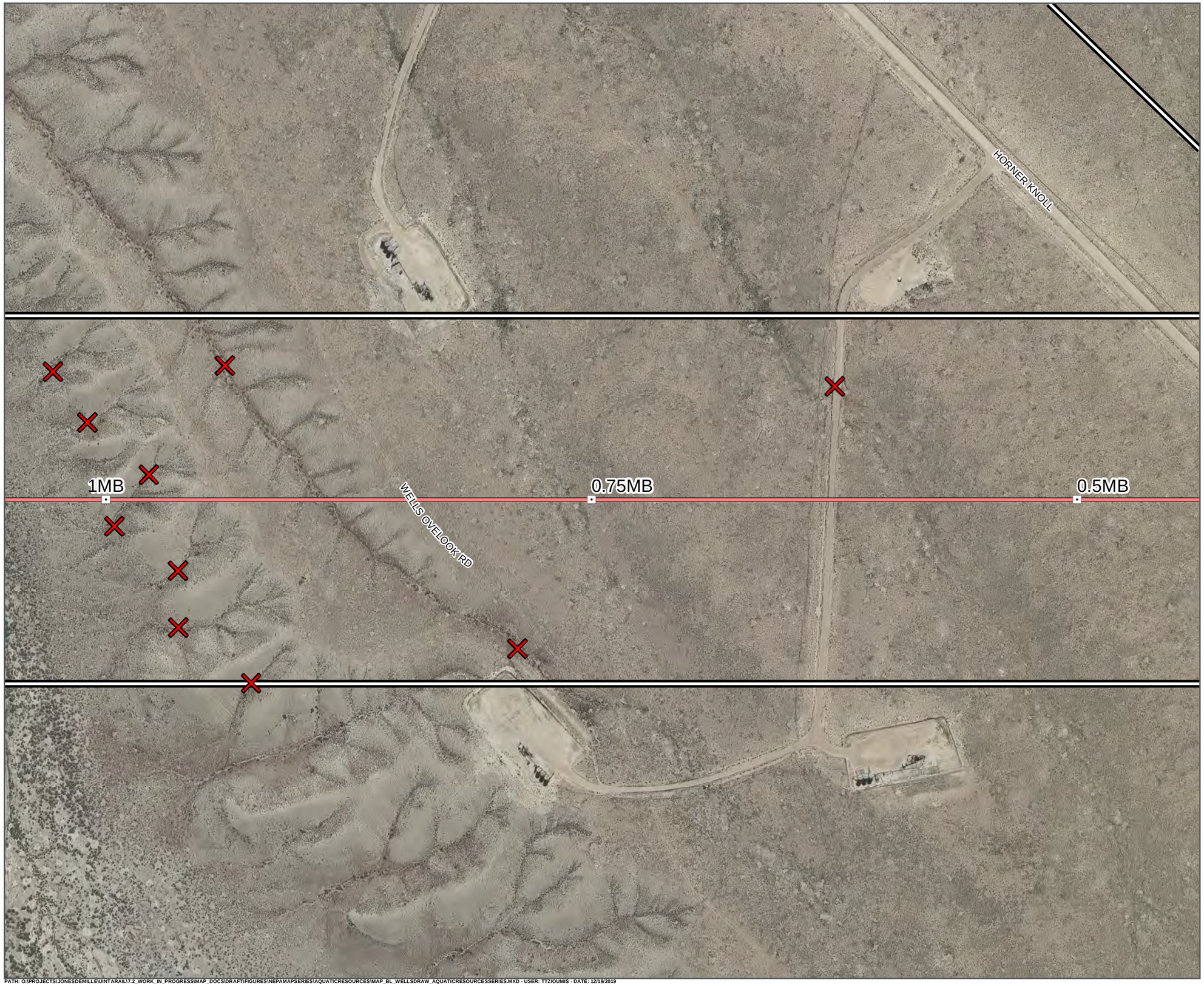
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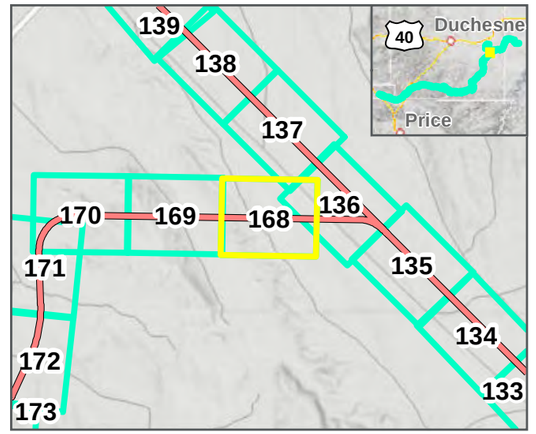
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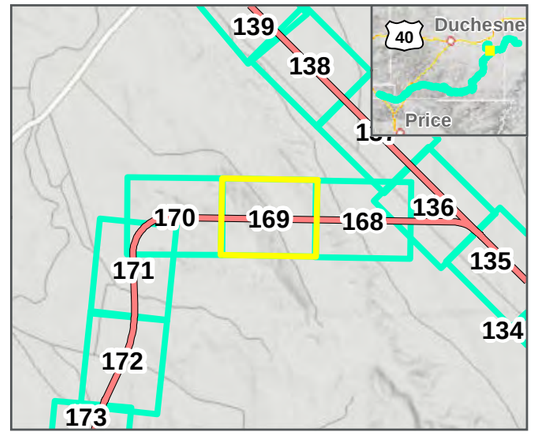
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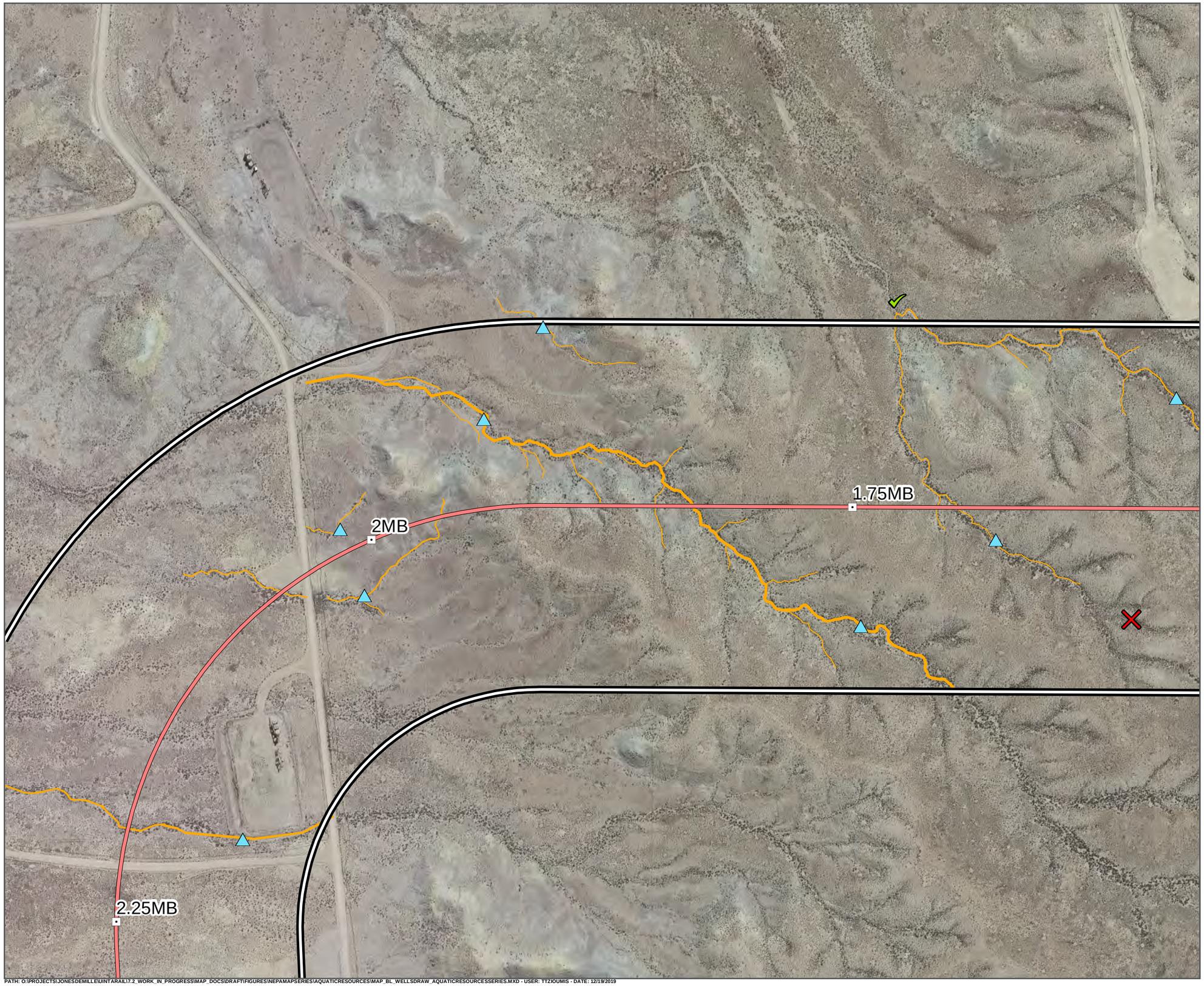
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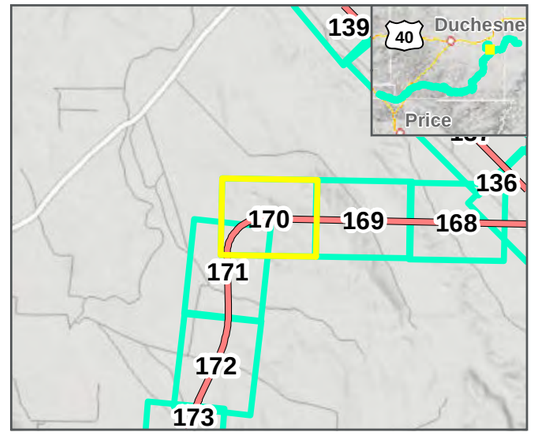
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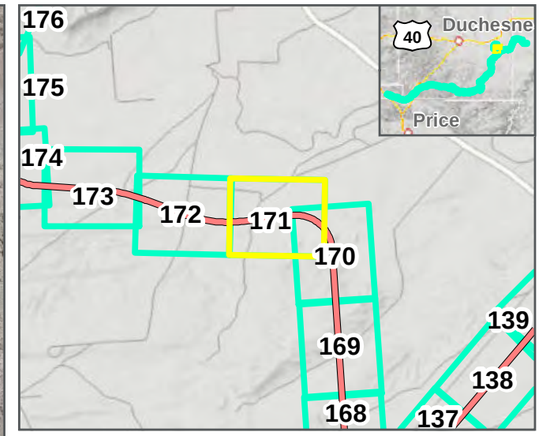
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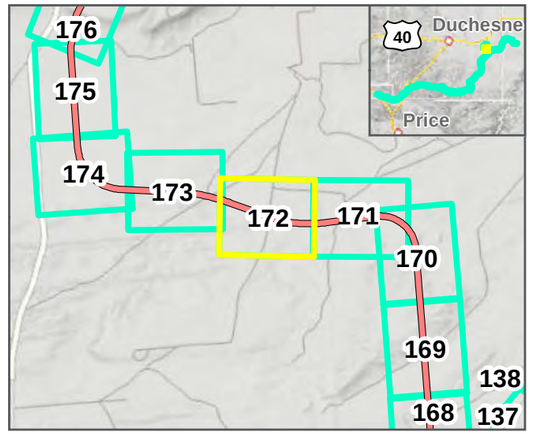
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- Milepost
- Wells Draw Centerline
- Areas Not Surveyed (Data Digitized)
- In Point 2019
- Out Point 2019
- In Point 2014
- Out Point 2014
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- Waterway Points 2014
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- Shrub-Scrub
- Playa
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- Perennial Stream
- Ephemeral/Intermittent Stream
- Ditch/Canal
- Study Area
- Map Extent (current view in yellow)

WELLS DRAW ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

N

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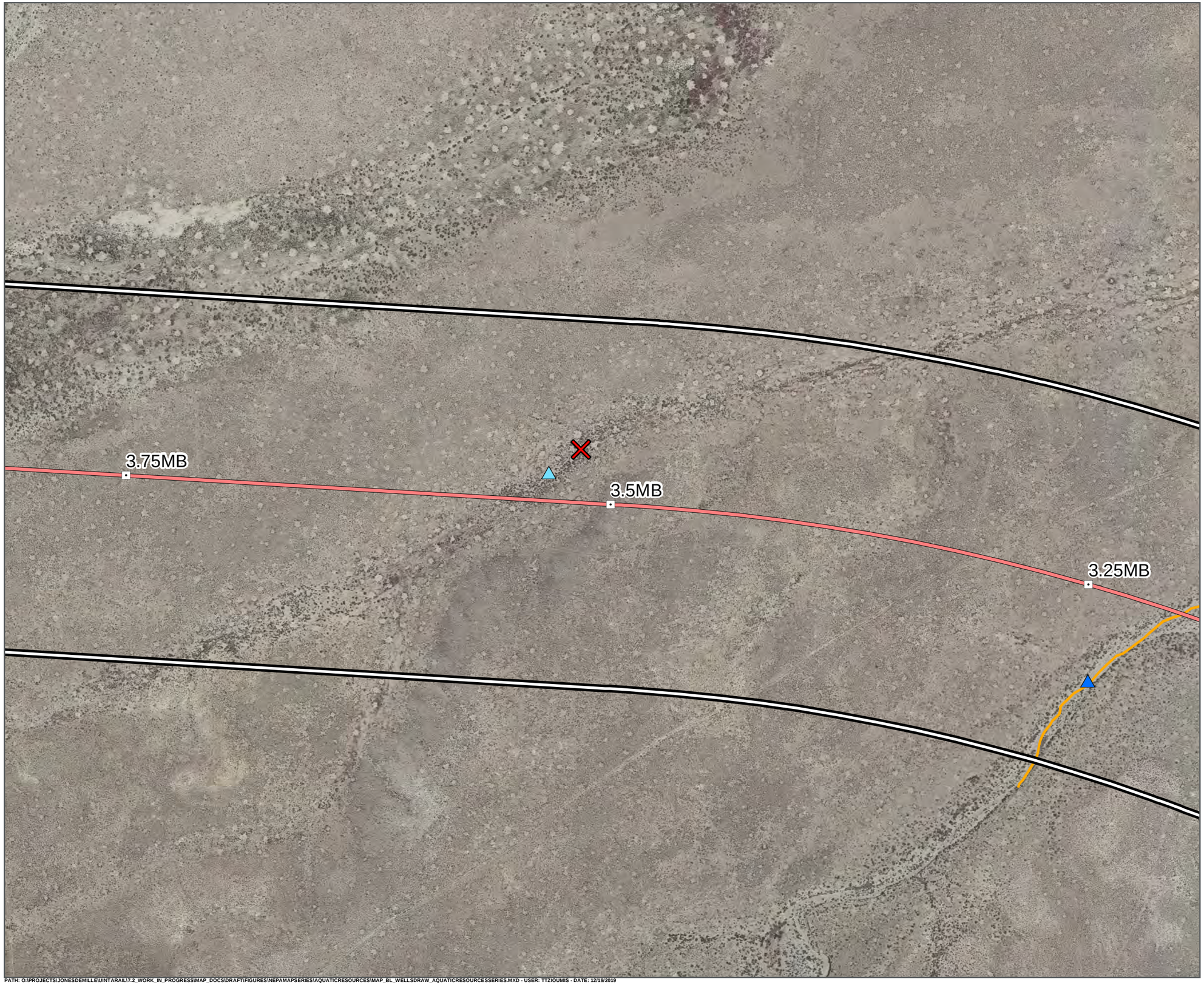
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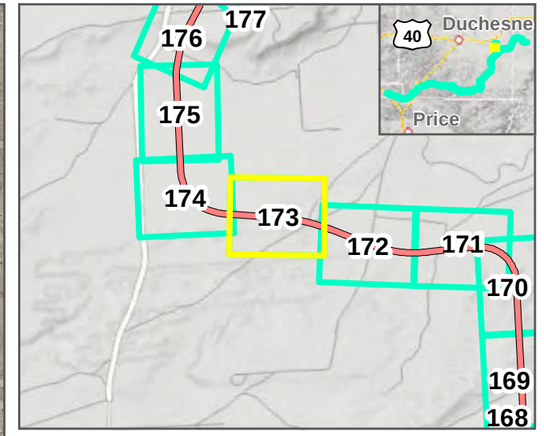
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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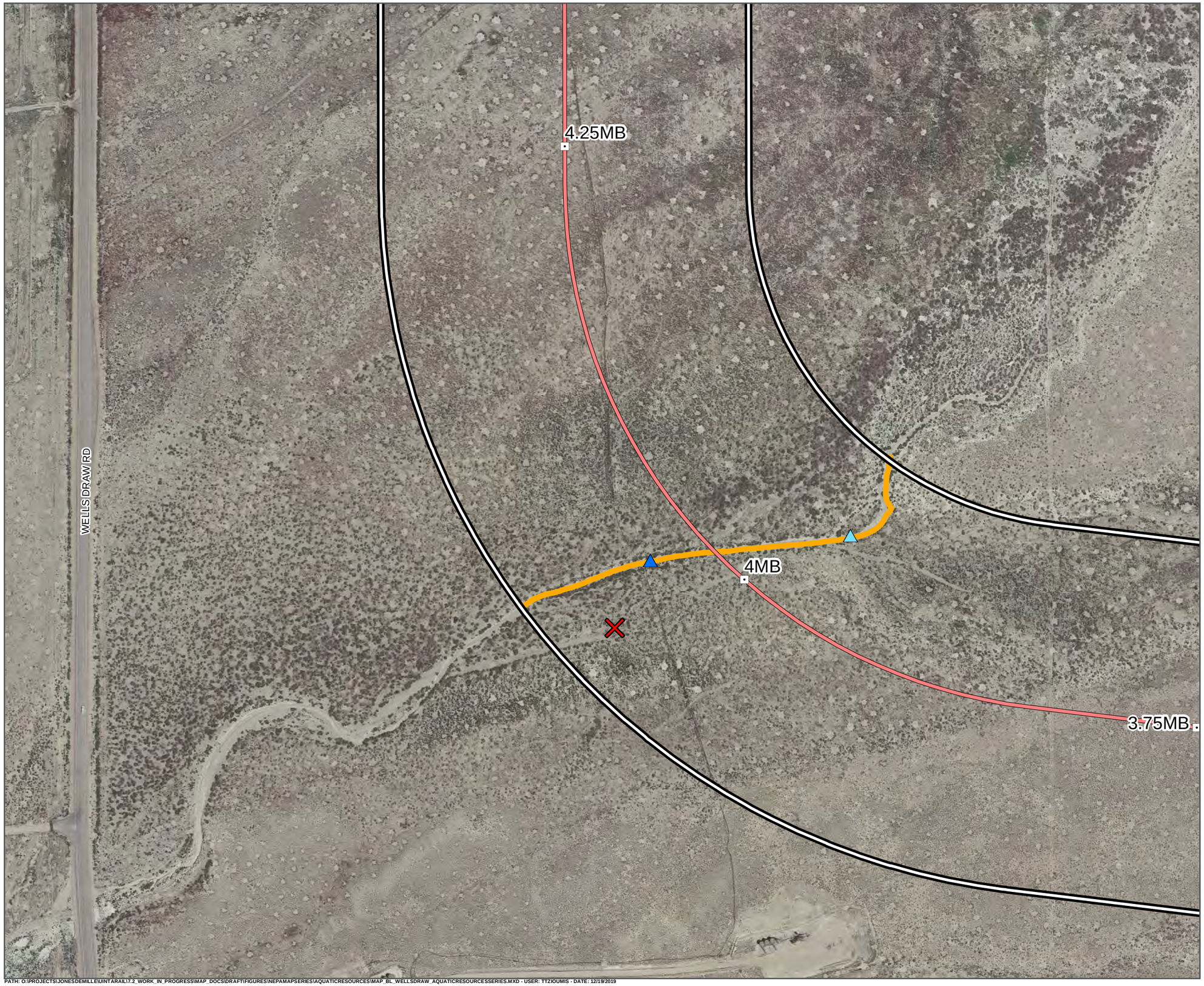
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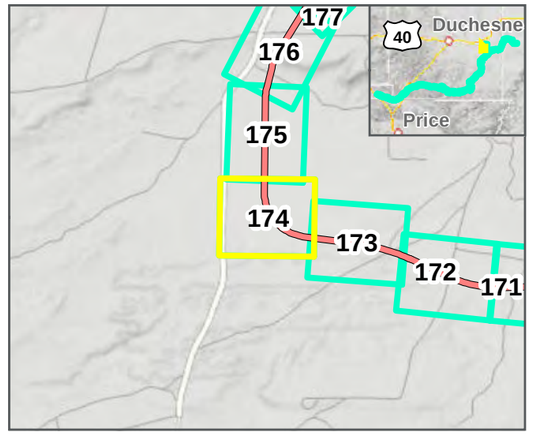
DATA SOURCES:
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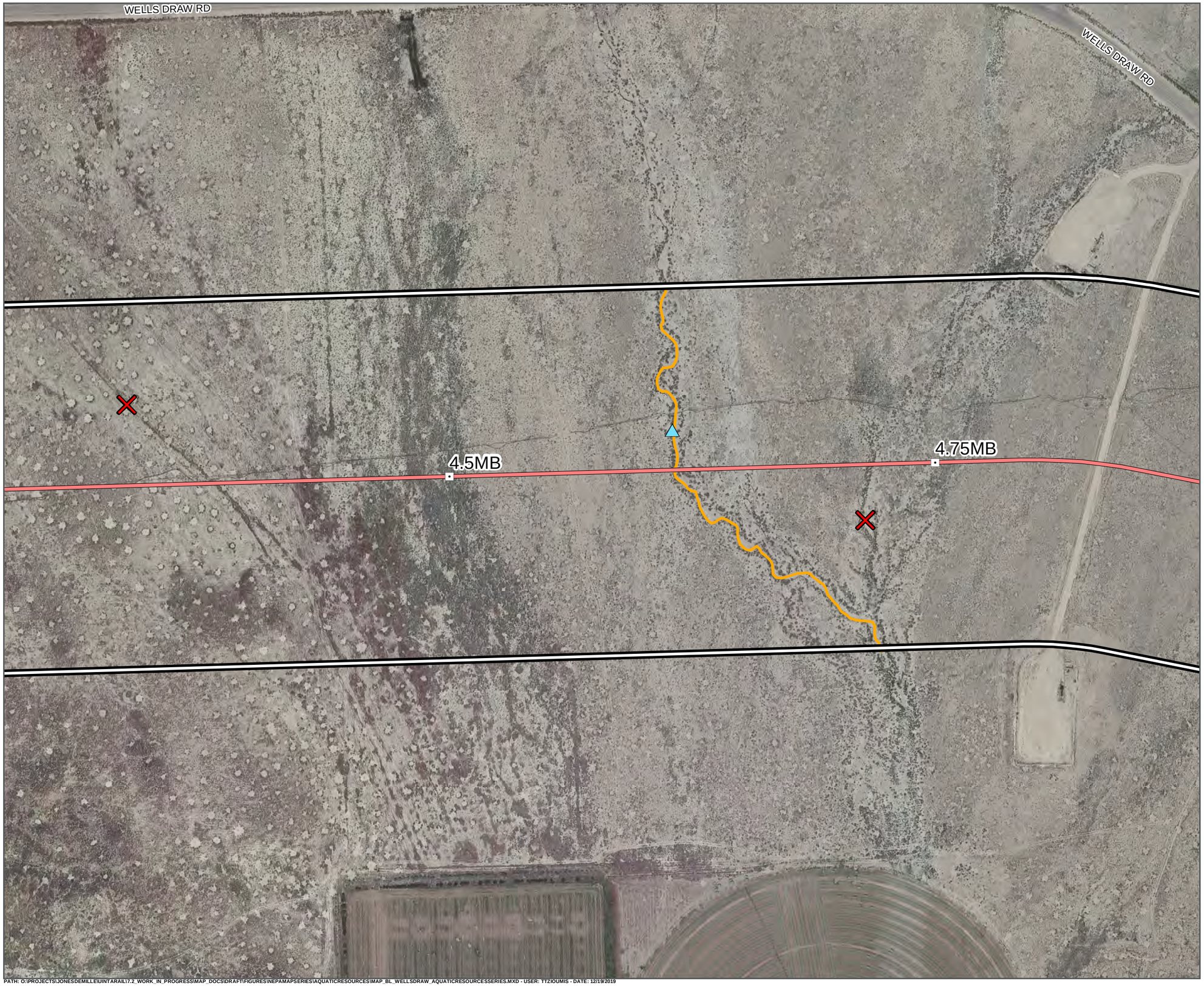
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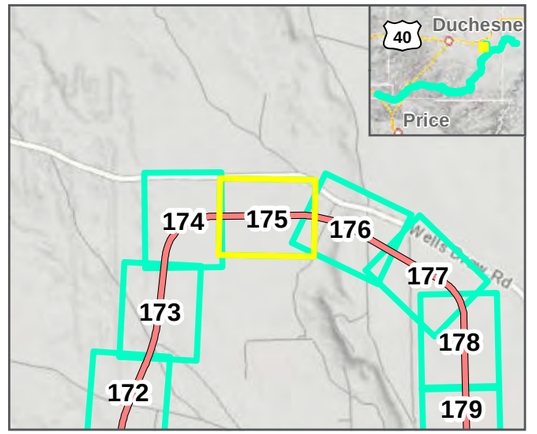
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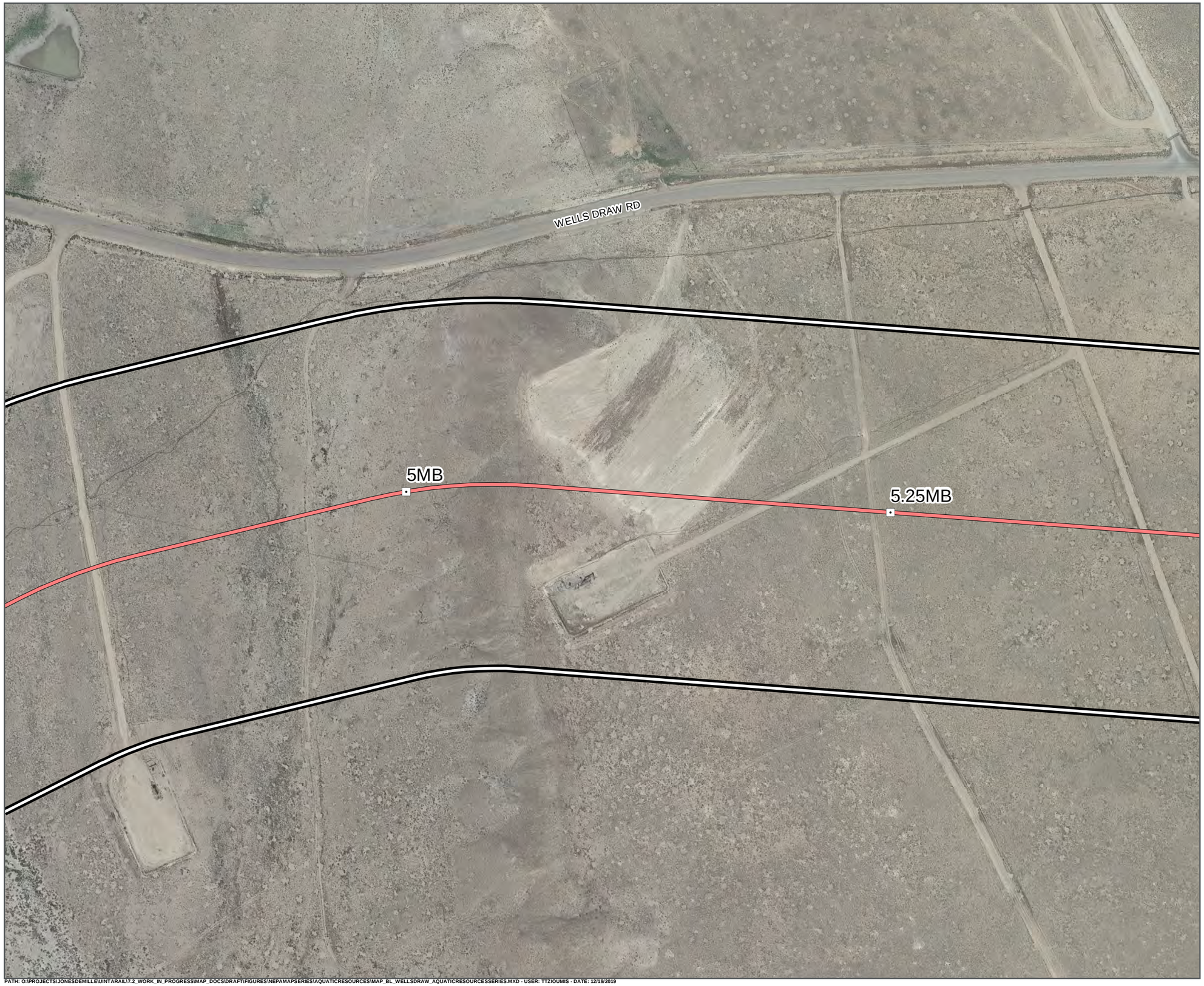
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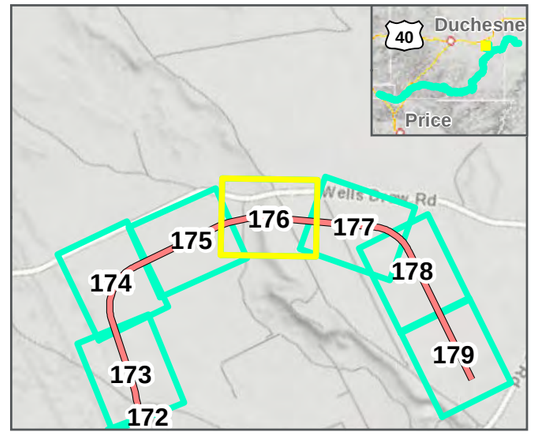
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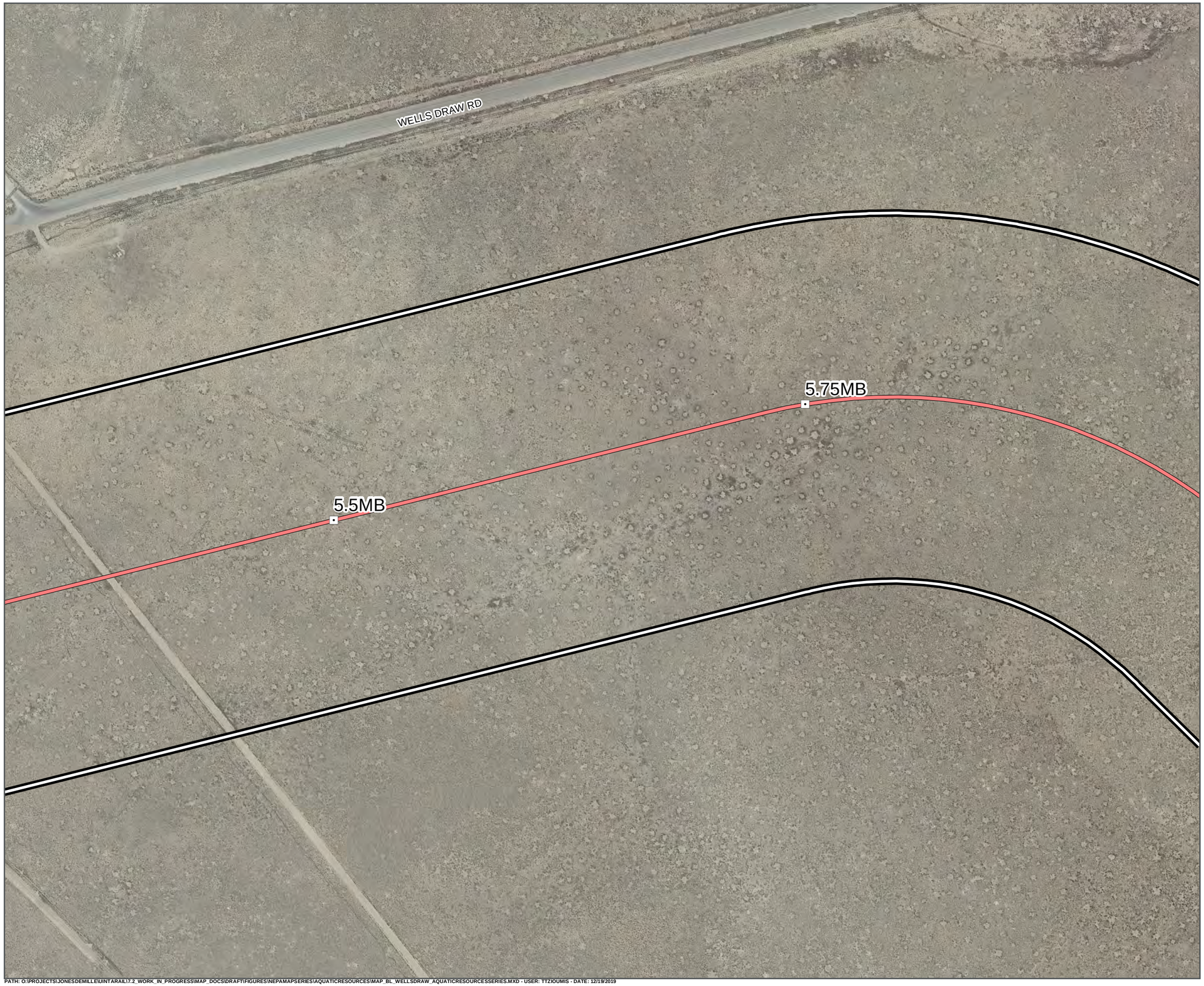
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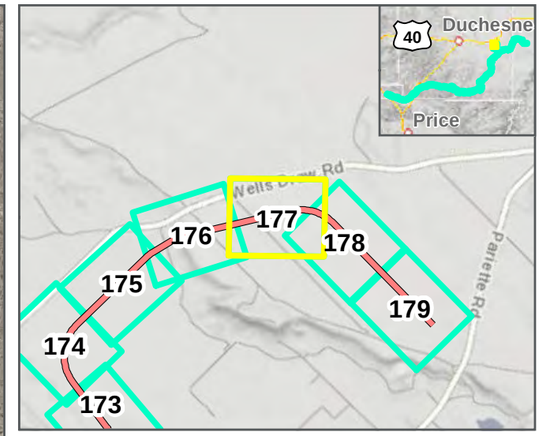
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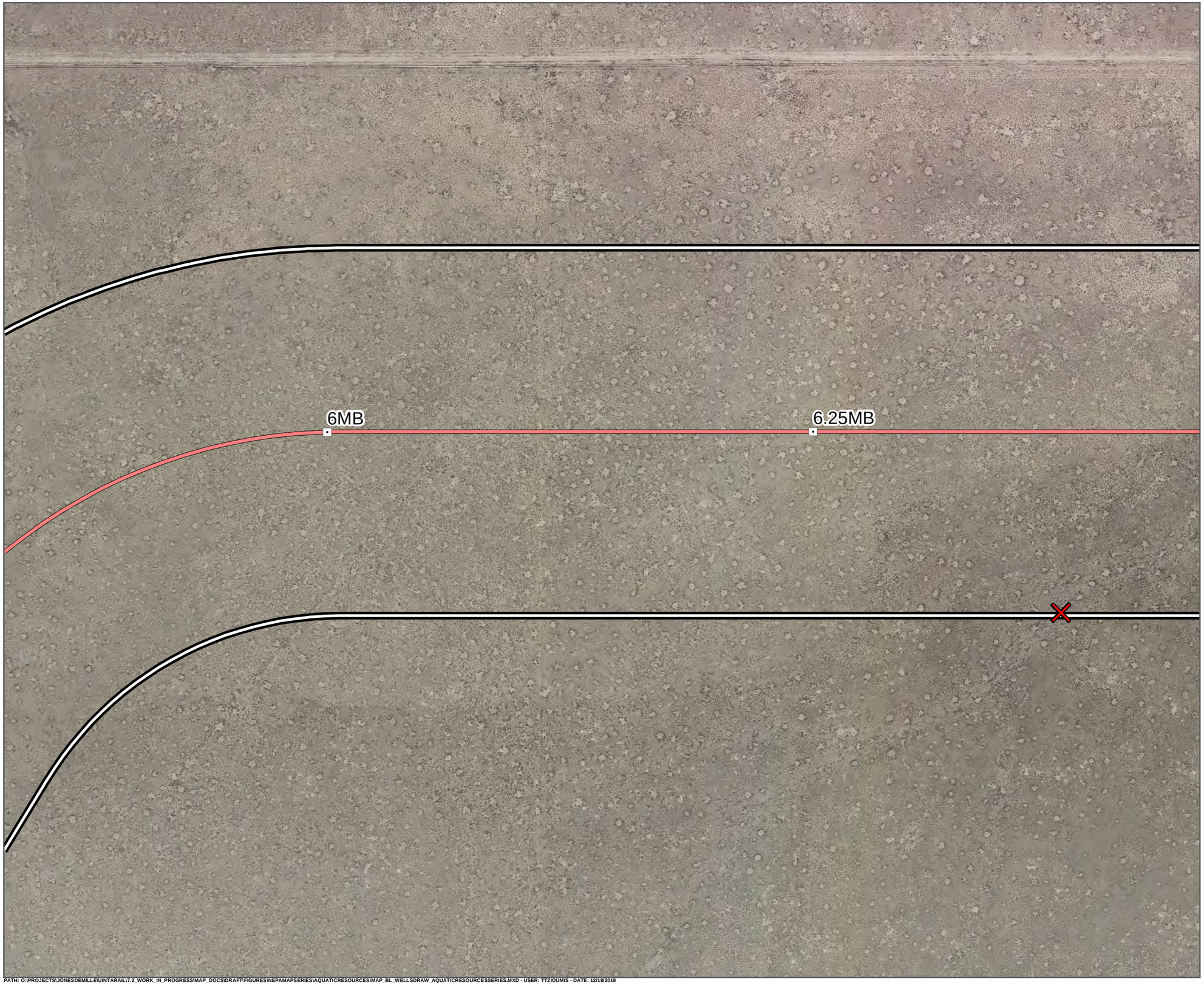
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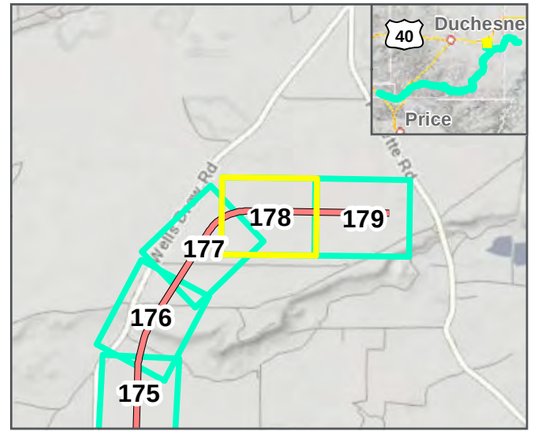
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COODINATE SYSTEM:
Utah State Plane

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AQUATIC RESOURCES
DECEMBER 2019

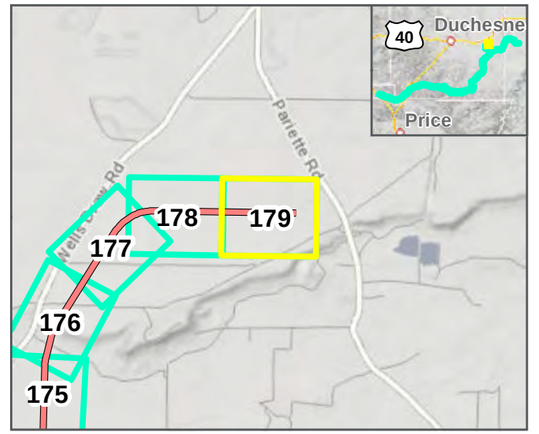
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DATA SOURCES:
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Utah Google Imagery Basemap (2013-2015)
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Utah State Plane

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DECEMBER 2019

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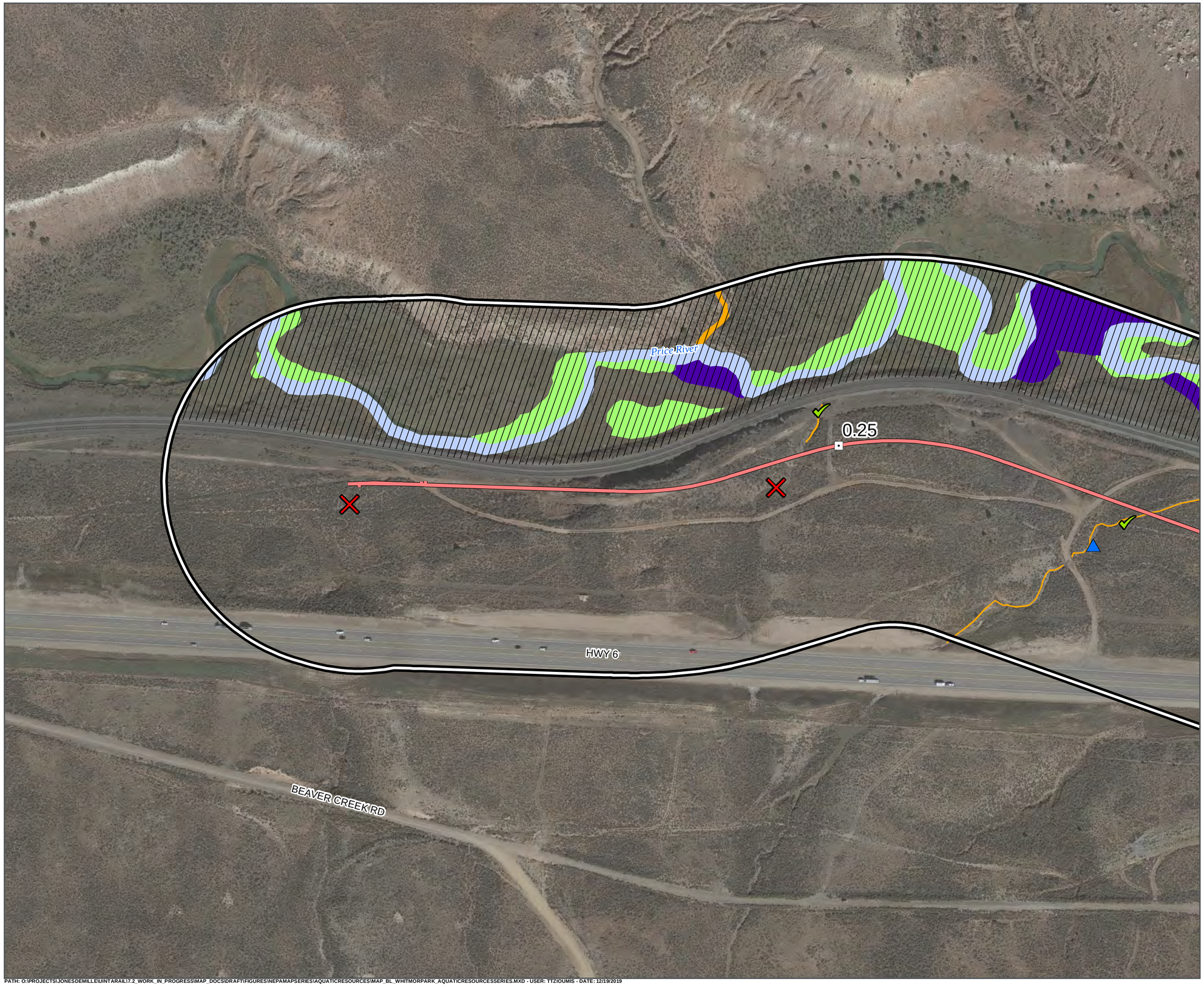
SEVEN COUNTY INFRASTRUCTURE COALITION

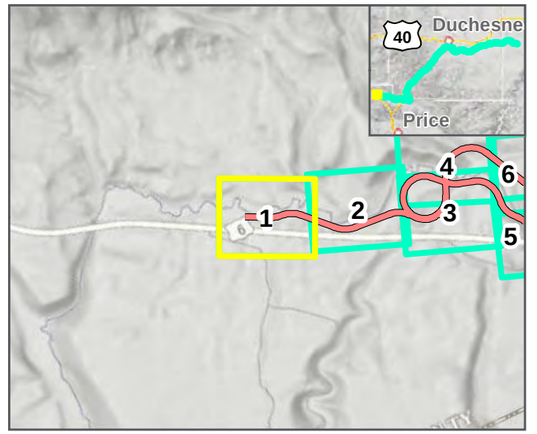
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APPENDIX C

Aquatic Resource Maps in the Whitmore Park Study Area





- Mileposts
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WHITMORE PARK ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

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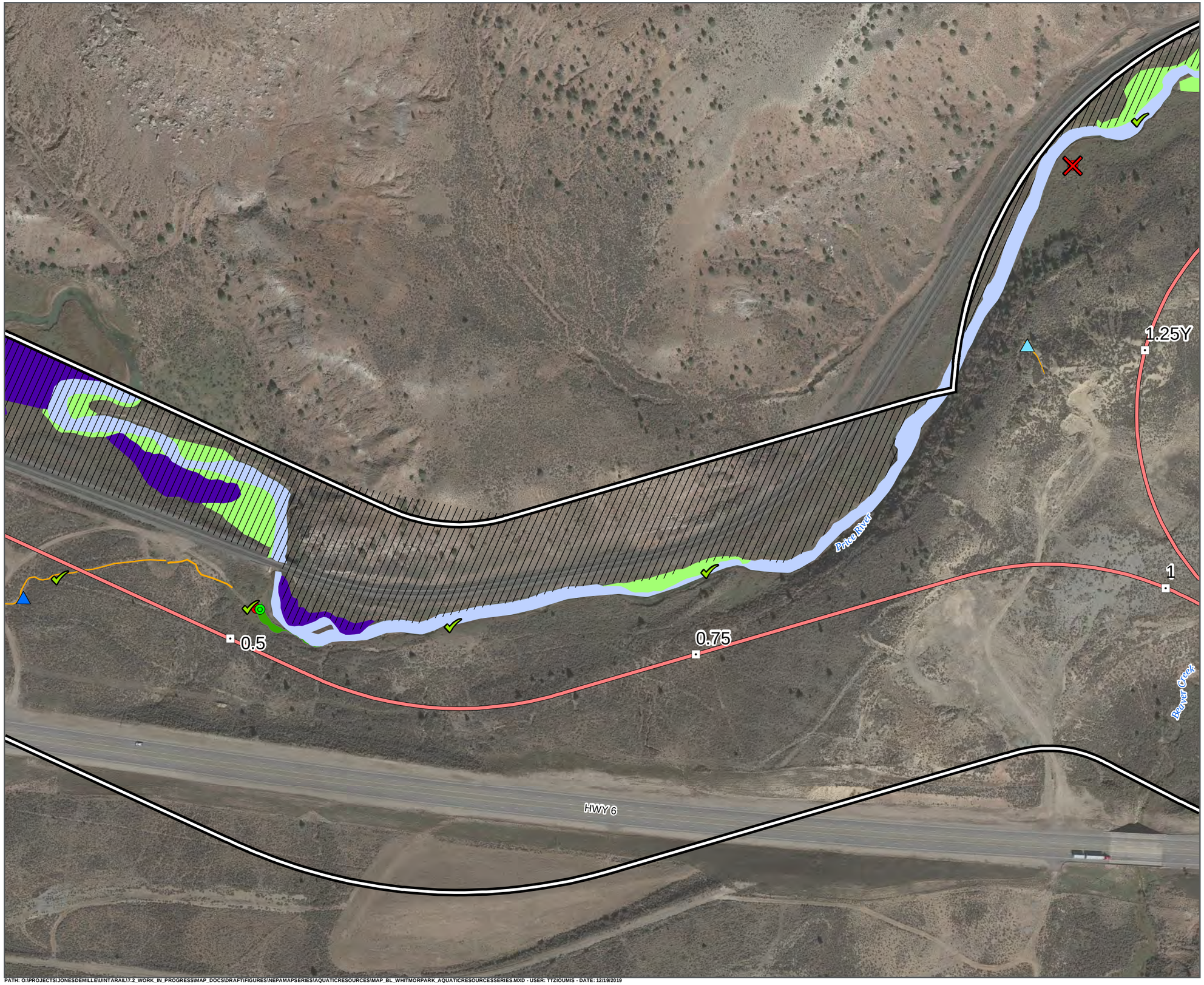
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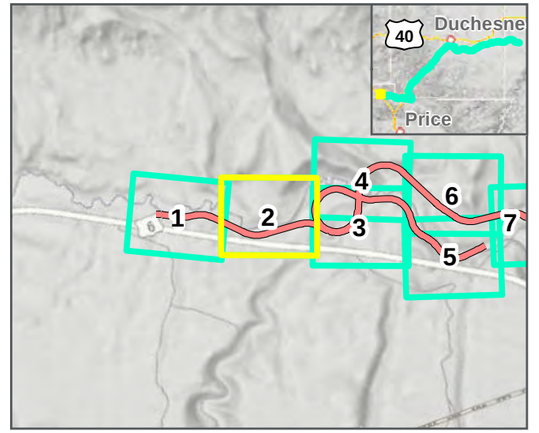
DATA SOURCES:
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Utah Google Imagery
Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

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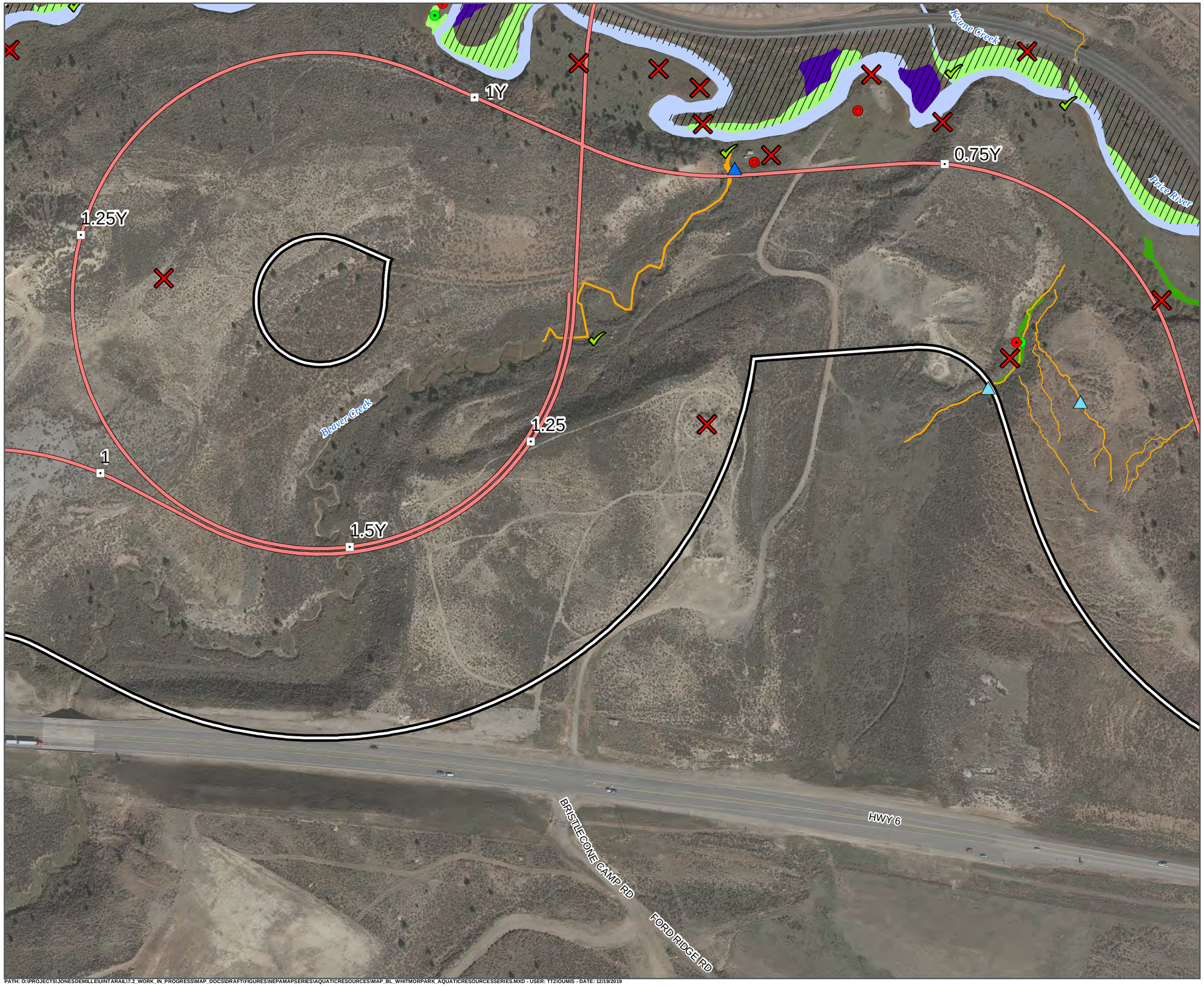
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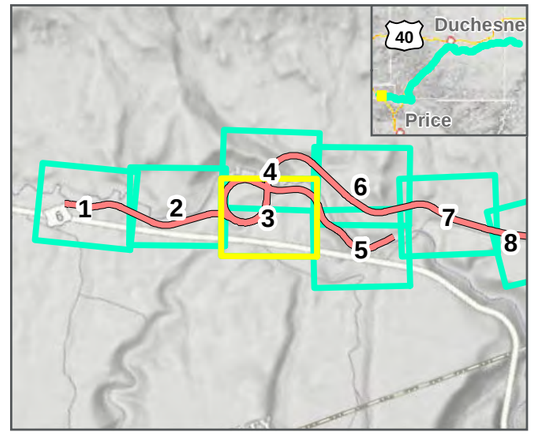
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1 inch = 250 Feet

DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

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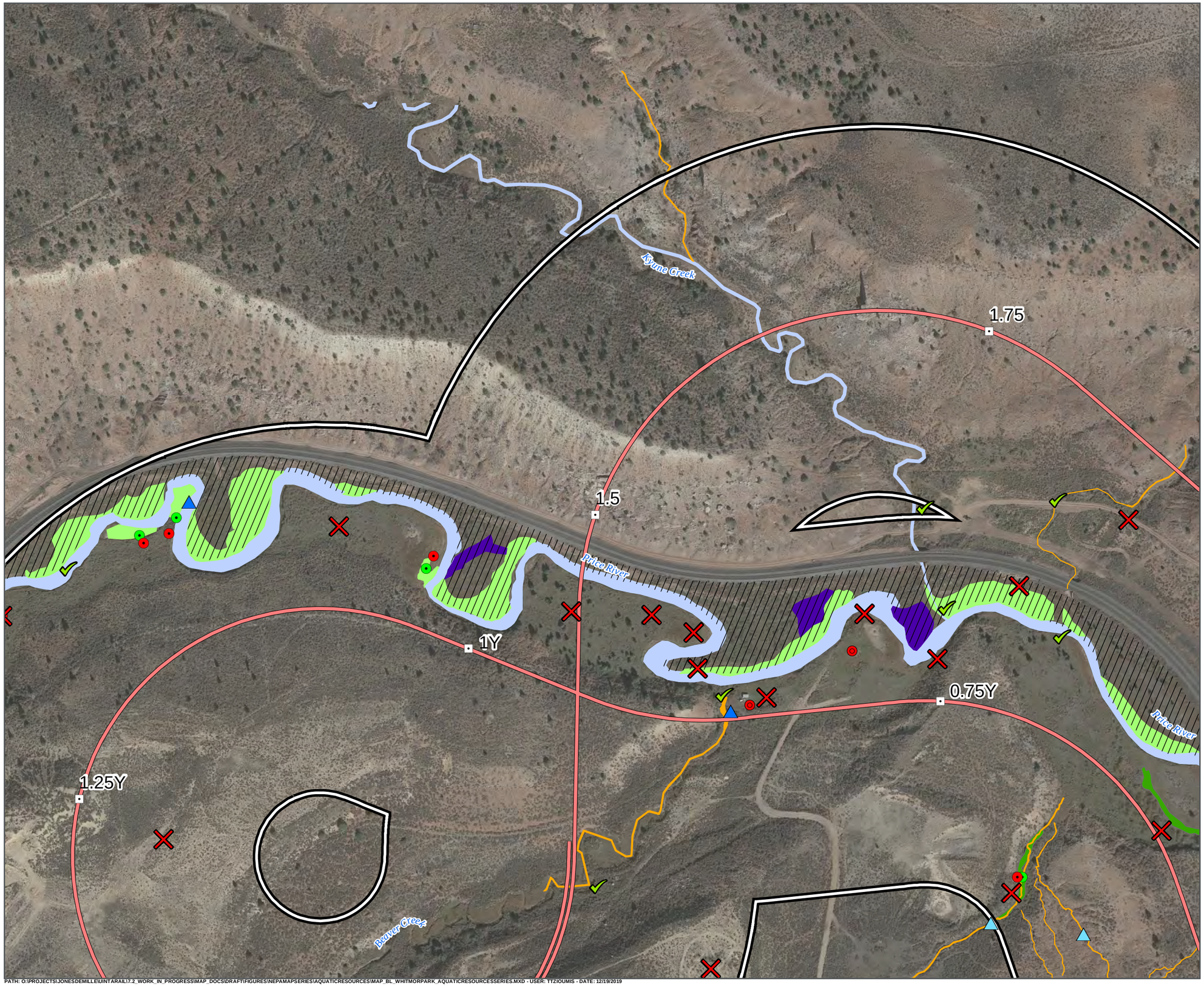
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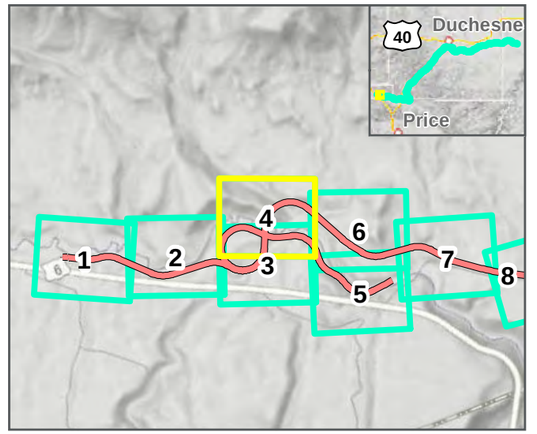
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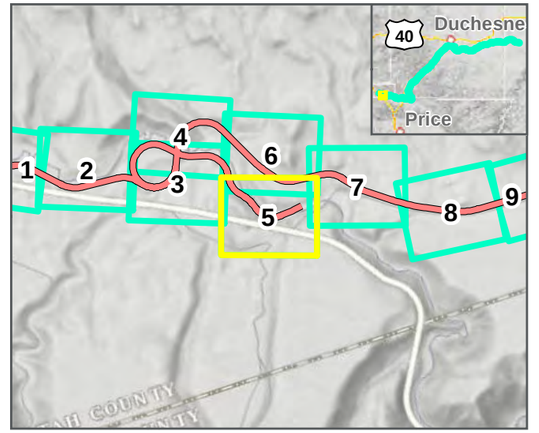
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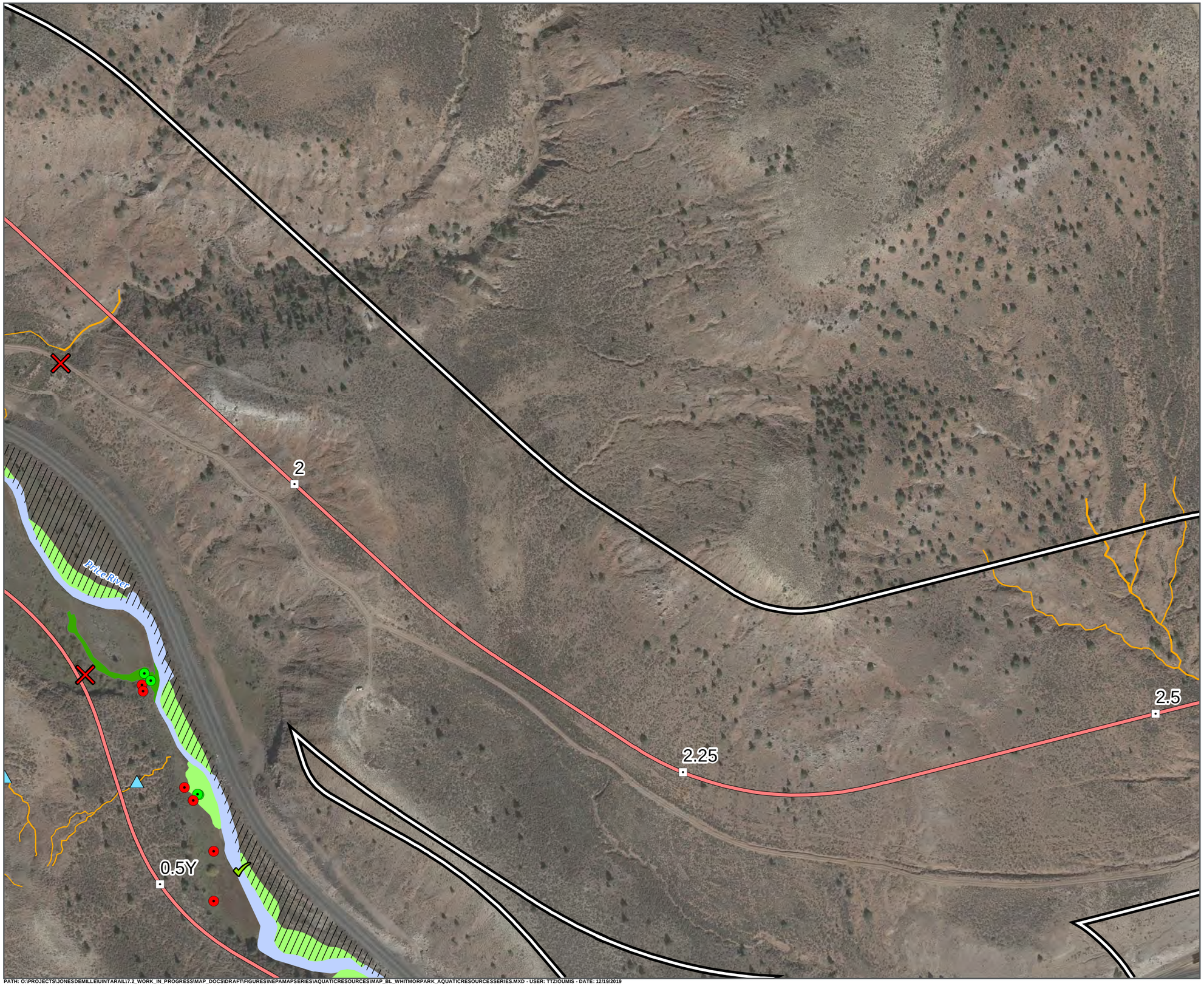
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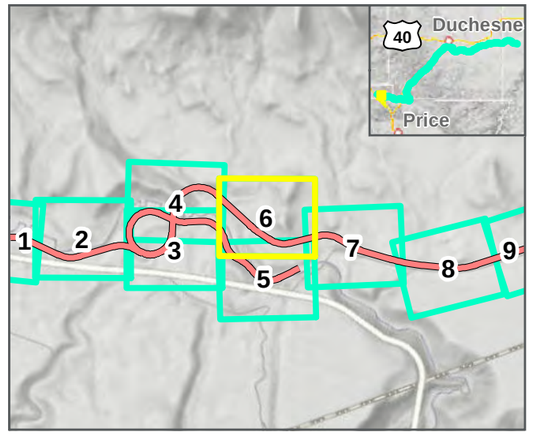
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- Map Extent (current view in yellow)

WHITMORE PARK ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

N

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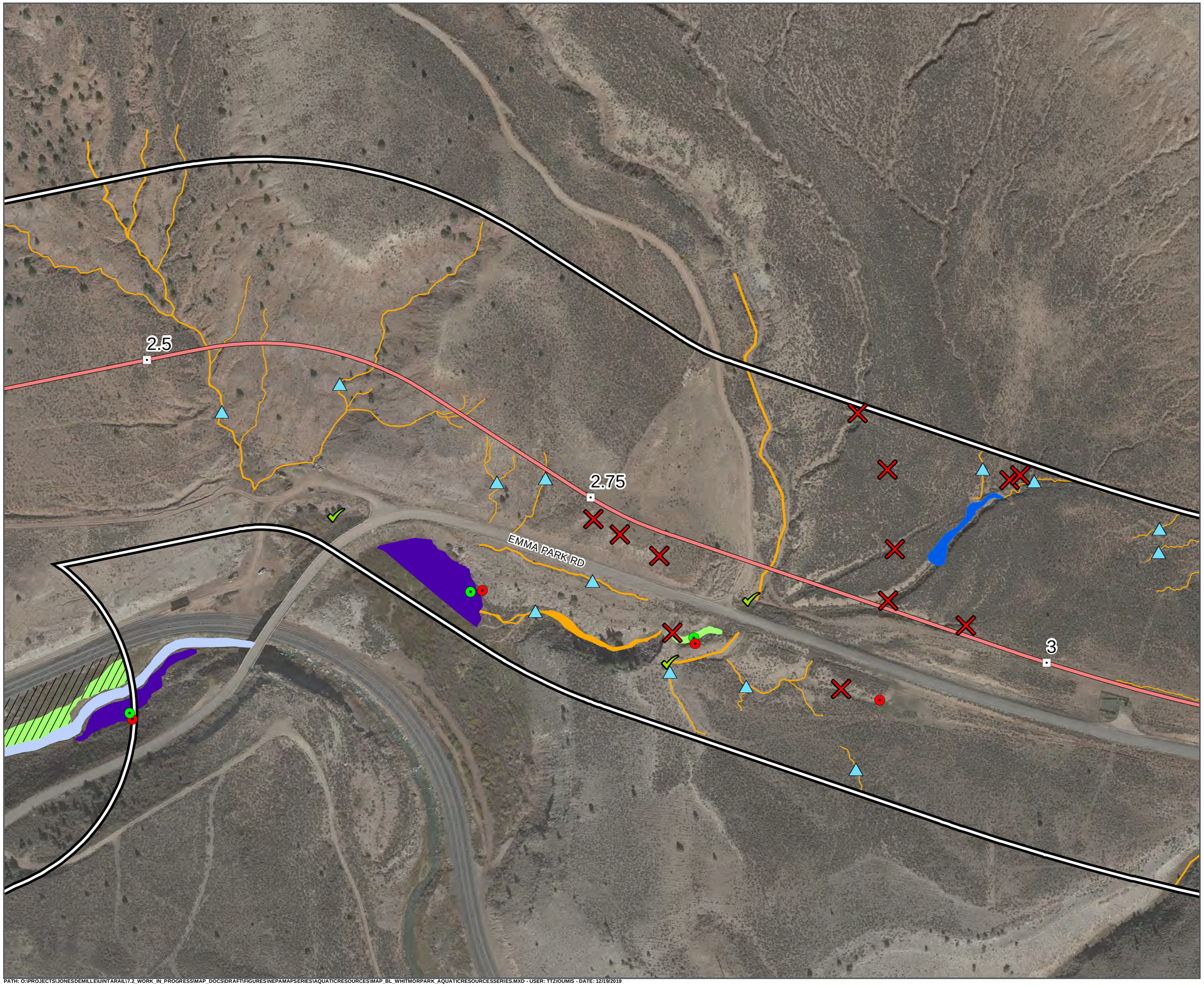
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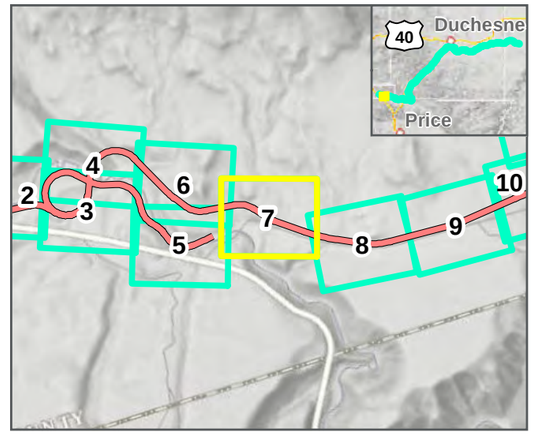
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

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DECEMBER 2019

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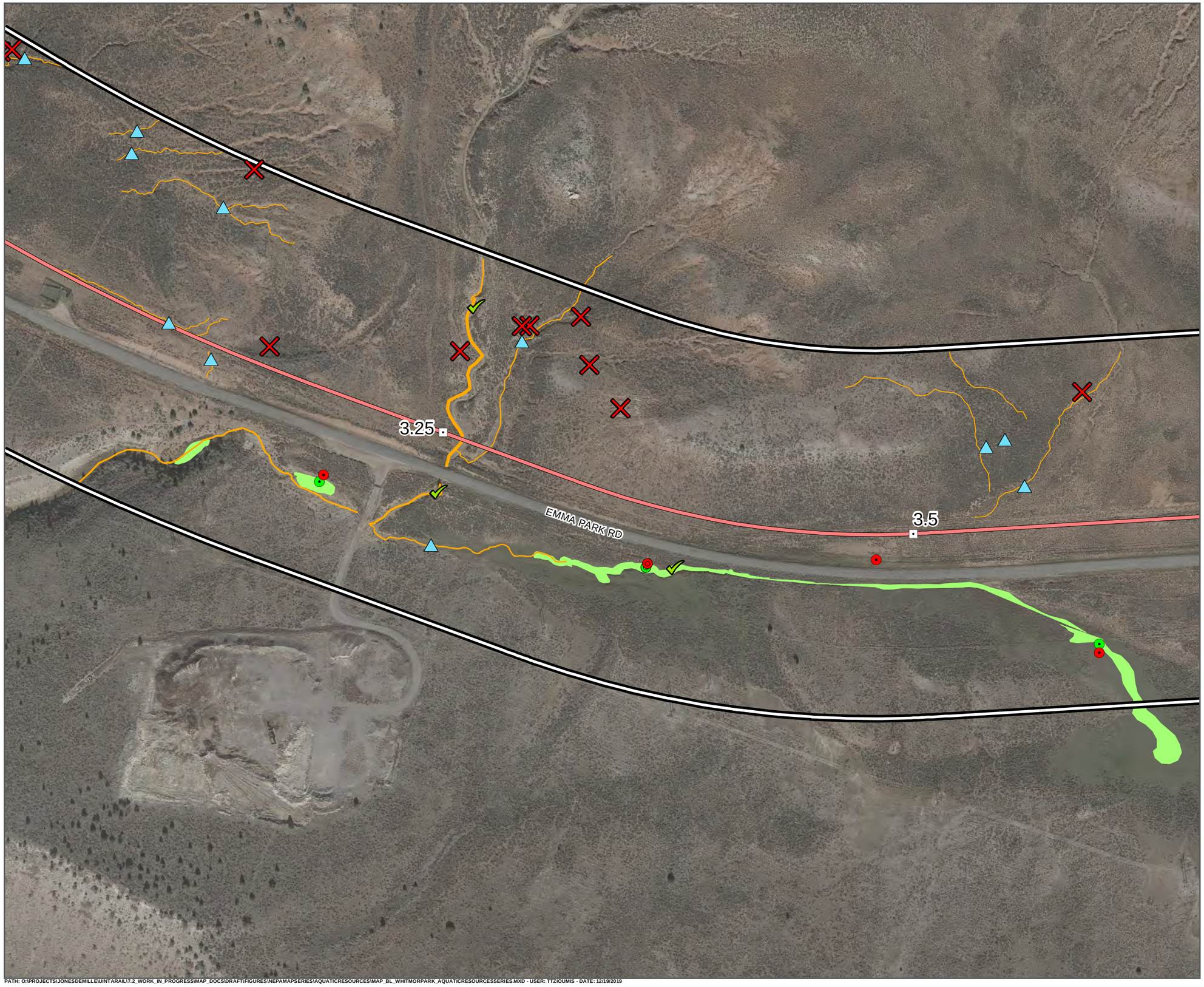
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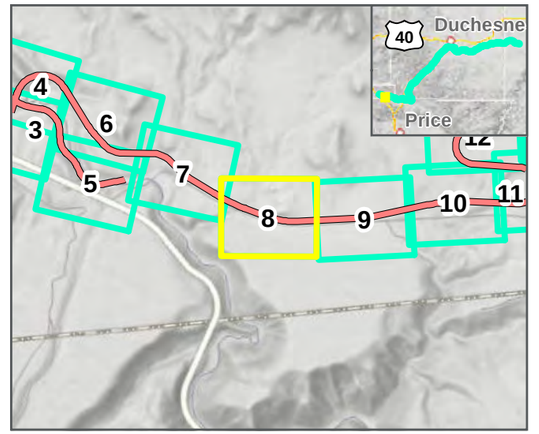
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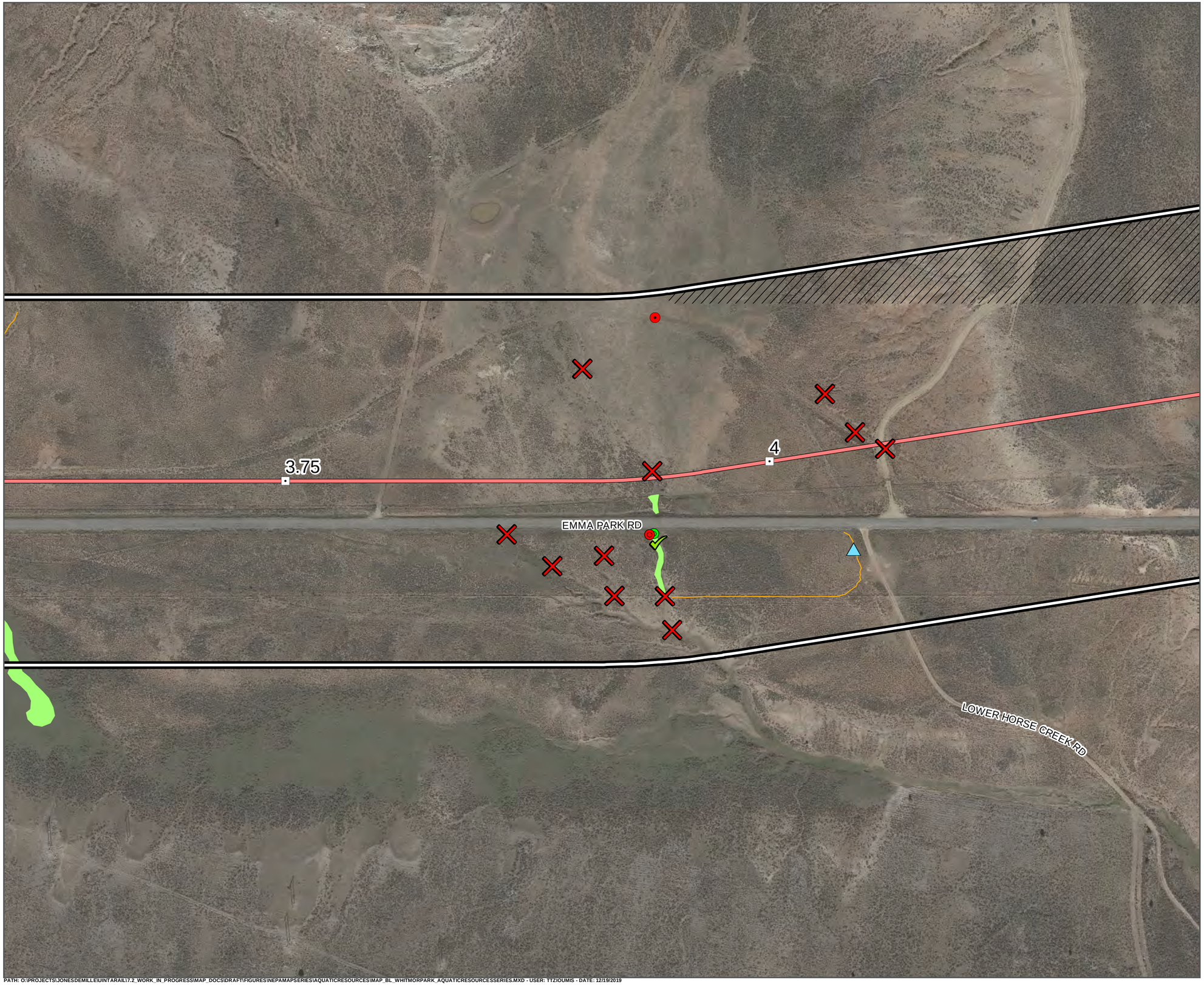
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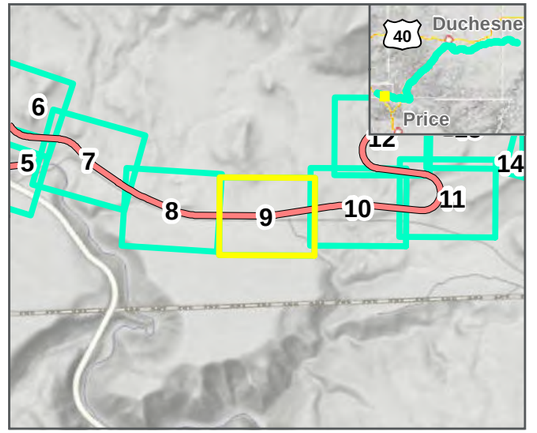
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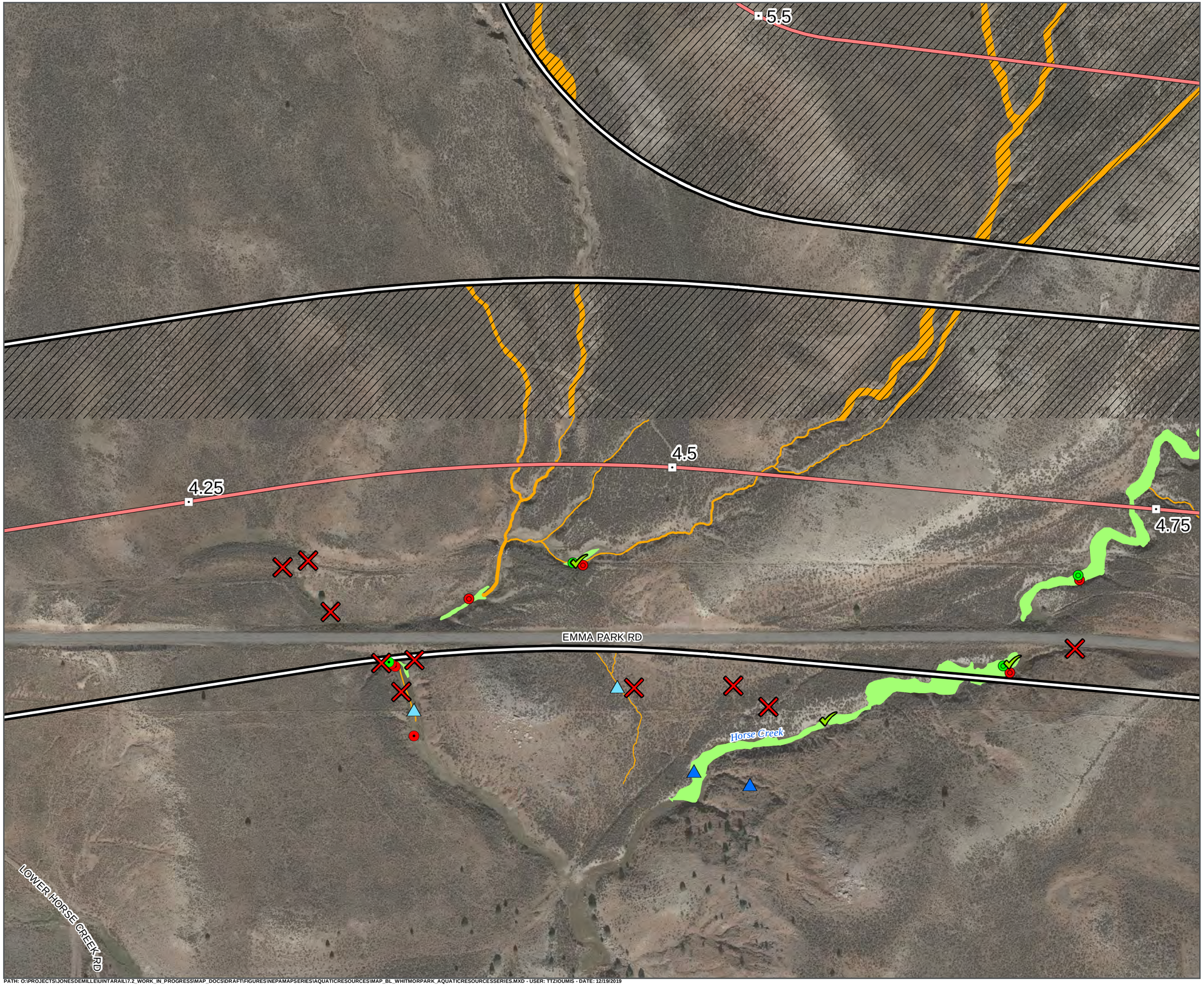
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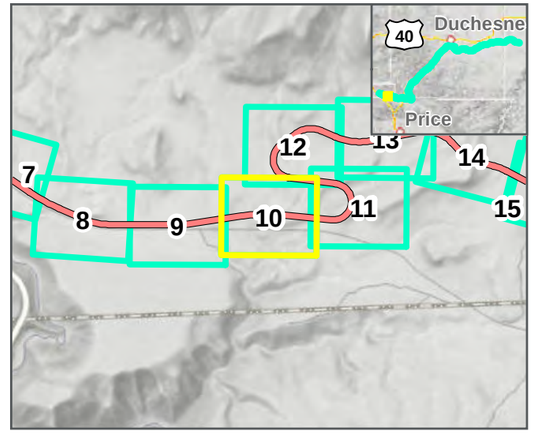
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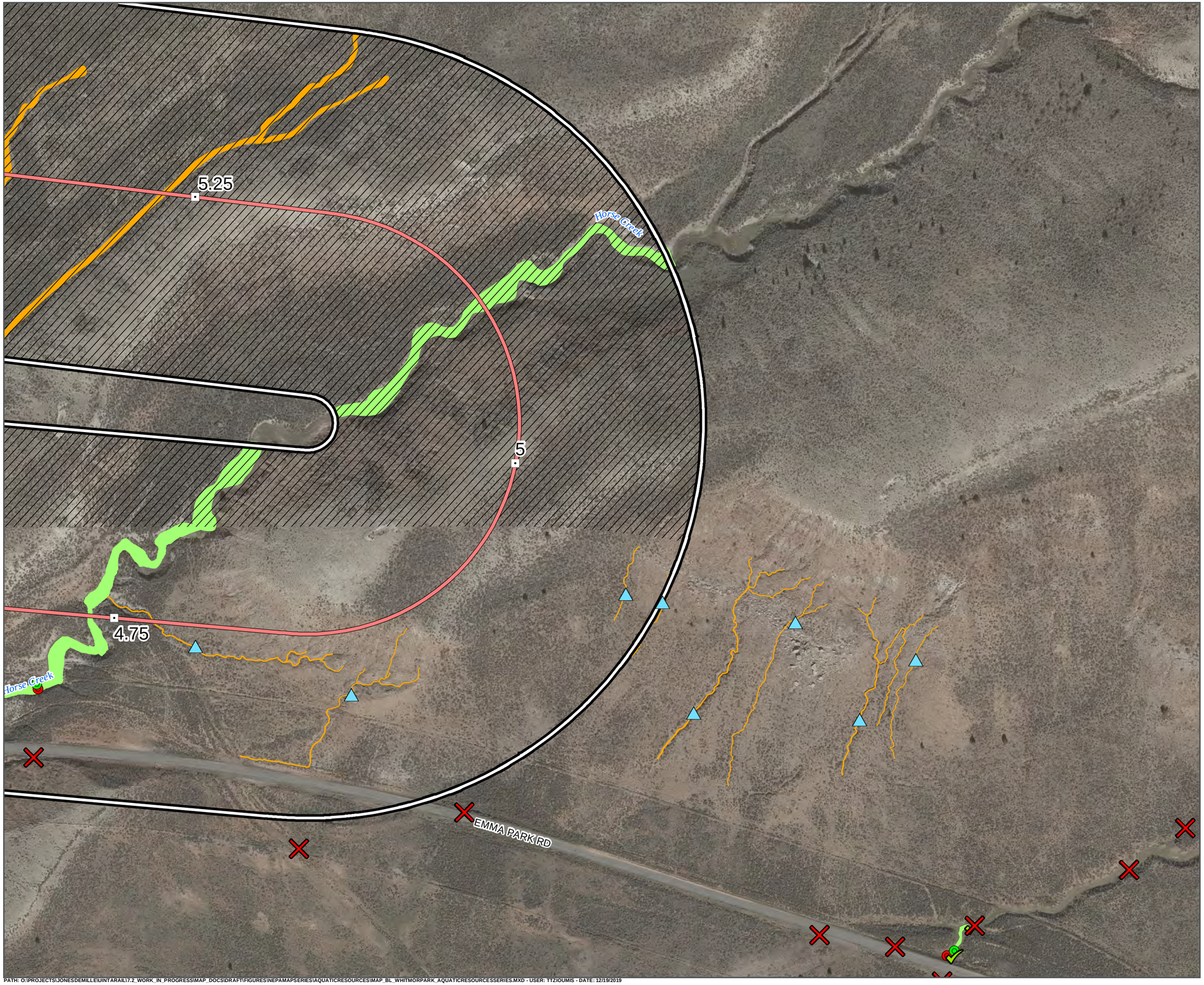
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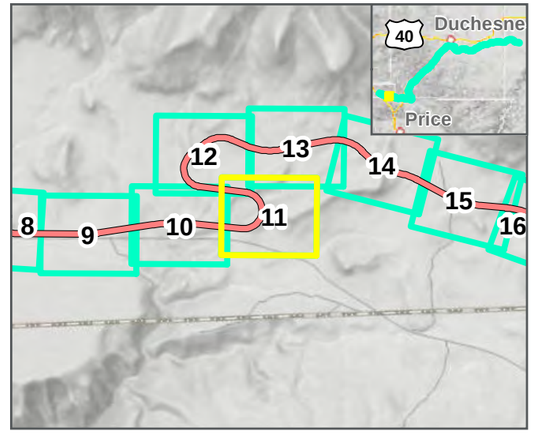
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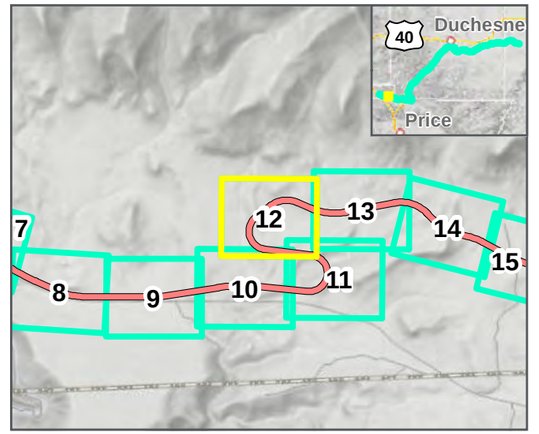
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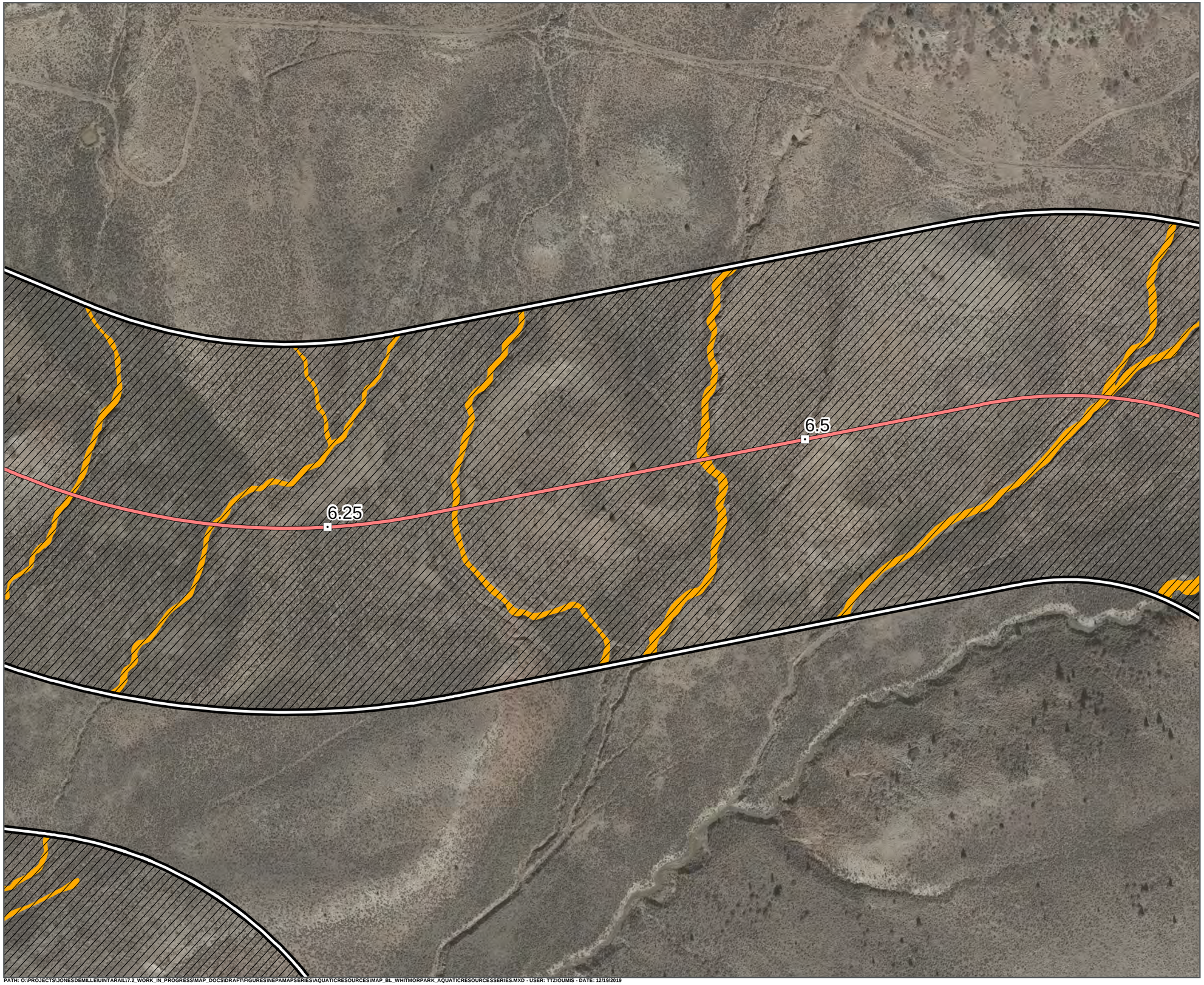
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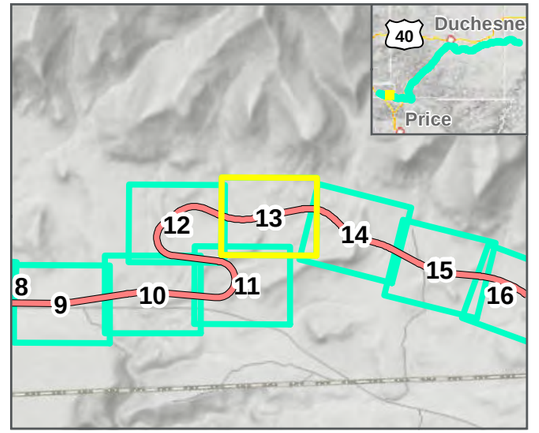
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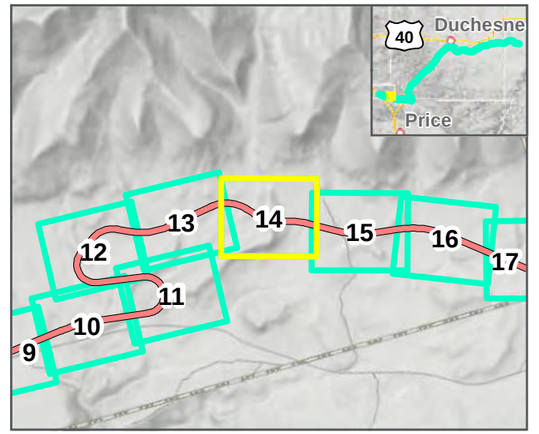
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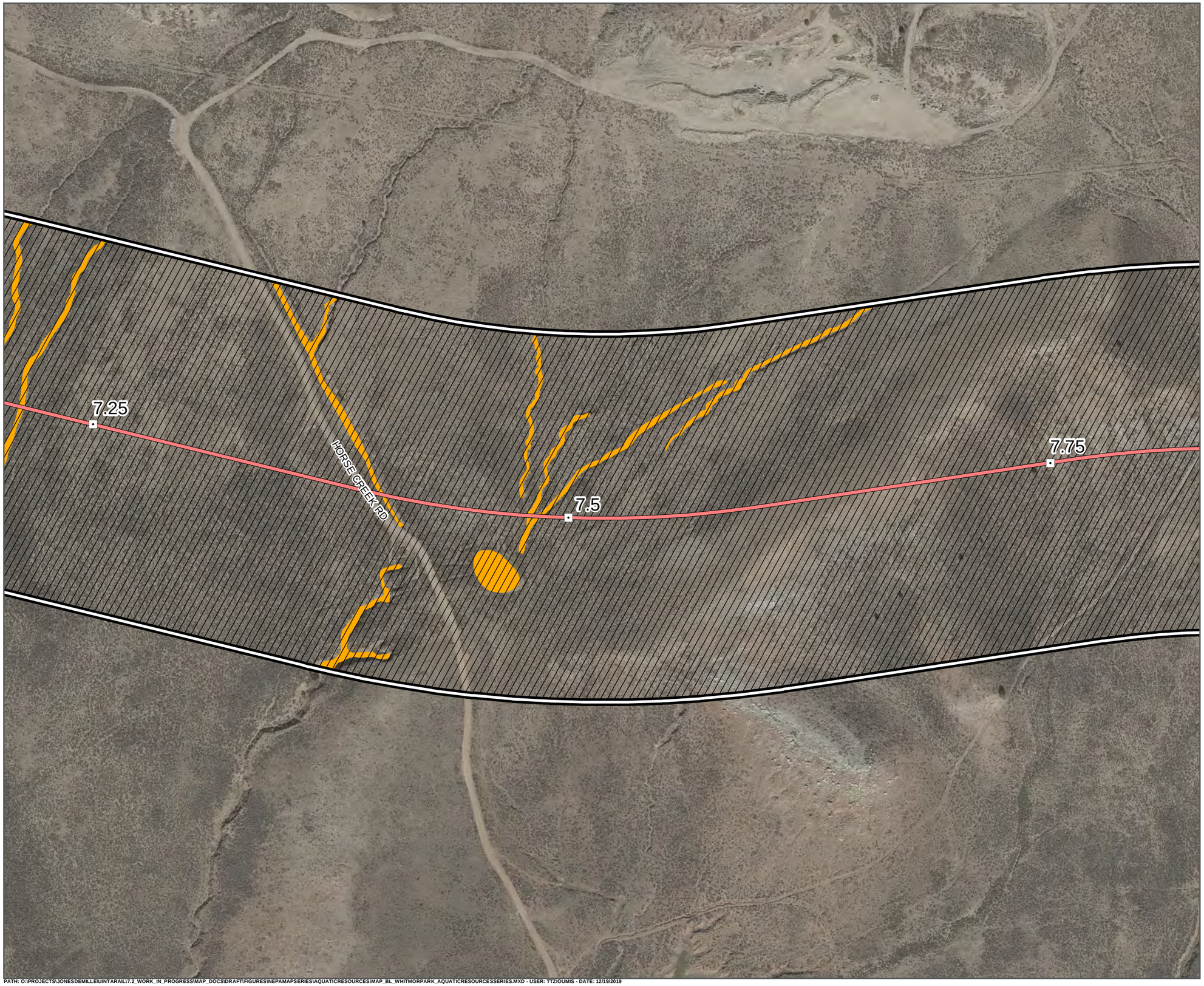
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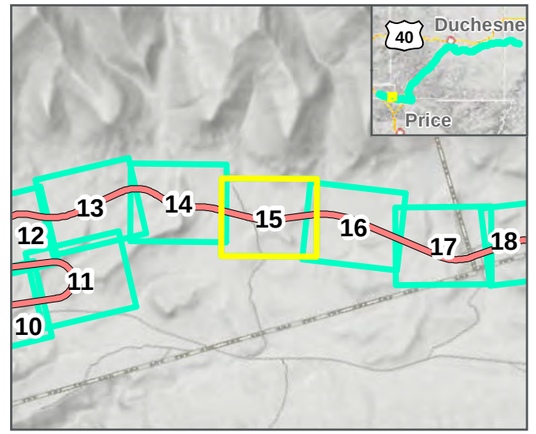
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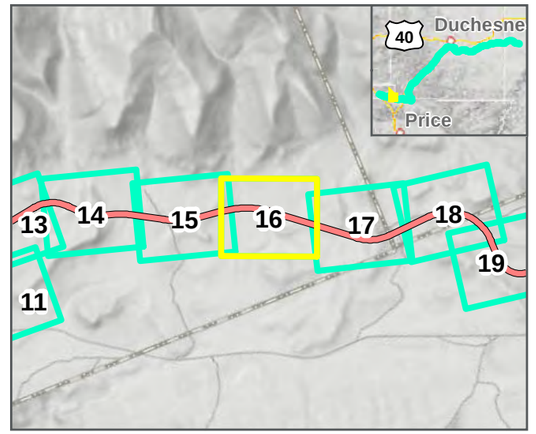
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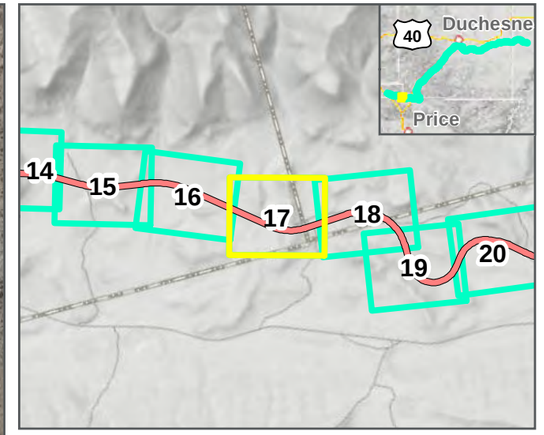
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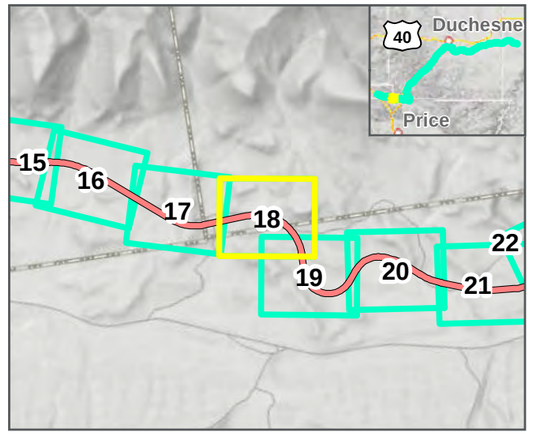
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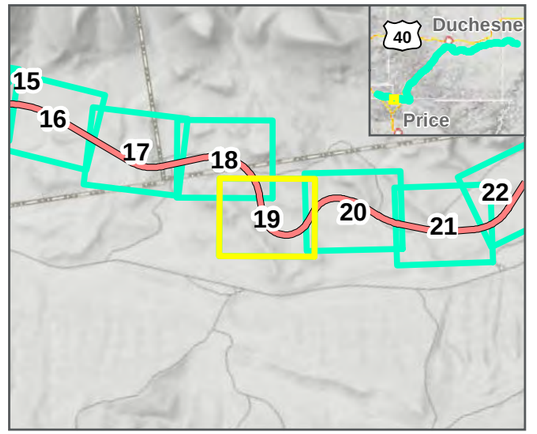
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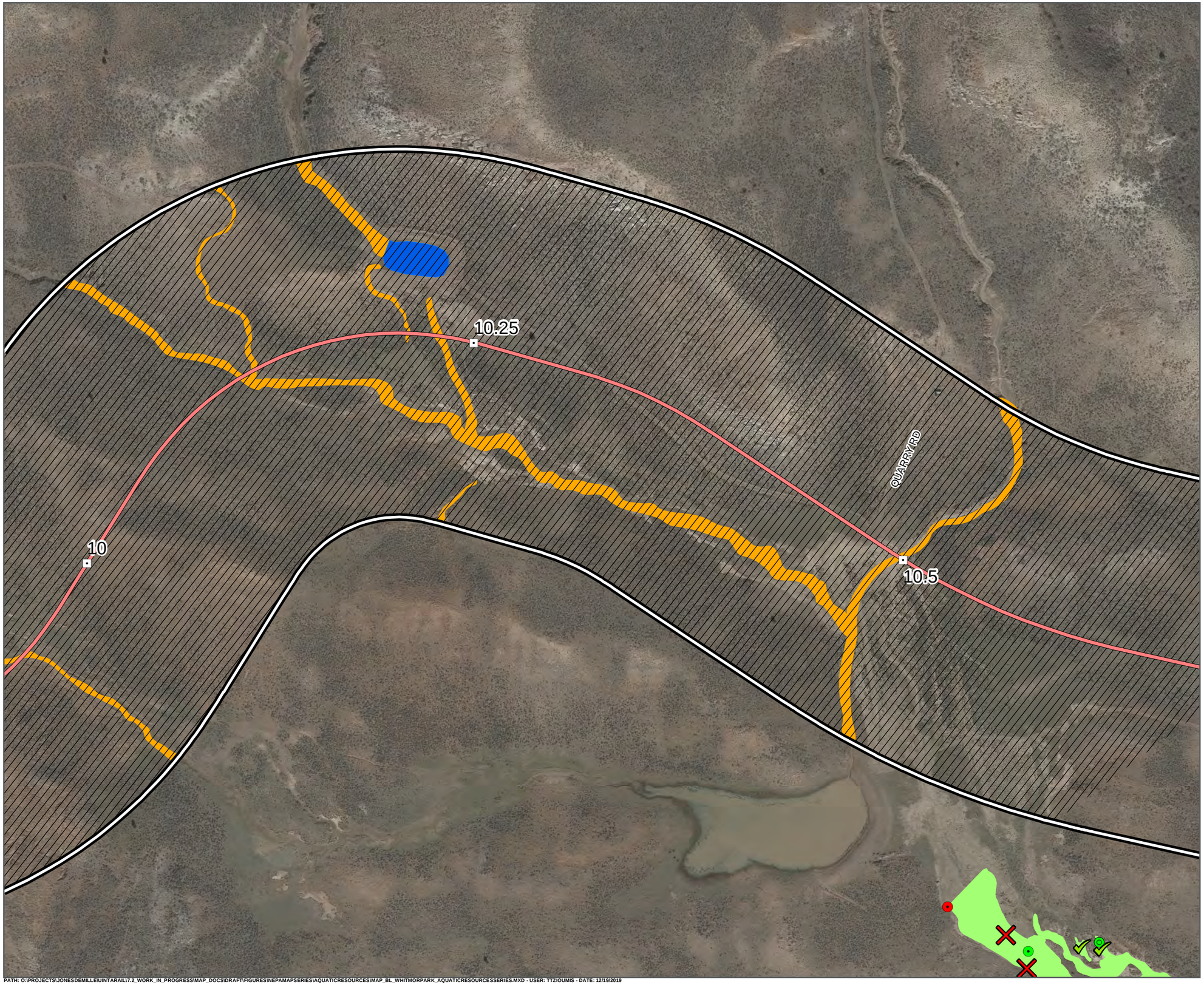
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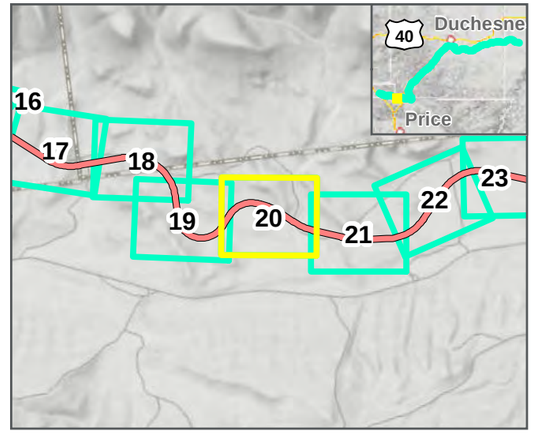
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- Ditch/Canal
- Study Area
- Map Extent (current view in yellow)

WHITMORE PARK ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

N

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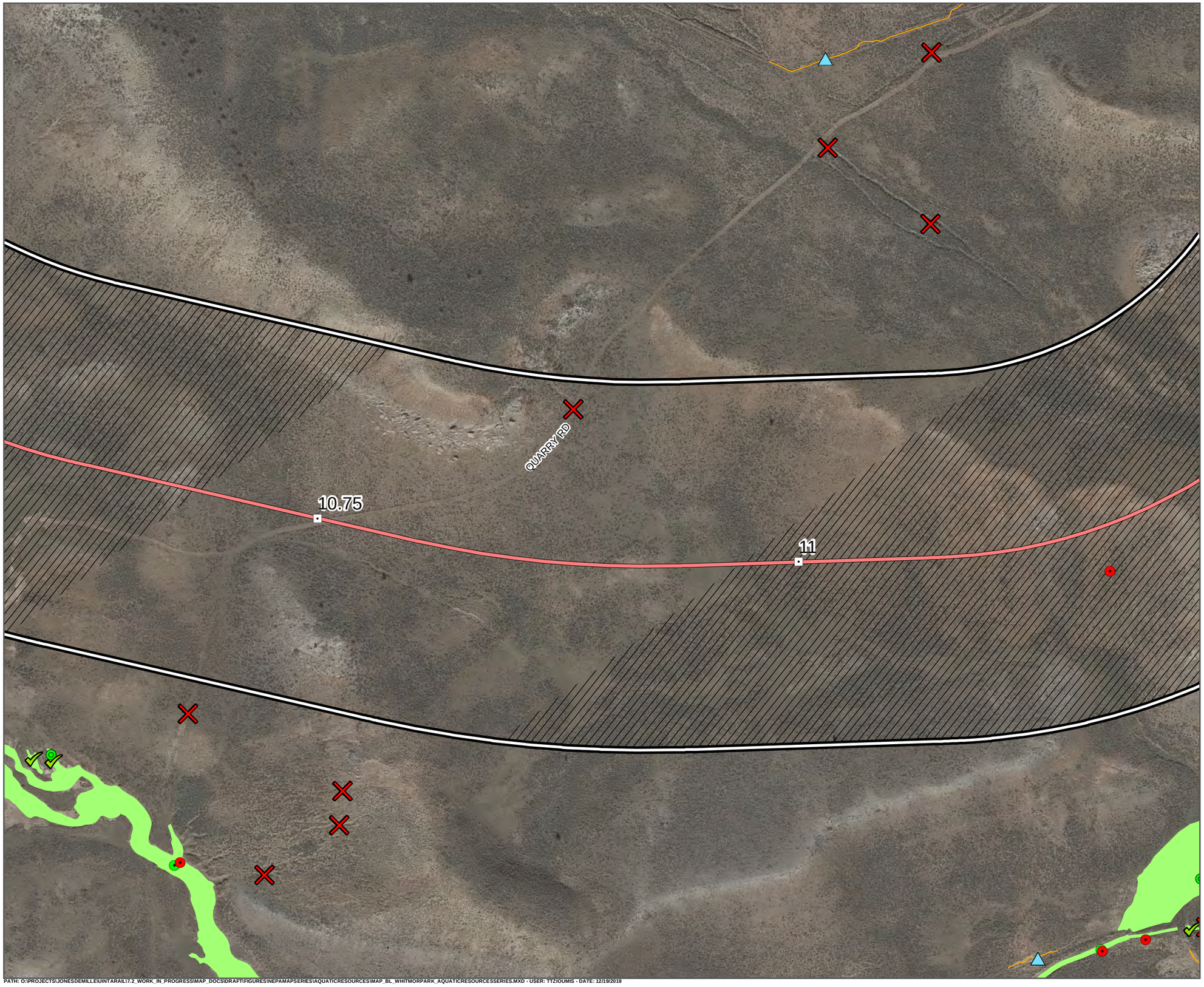
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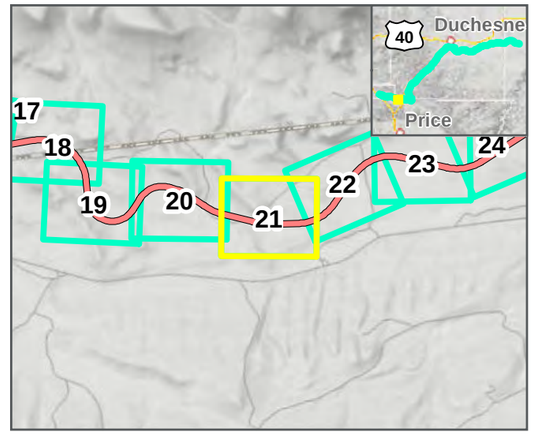
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery
Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

PATH: O:\PROJECTS\JONESDEMILLE\UINTARAIL\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\FIGURES\NEPAMAPSERIES\AQUATICRESOURCES\MAP_BL_WHITMORPARK_AQUATICRESOURCESSERIES.MXD - USER: TTZIOUMIS - DATE: 12/19/2019





- Mileposts
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DECEMBER 2019

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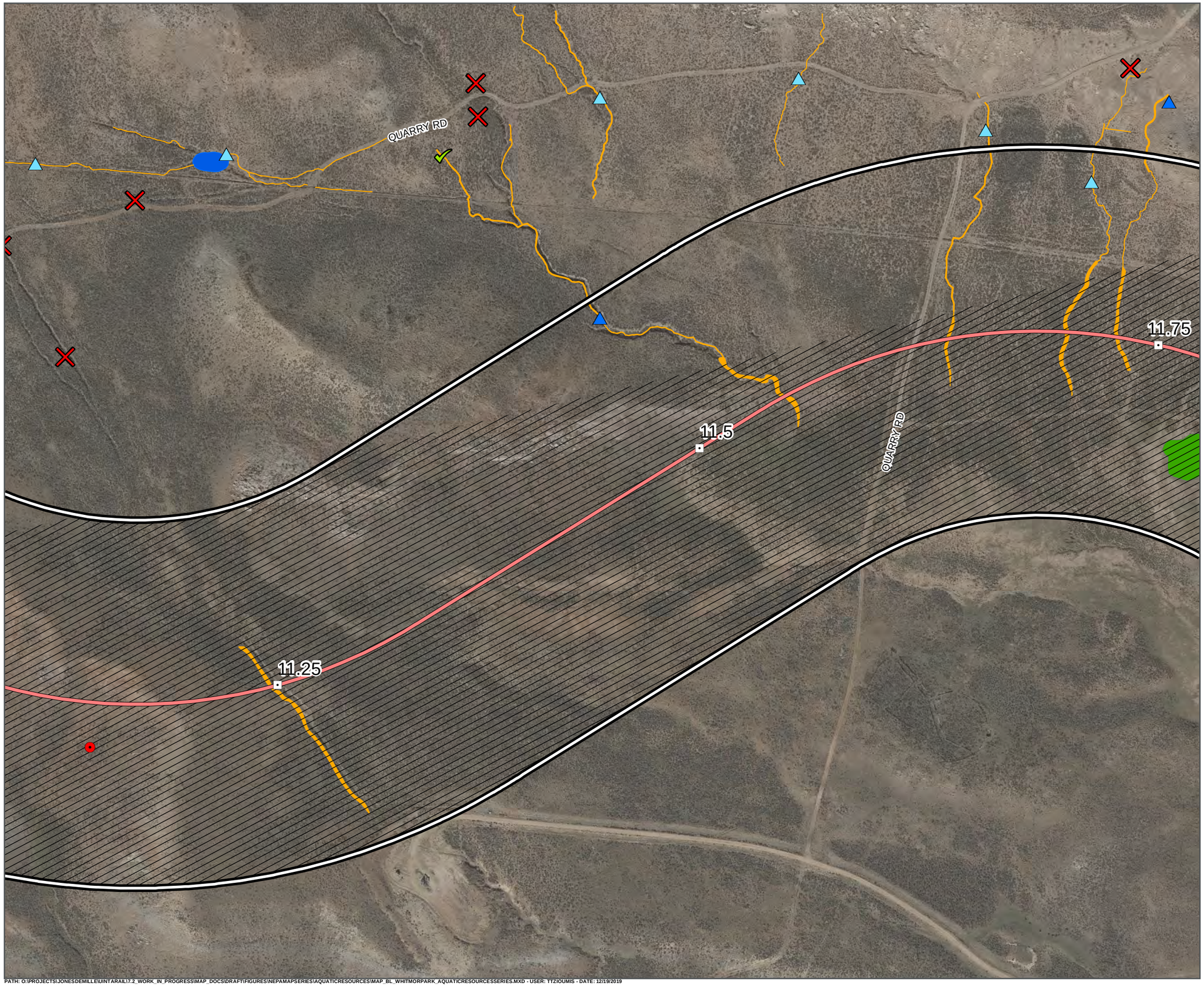
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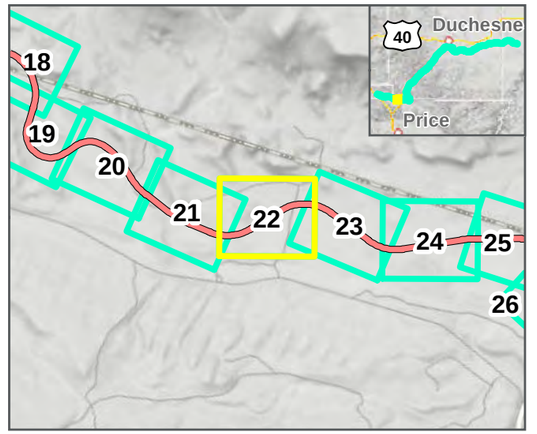
DATA SOURCES:
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DECEMBER 2019

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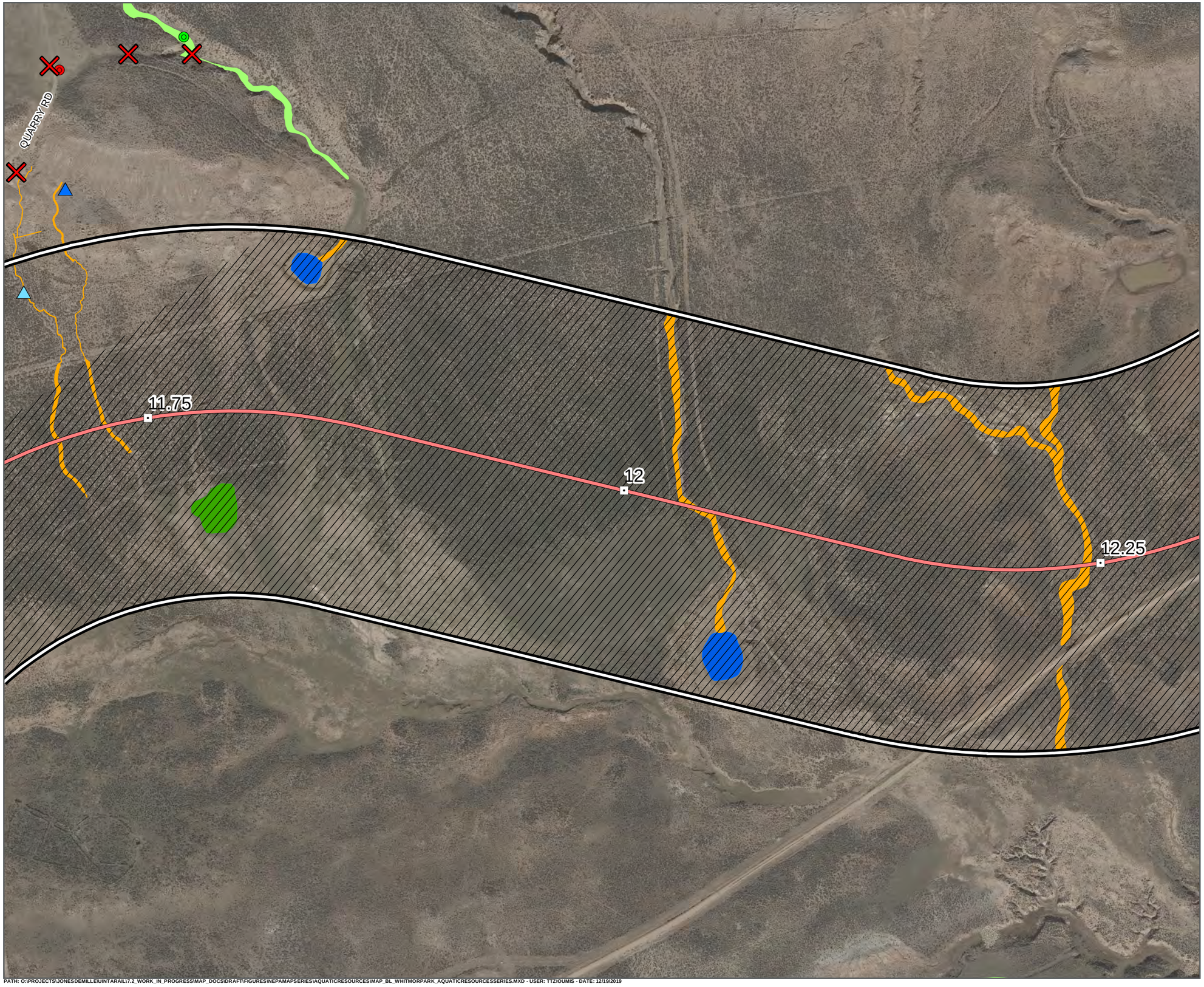
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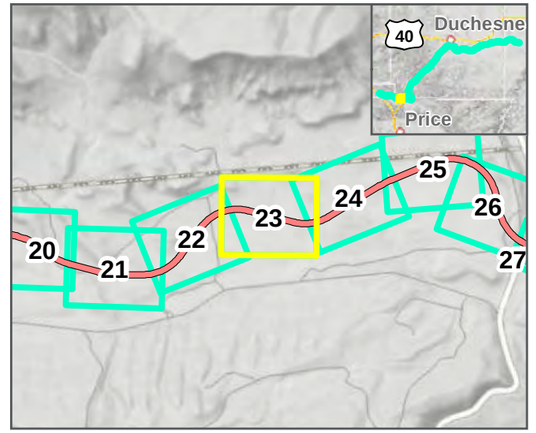
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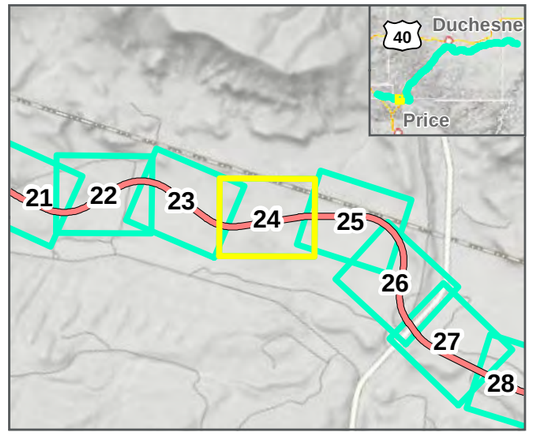
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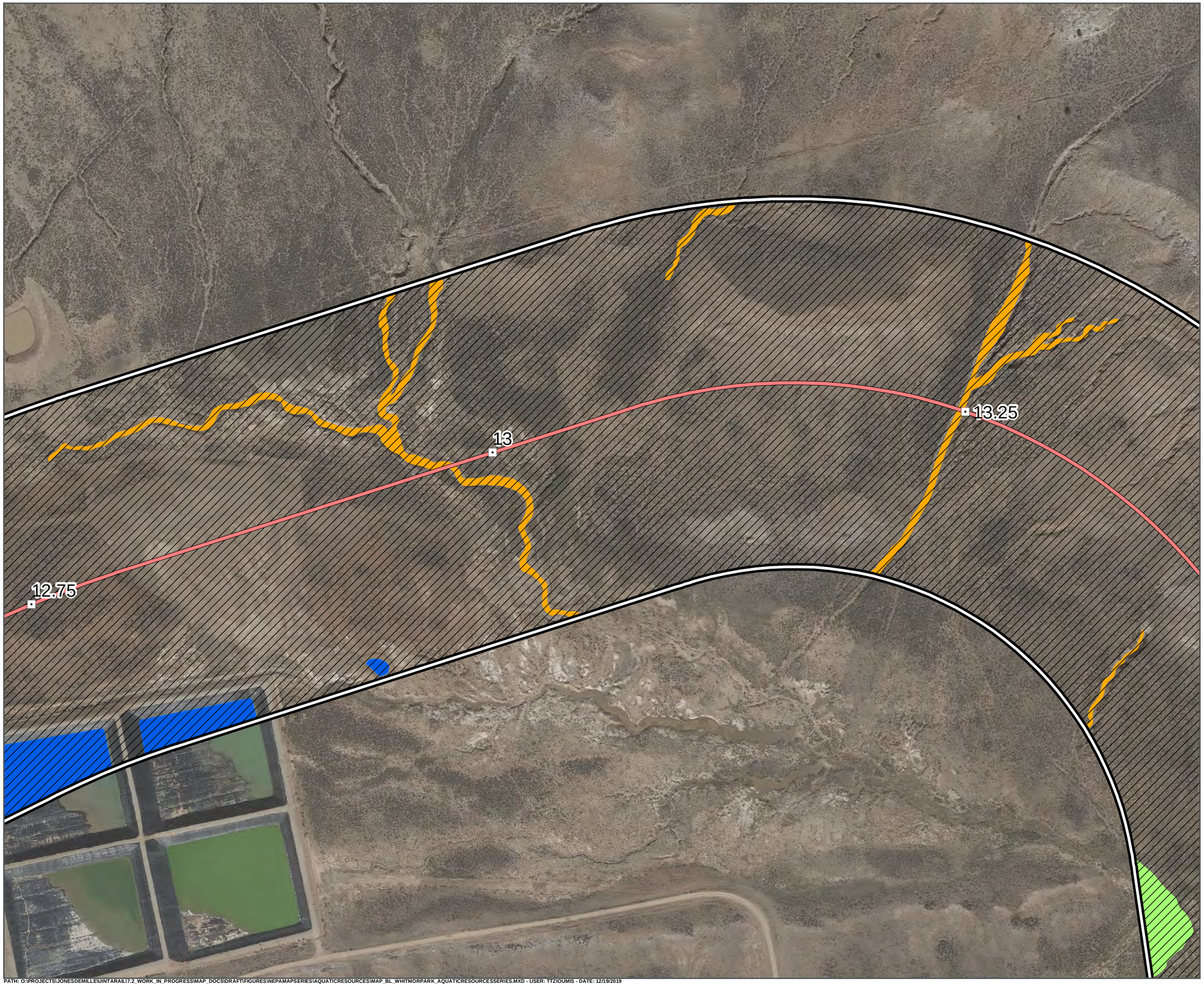
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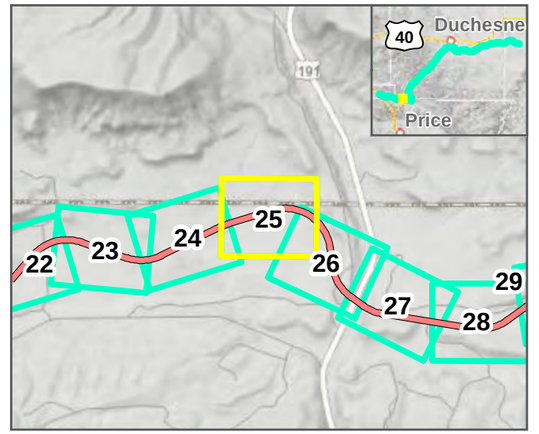
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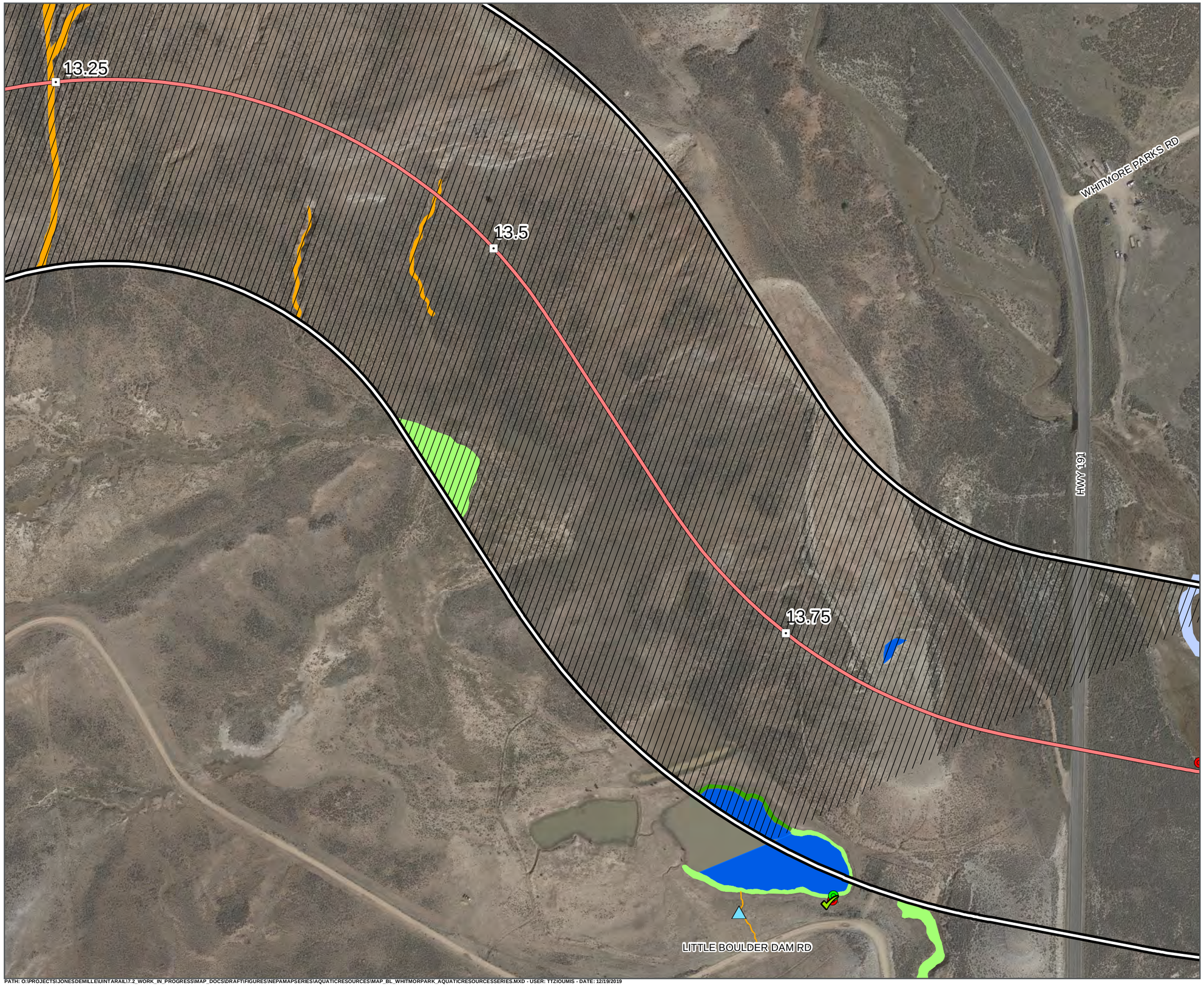
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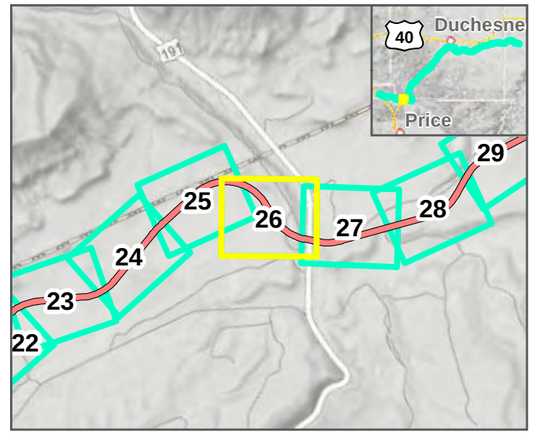
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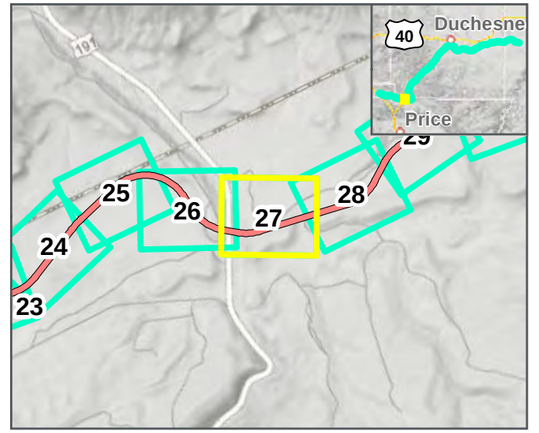
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DECEMBER 2019

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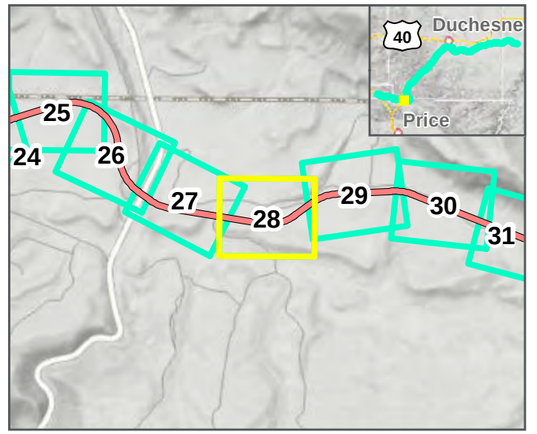
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DECEMBER 2019

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SEVEN COUNTY INFRASTRUCTURE COALITION

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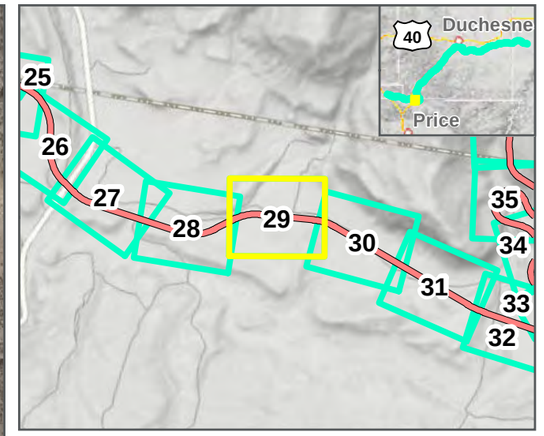
JACK CANYON RD

WHITMORE PARKS RD

15

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- Mileposts
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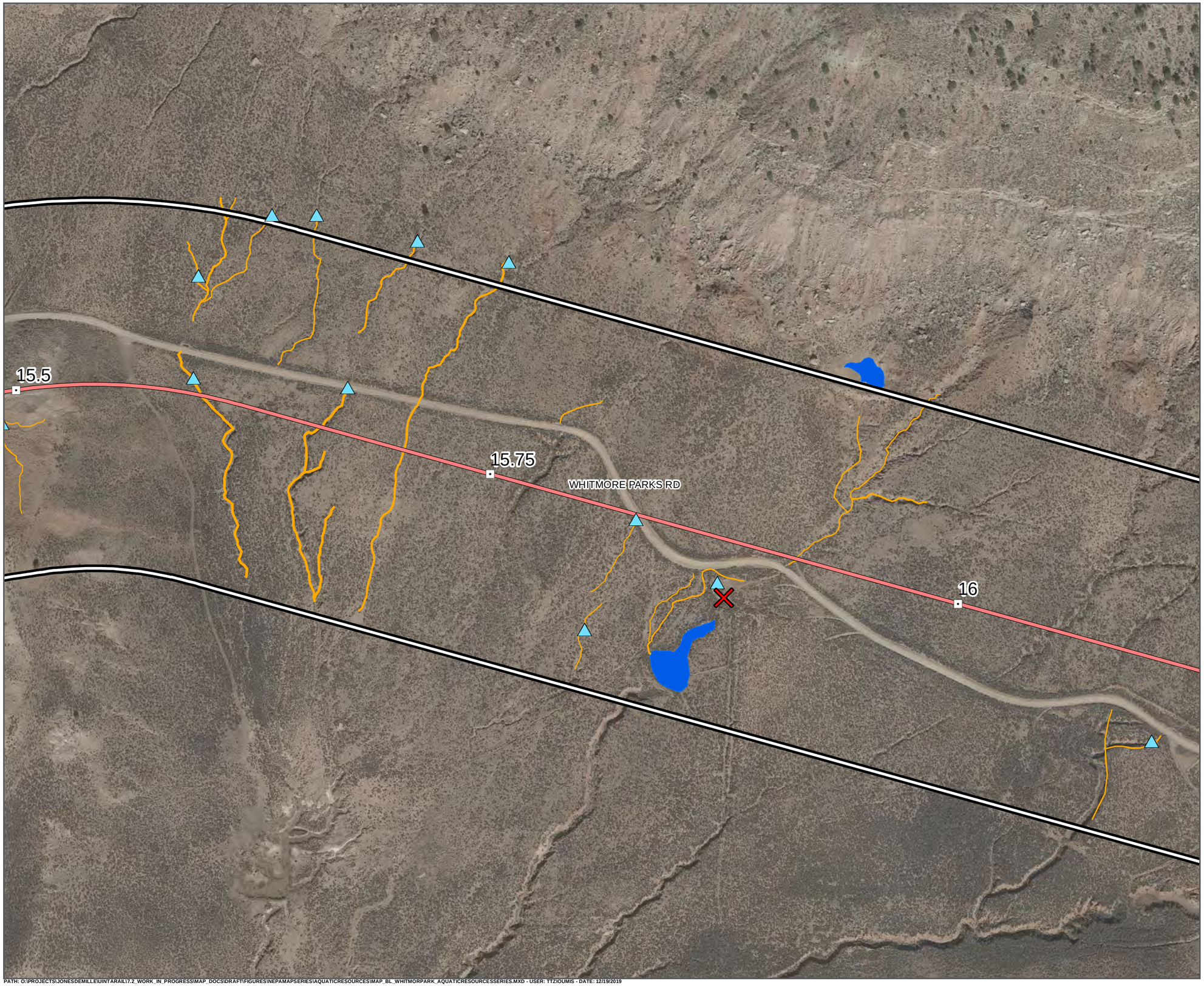
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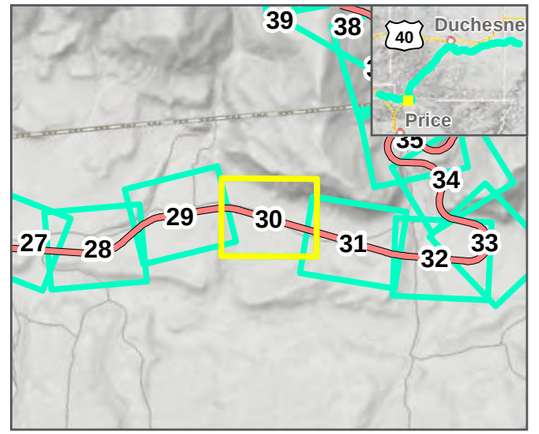
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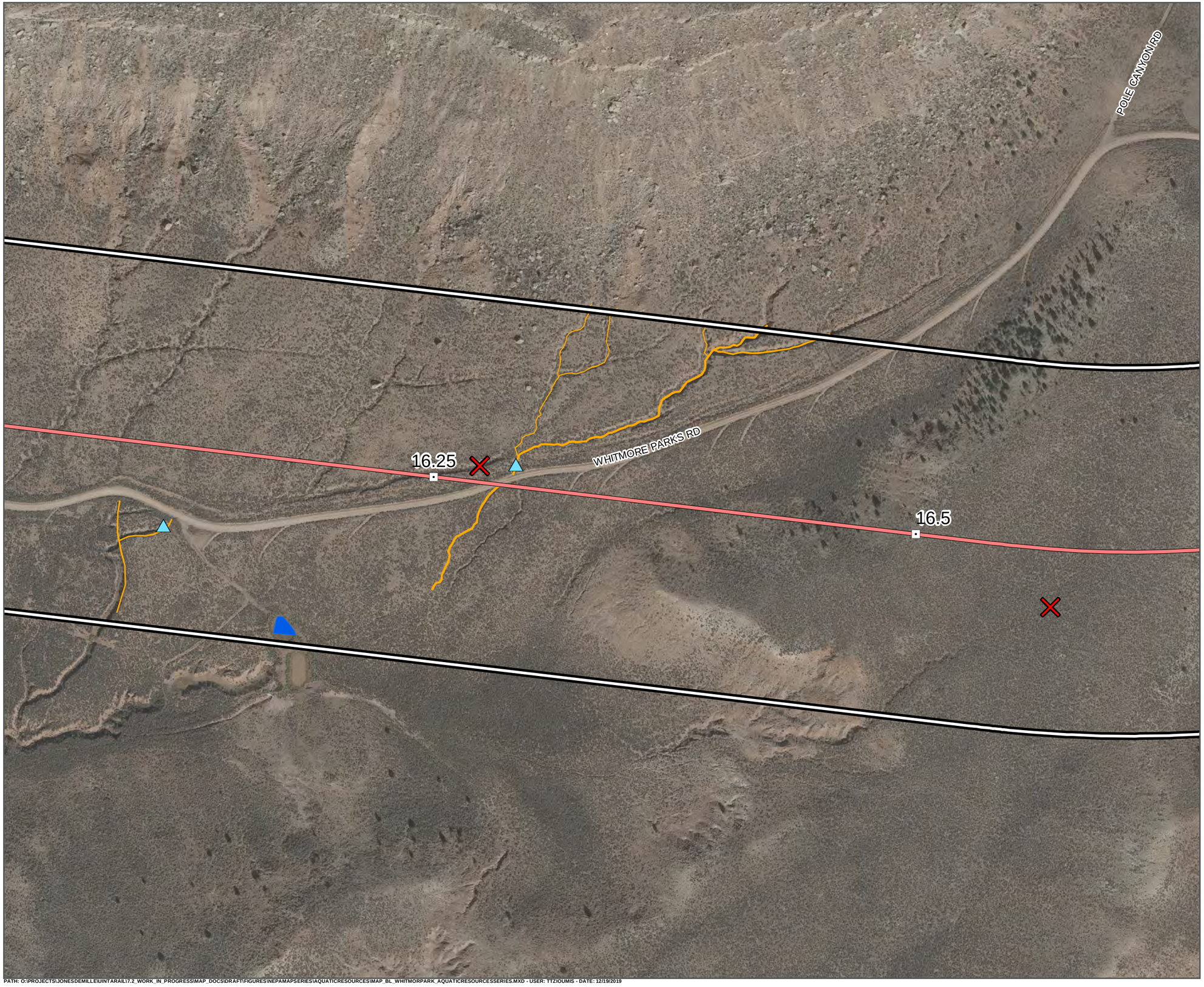
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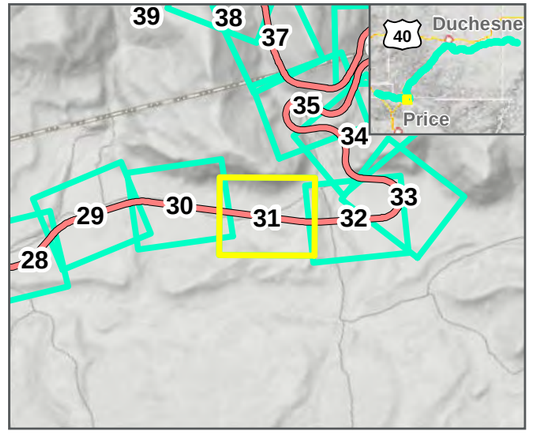
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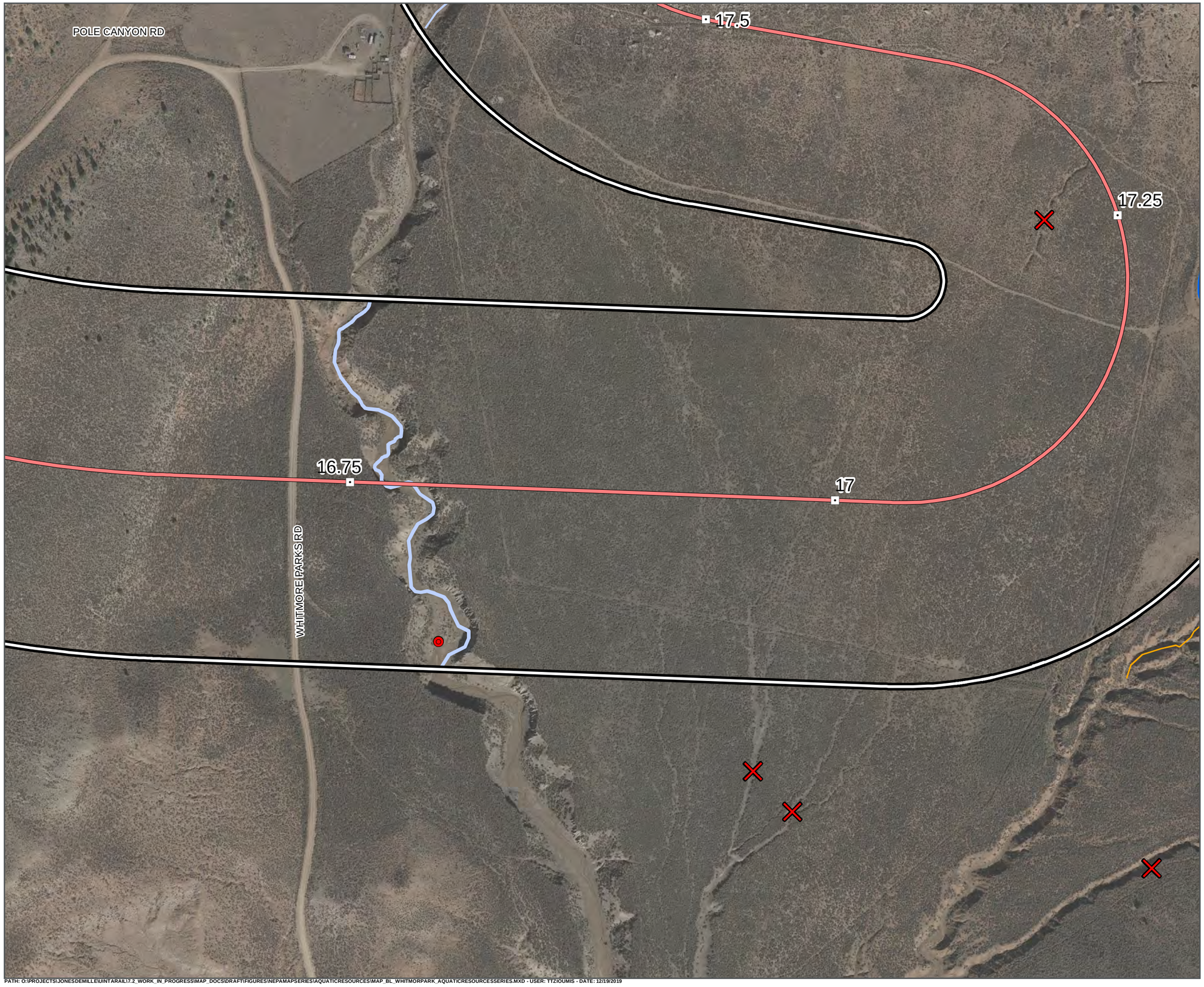
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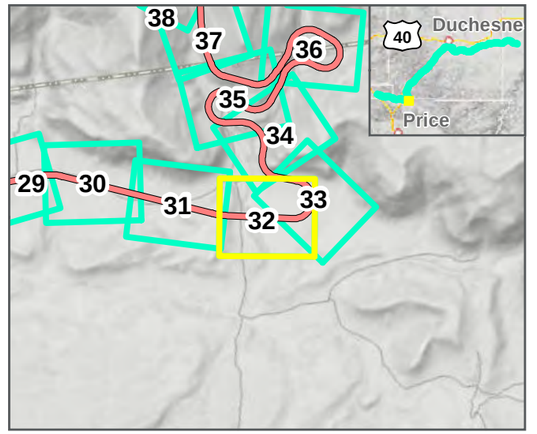
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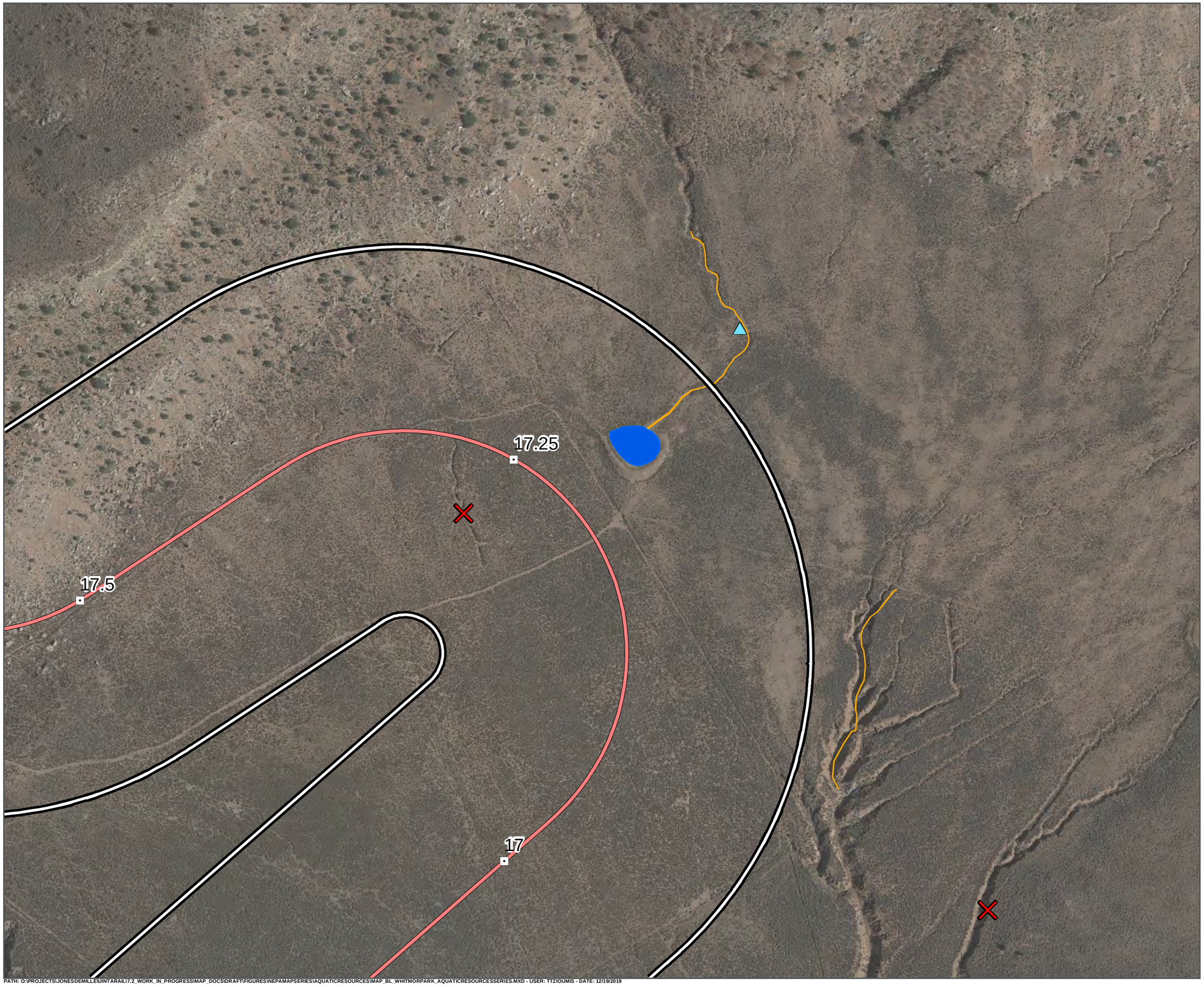
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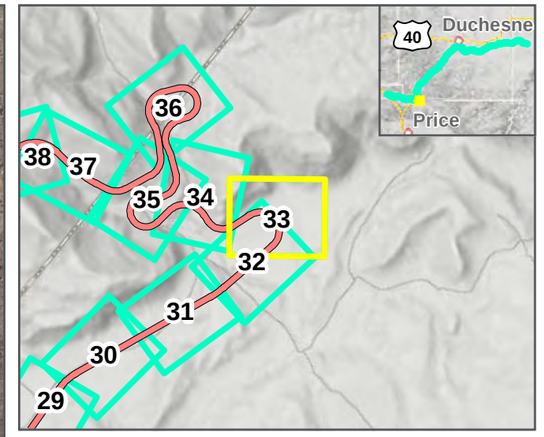
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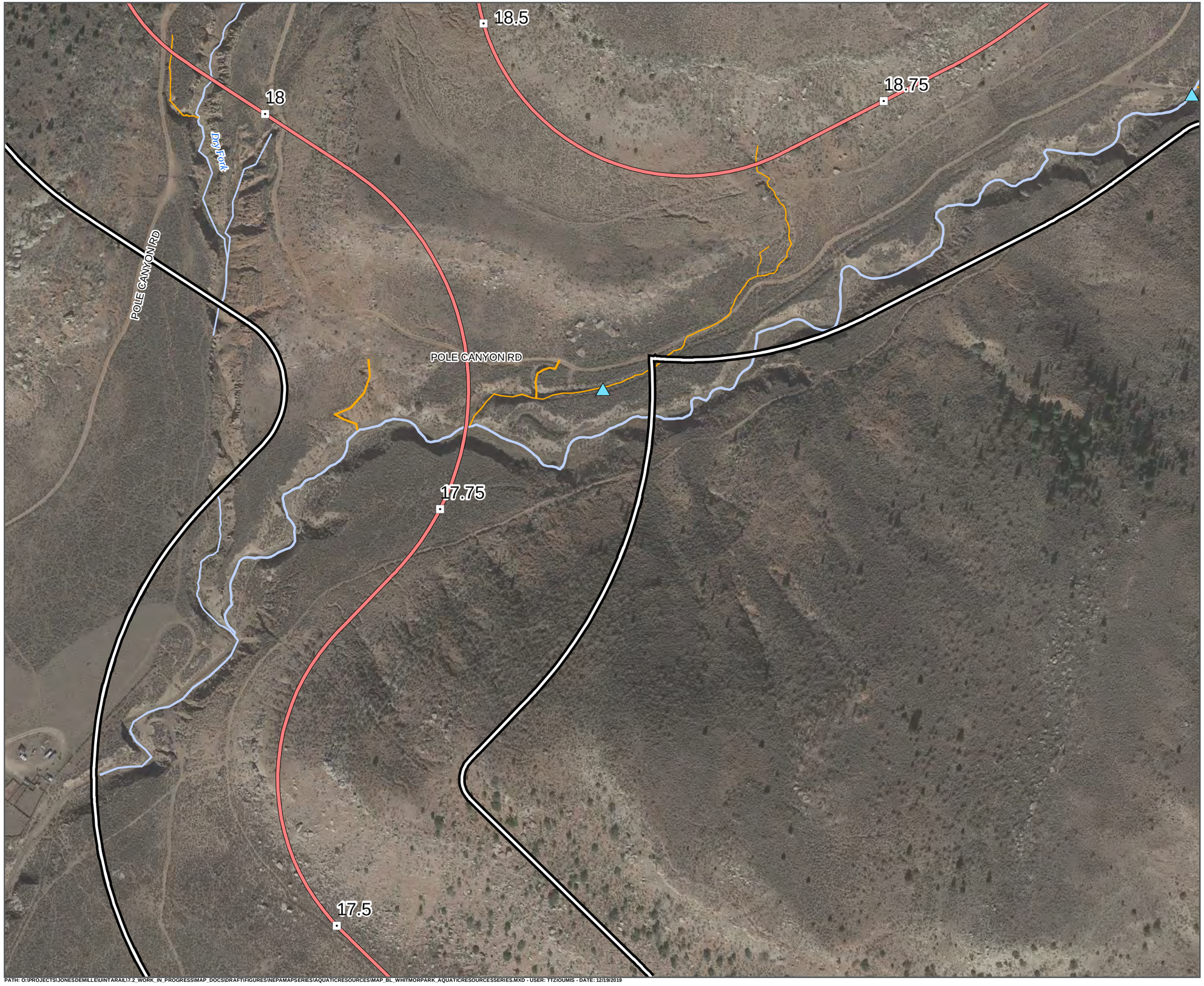
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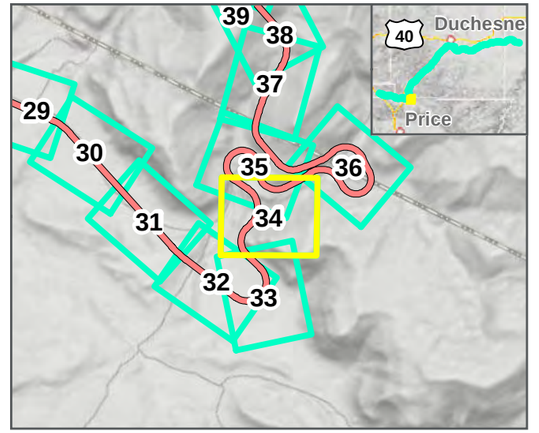
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SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

PATH: O:\PROJECTS\JONESDEMILLE\UINTARAIL\7-2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\FIGURES\NEPAMAPSERIES\AQUATICRESOURCES\MAP_BL_WHITMORPARK_AQUATICRESOURCESSERIES.MXD - USER: TTZIOUMIS - DATE: 12/19/2019





- Mileposts
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- Ditch/Canal
- Study Area
- Map Extent (current view in yellow)

WHITMORE PARK ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

0 125 250 Feet

1 inch = 250 Feet

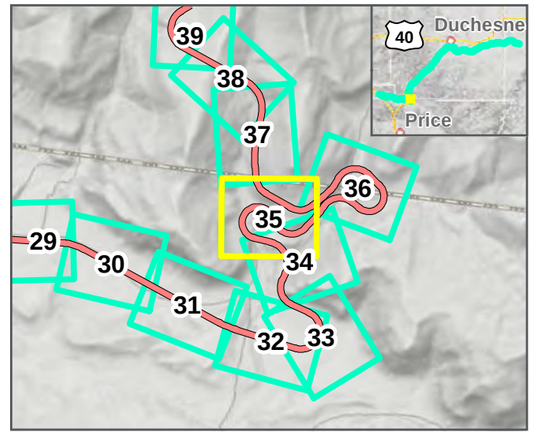
DATA SOURCES:
HDR Field Work & Engineering 2019
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AQUATIC RESOURCES
DECEMBER 2019

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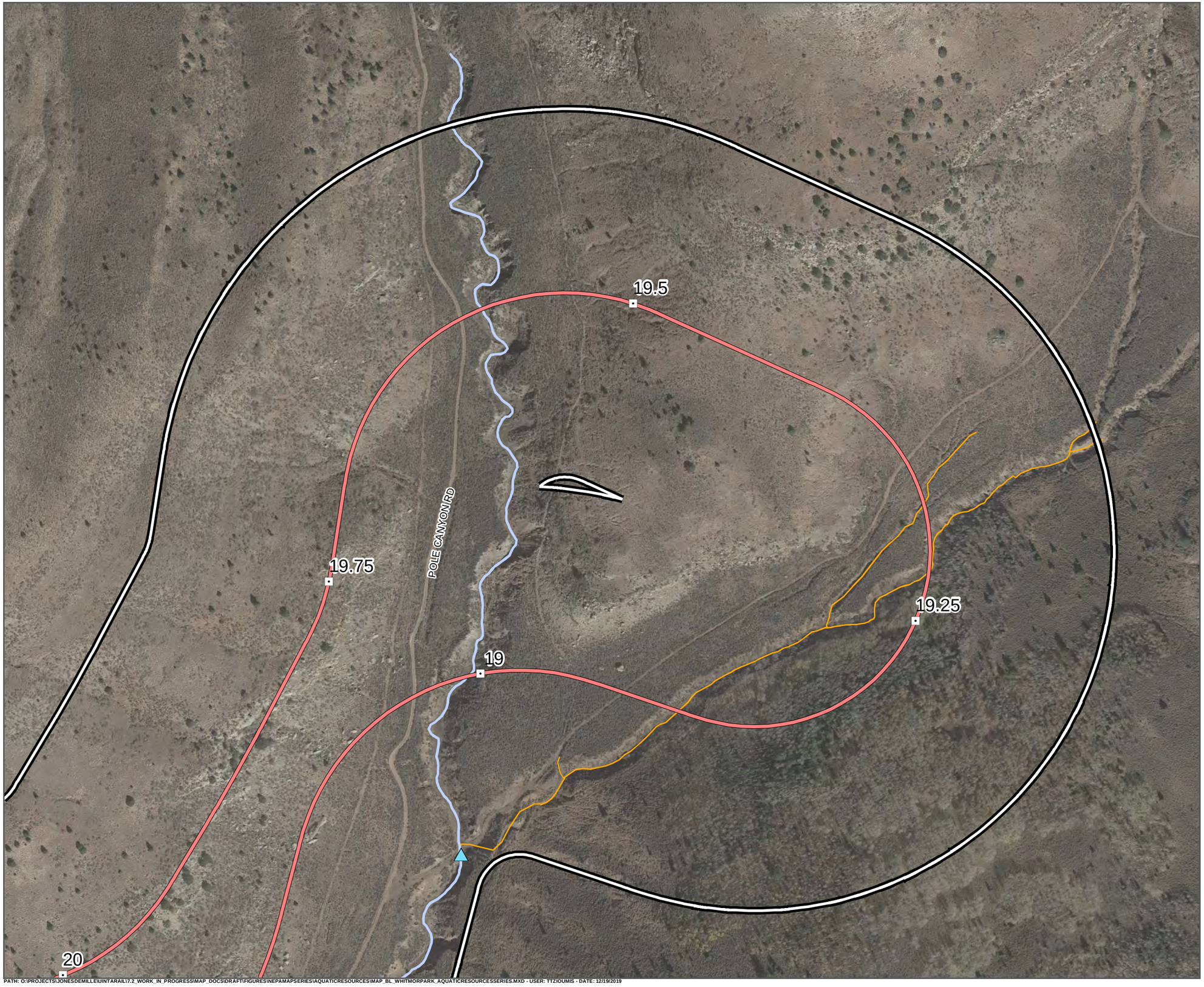
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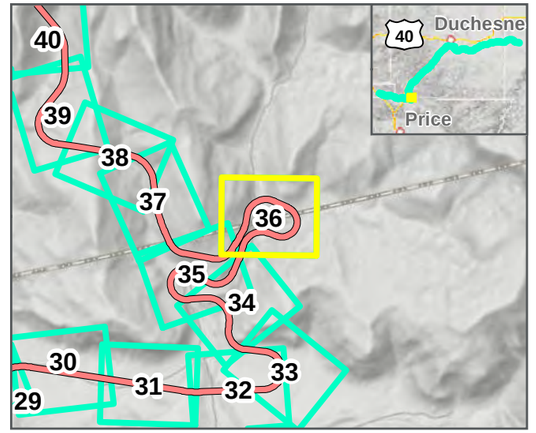
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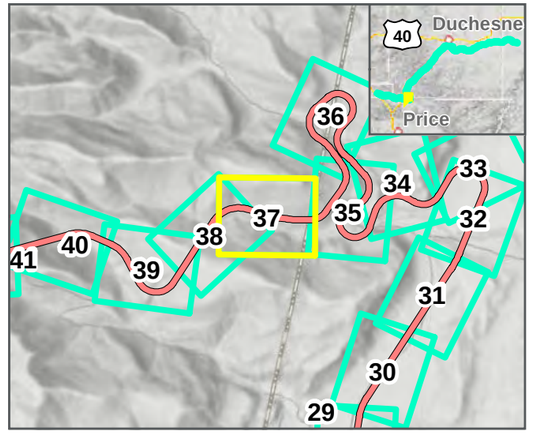
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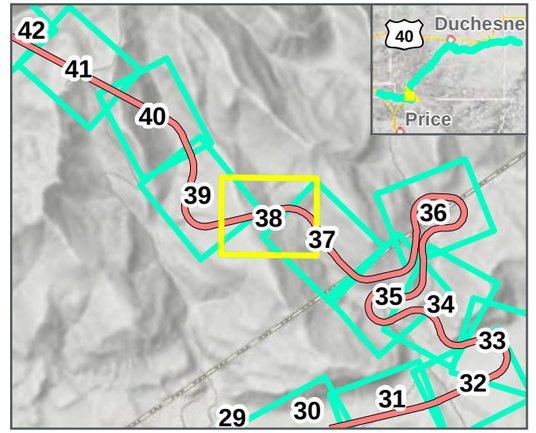
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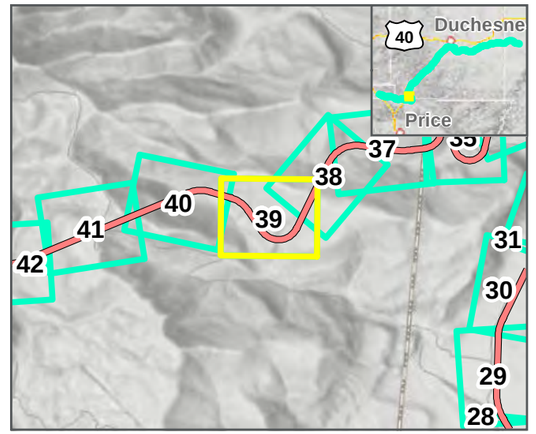
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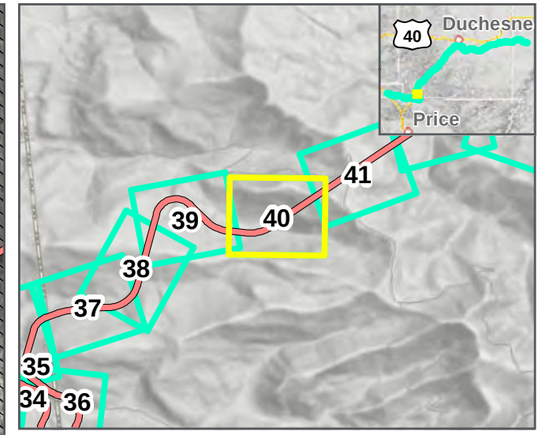
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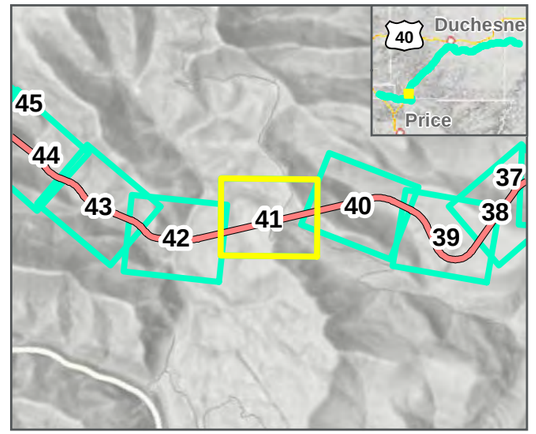
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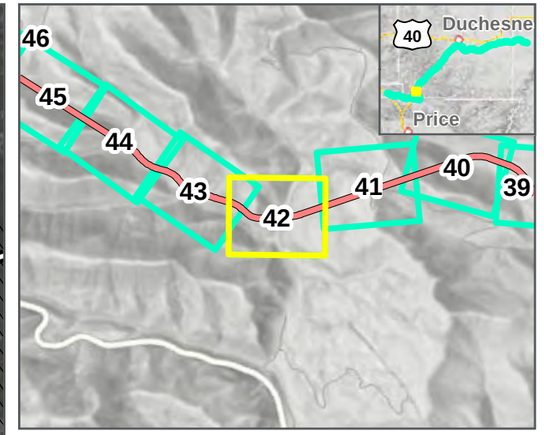
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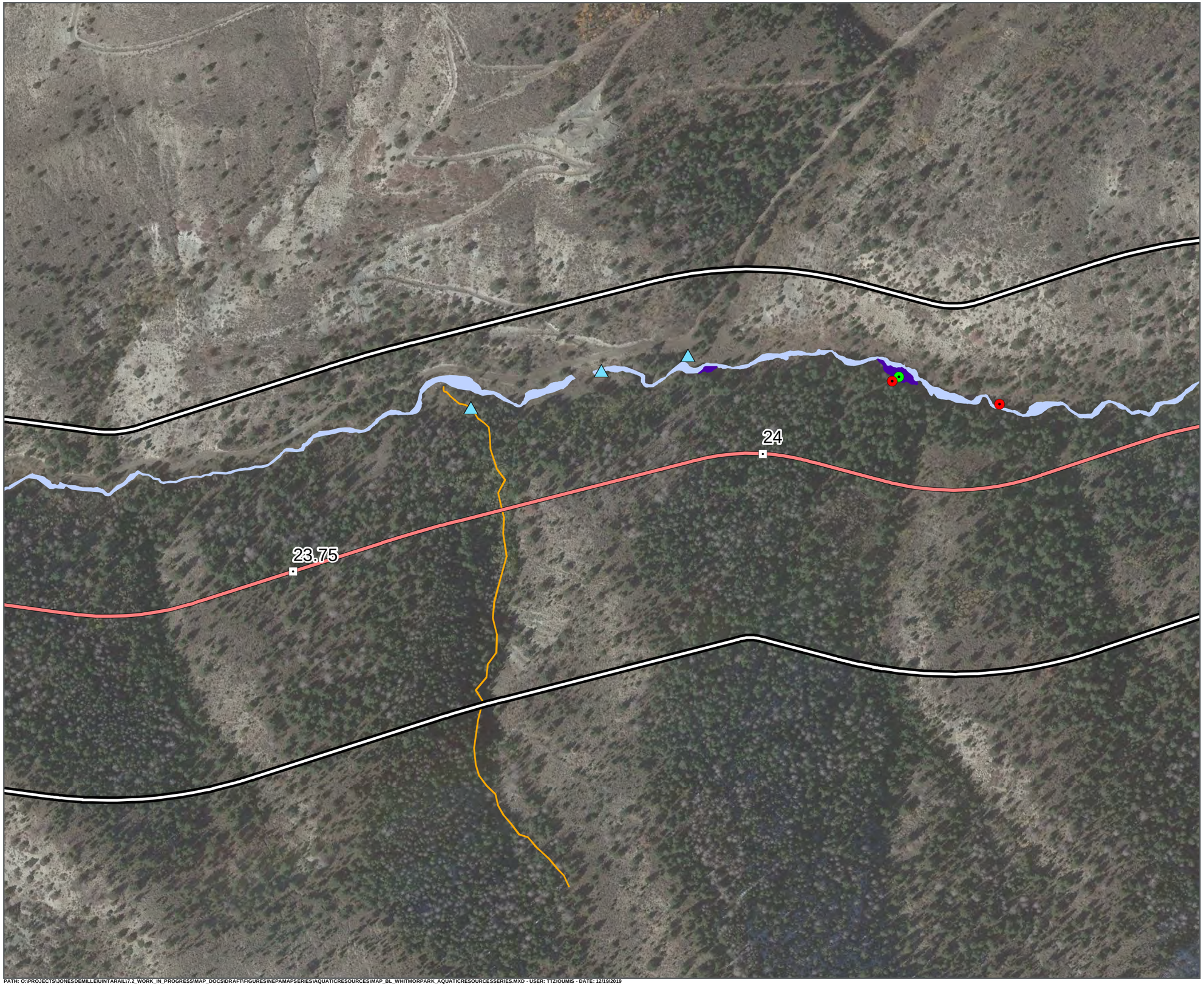
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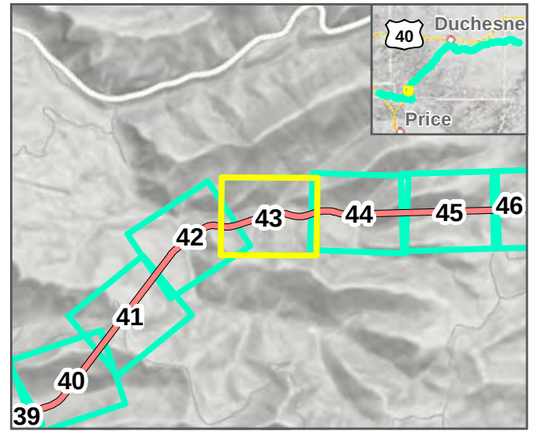
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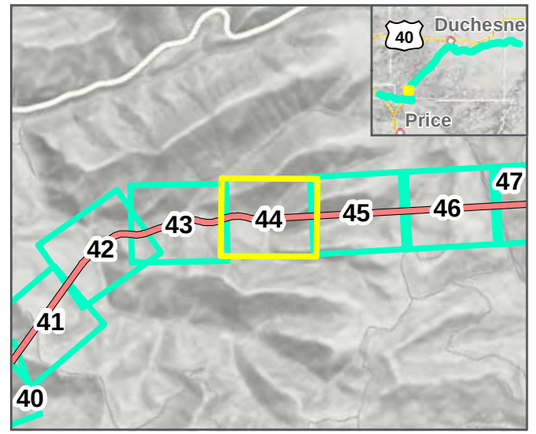
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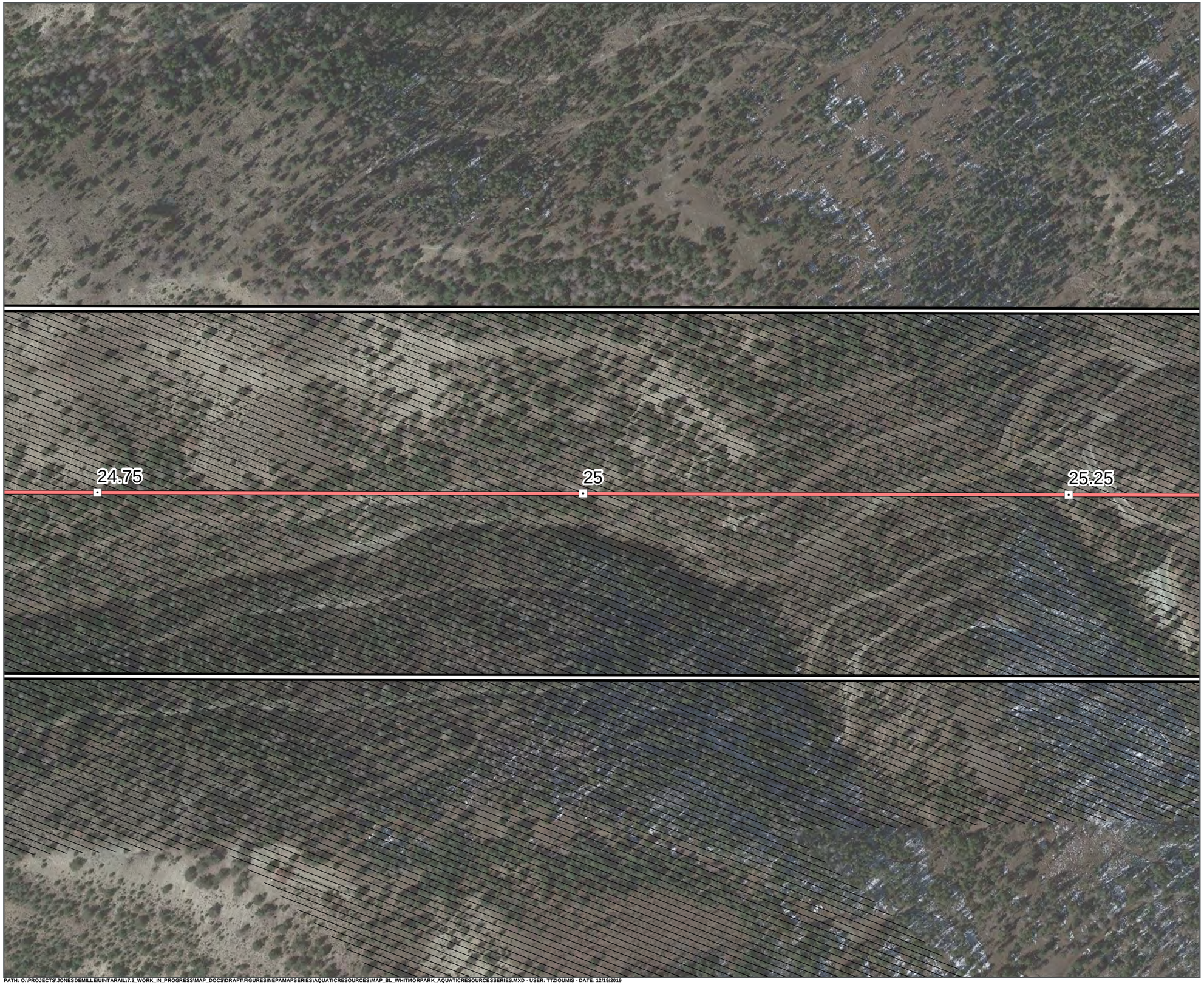
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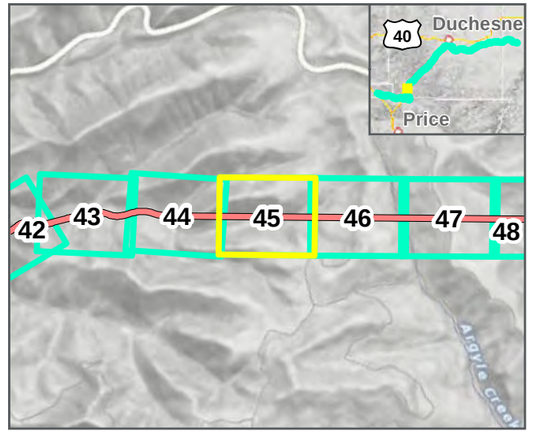
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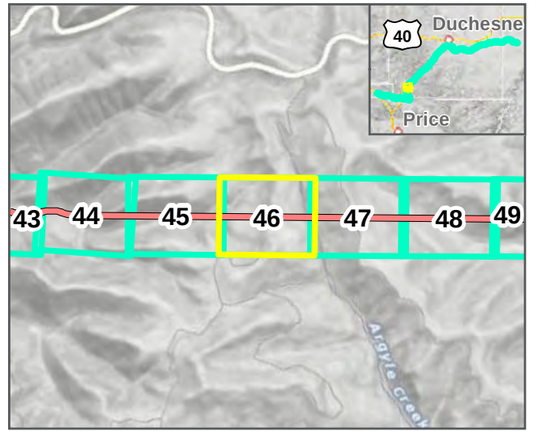
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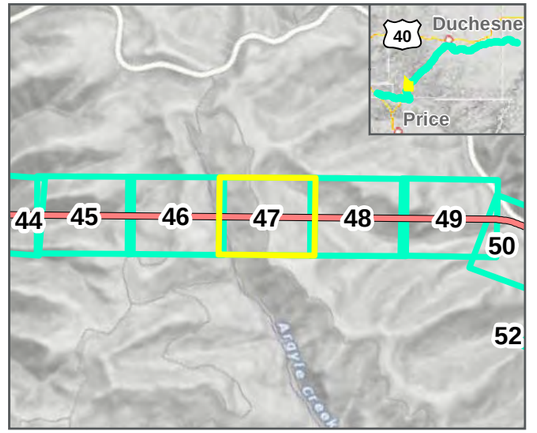
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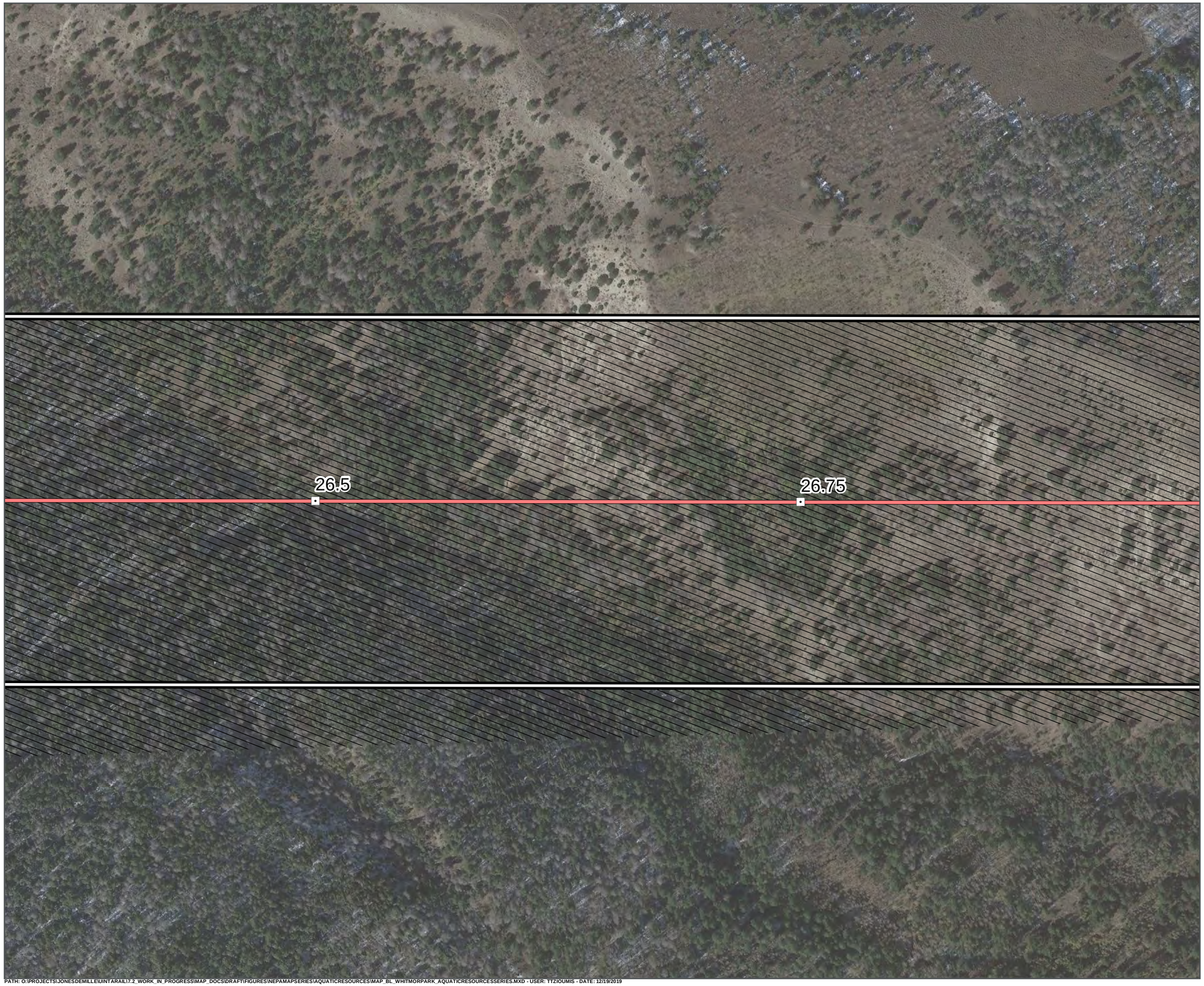
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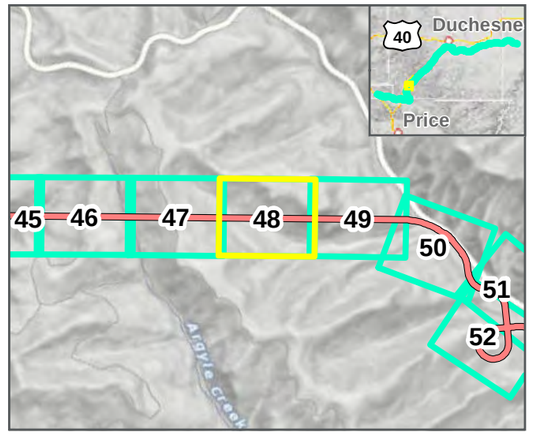
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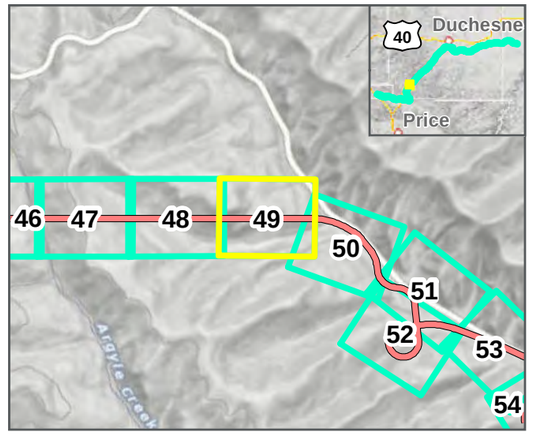
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PATH: O:\PROJECTS\JONESDEMILLE\UINTARAIL\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\FIGURES\NEPAMAPSERIES\AQUATICRESOURCES\MAP_BL_WHITMORPARK_AQUATICRESOURCESSERIES.MXD - USER: TTZIOUMIS - DATE: 12/19/2019





- Mileposts
- Whitmore Park Centerline
- Areas Not Surveyed (Data Digitized)
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- Shrub-Scrub
- Playa
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- Perennial Stream
- Ephemeral/Intermittent Stream
- Ditch/Canal
- Study Area
- Map Extent (current view in yellow)

WHITMORE PARK ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

0 125 250 Feet

1 inch = 250 Feet

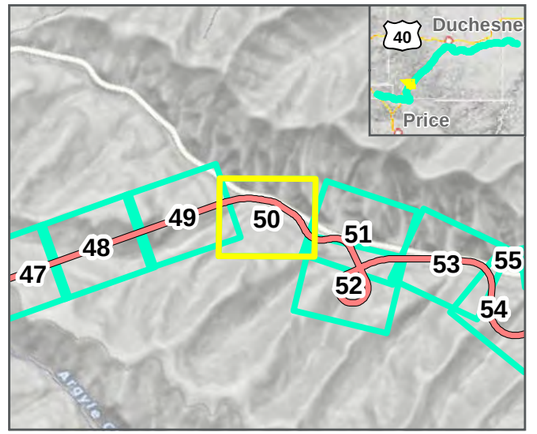
DATA SOURCES:
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COODINATE SYSTEM:
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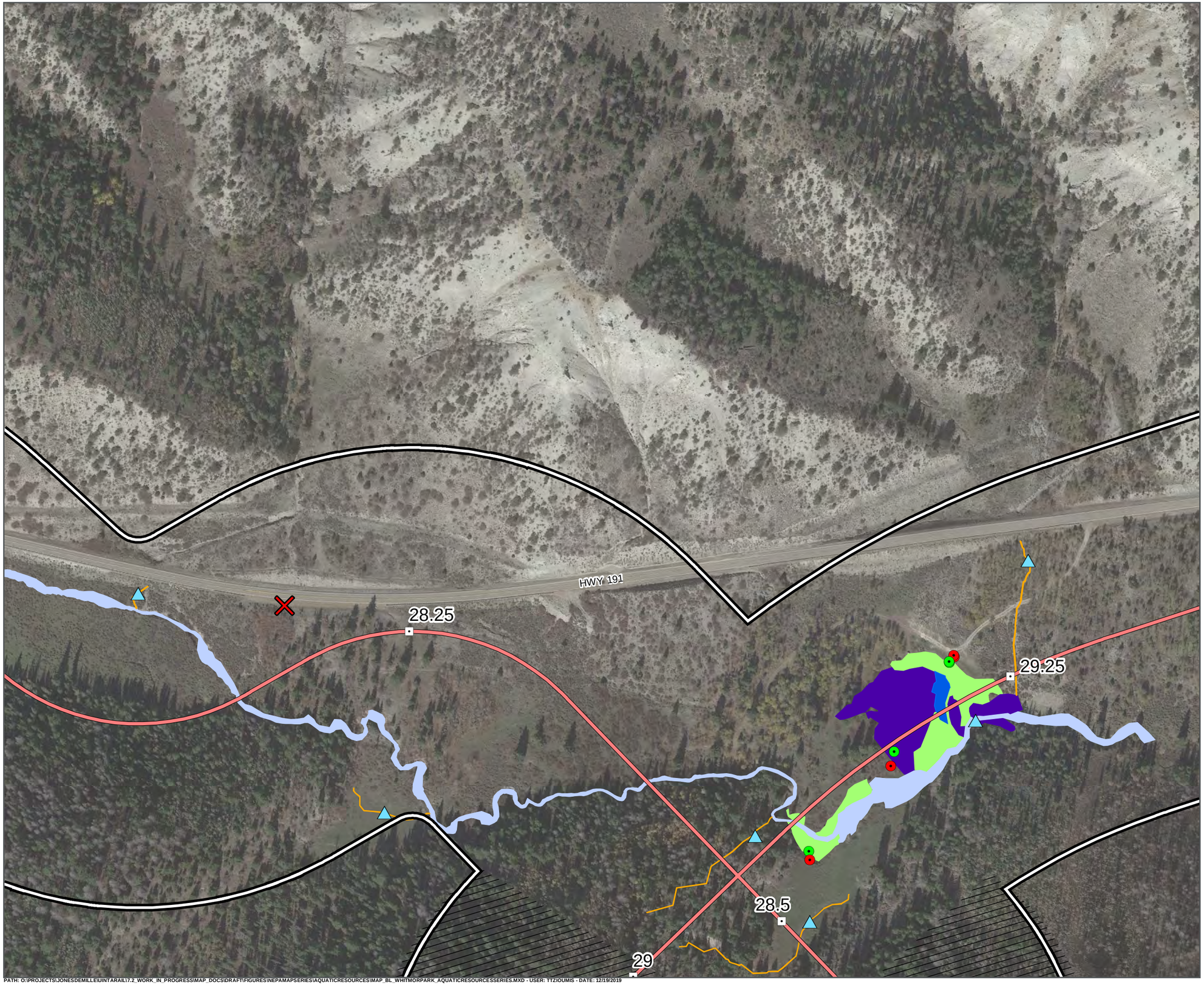
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DECEMBER 2019

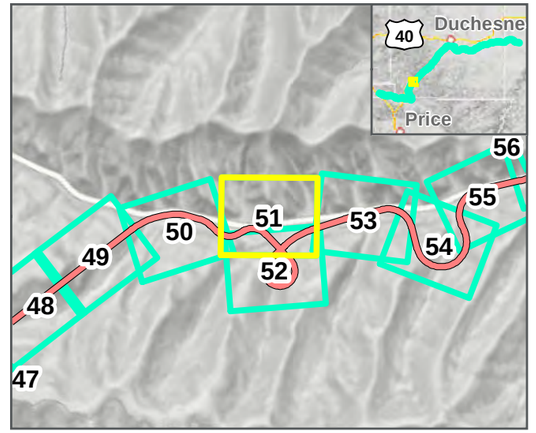
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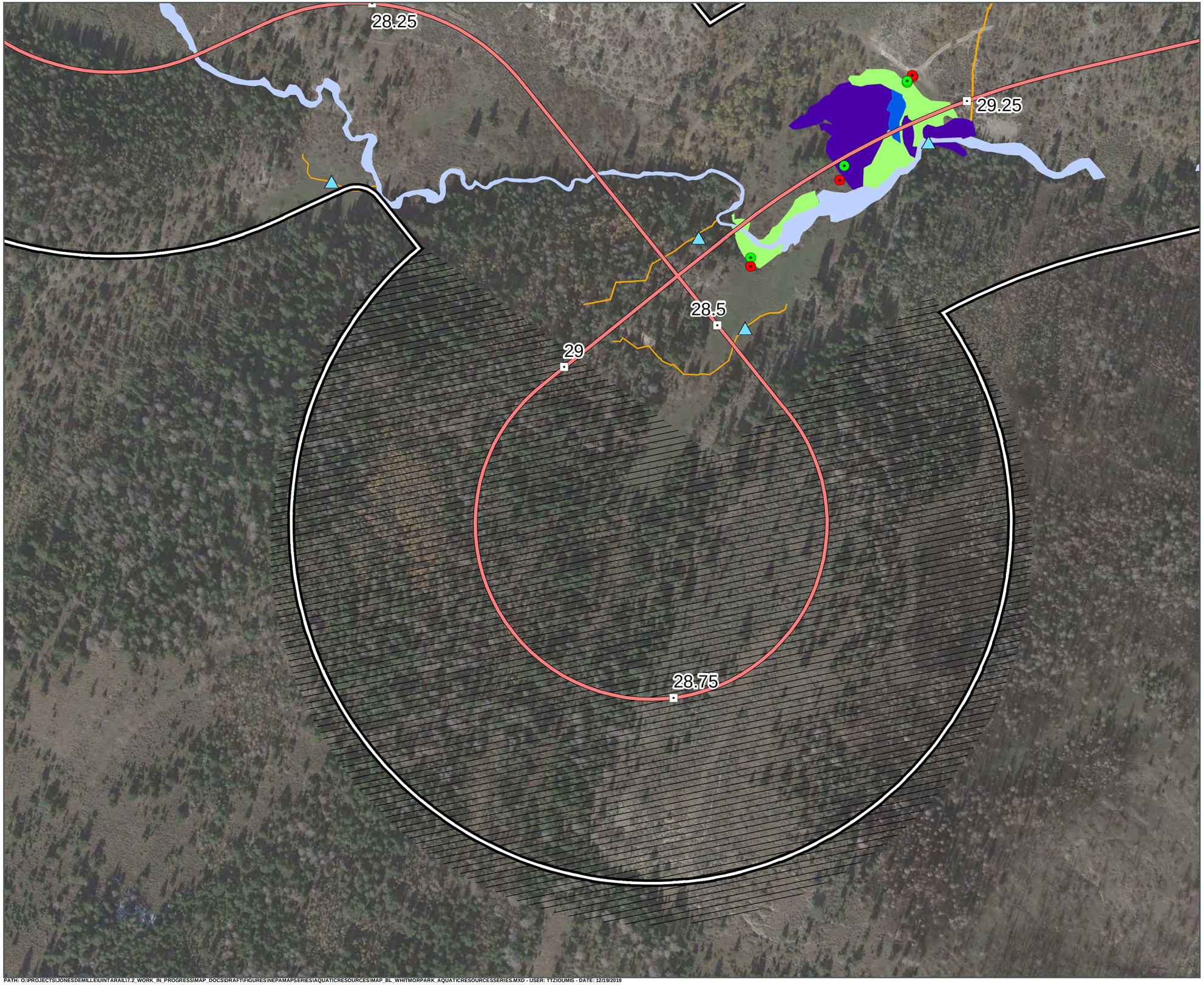
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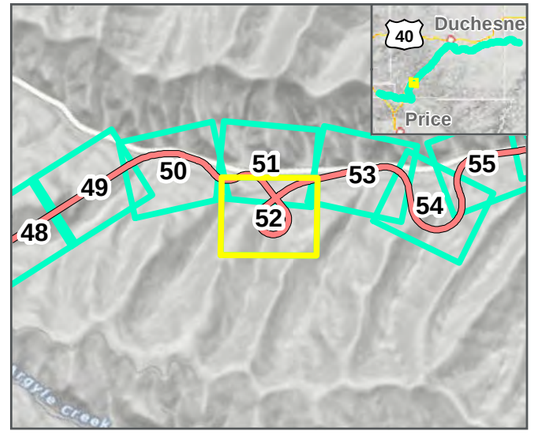
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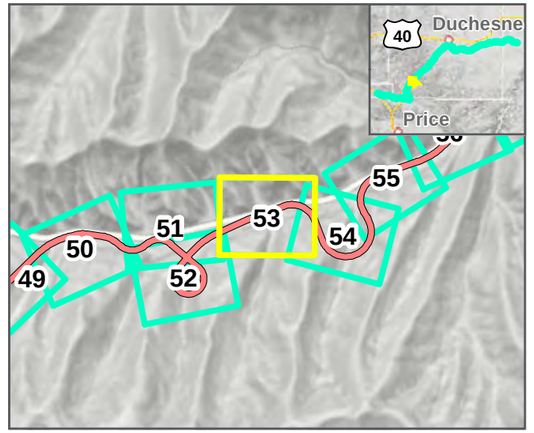
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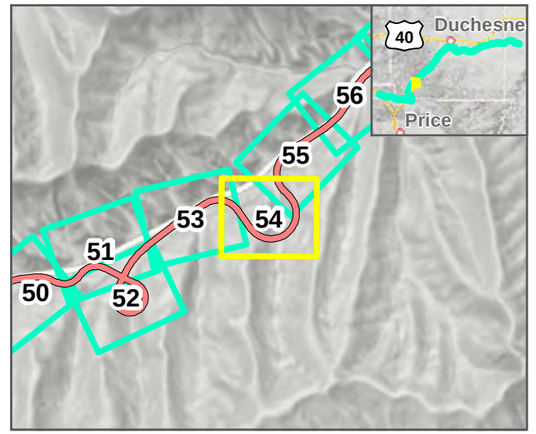
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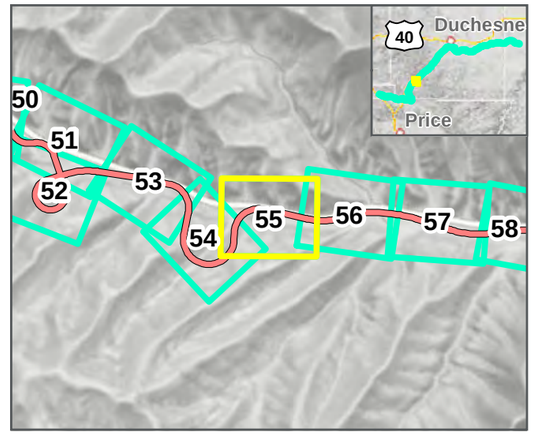
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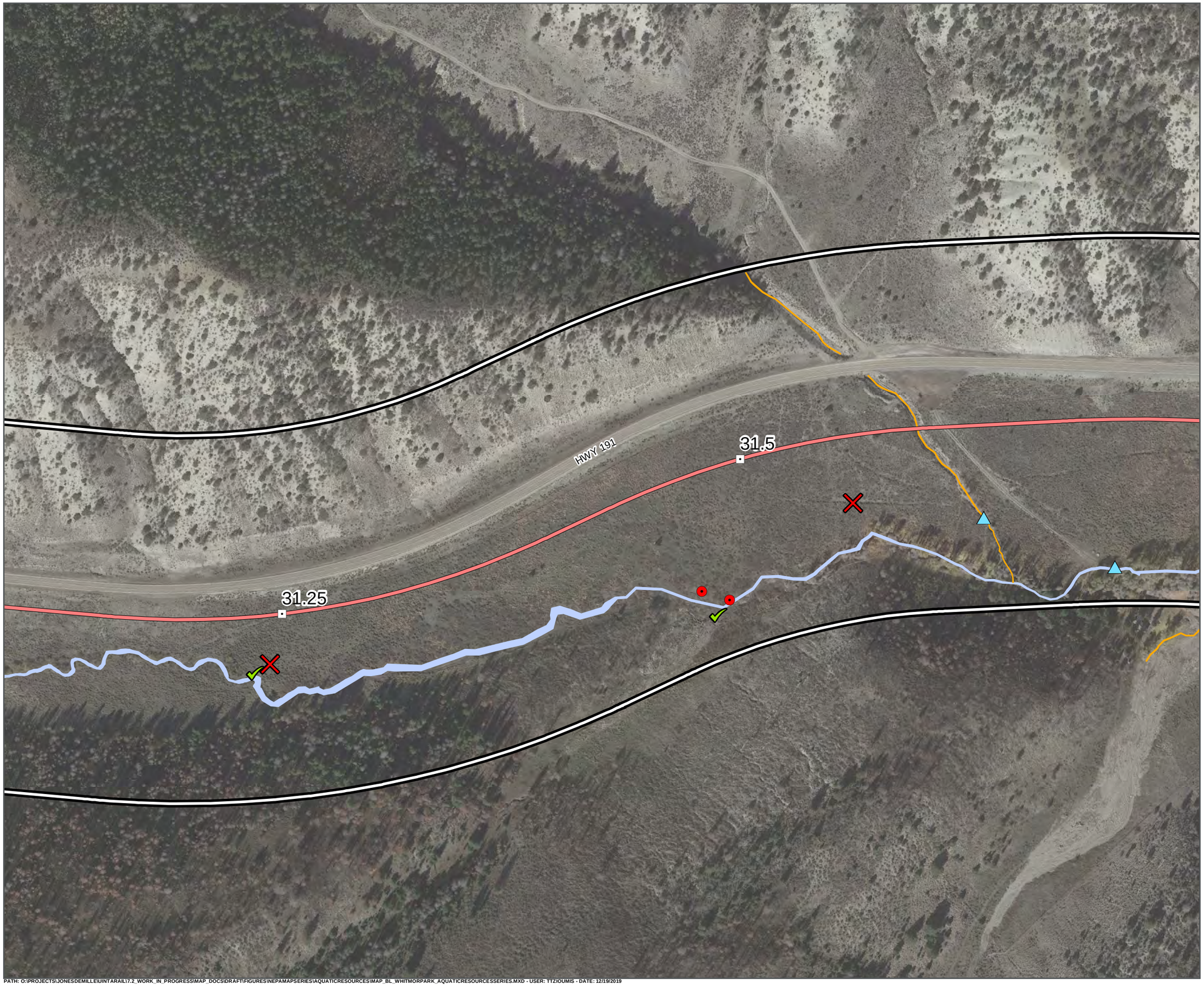
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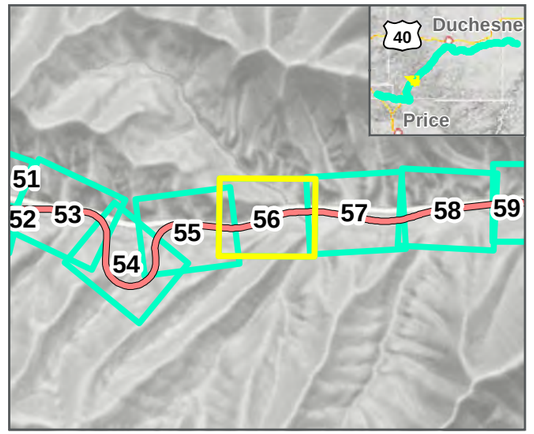
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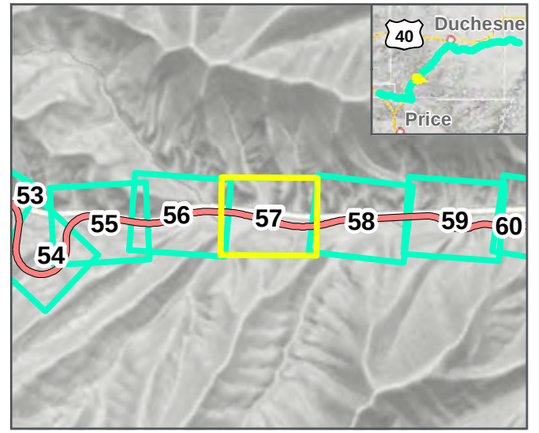
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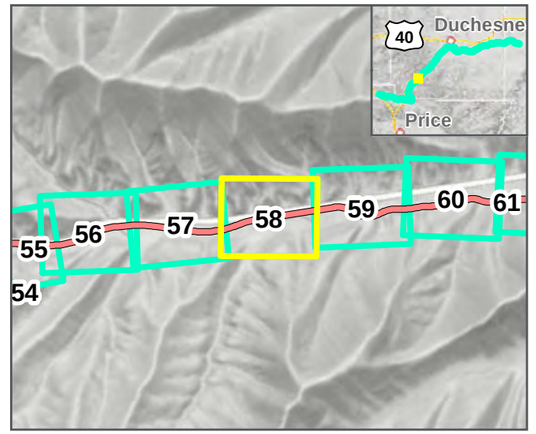
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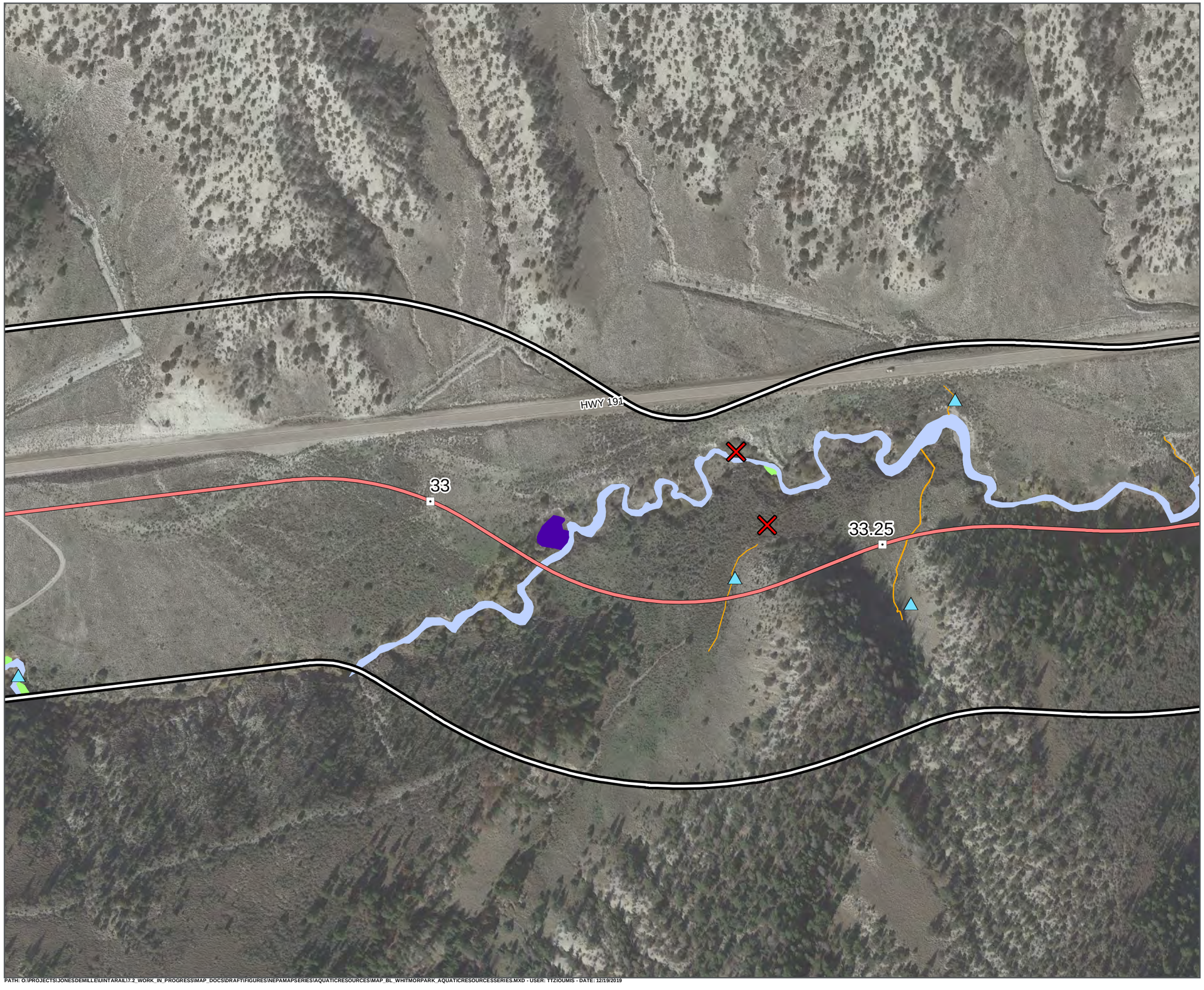
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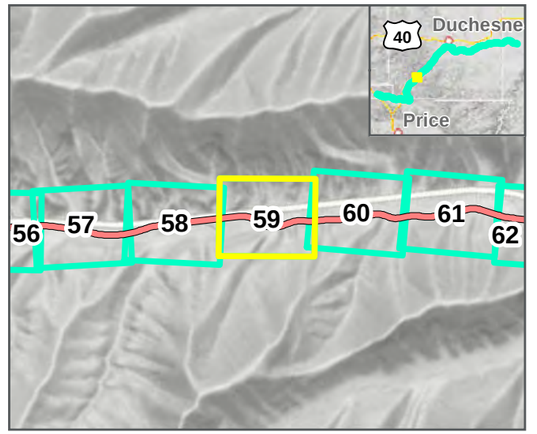
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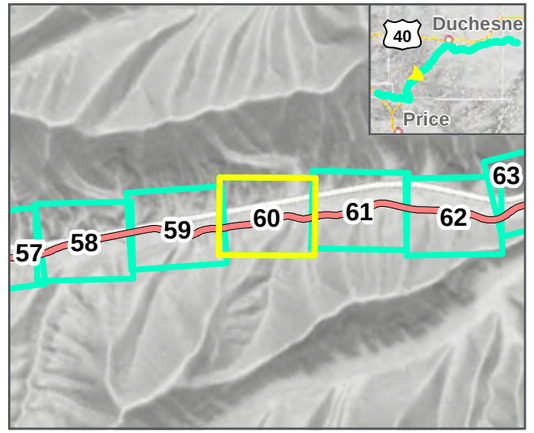
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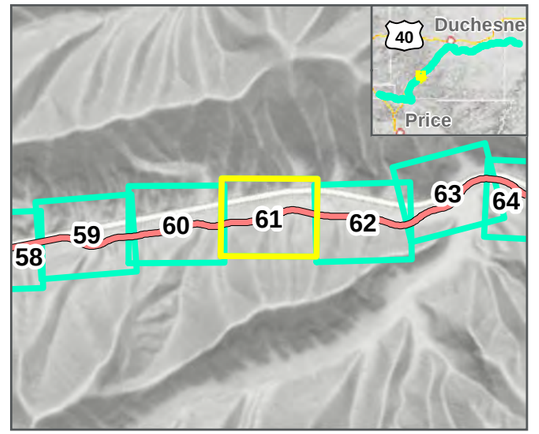
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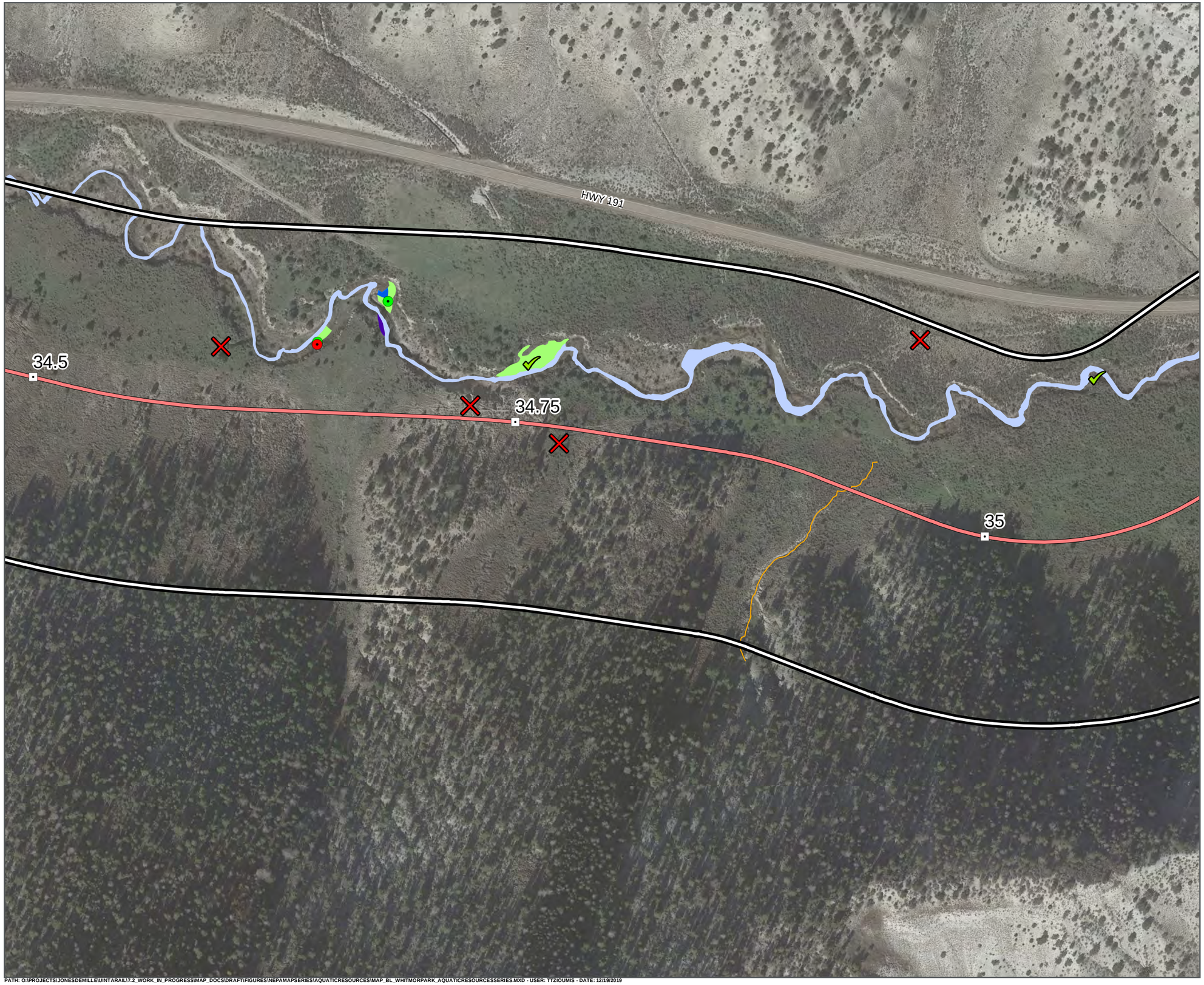
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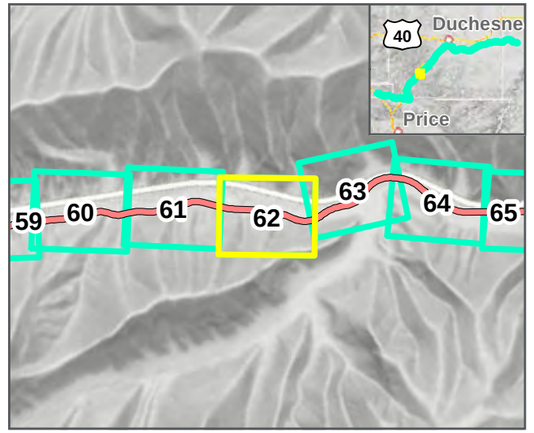
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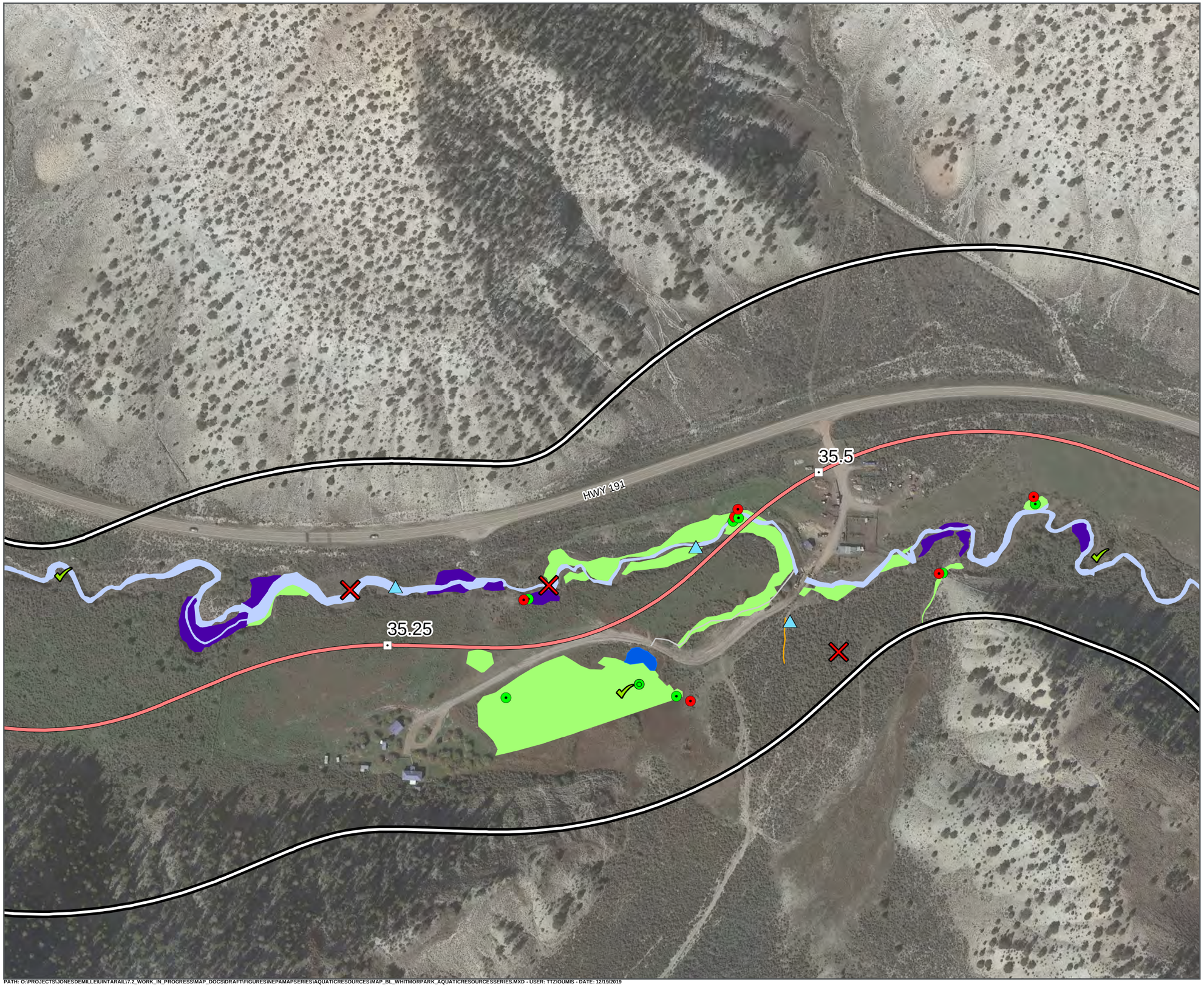
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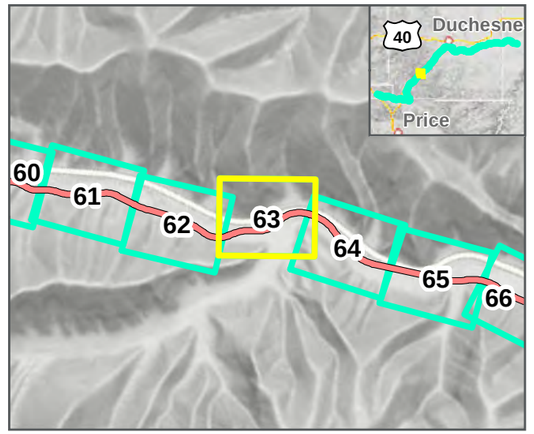
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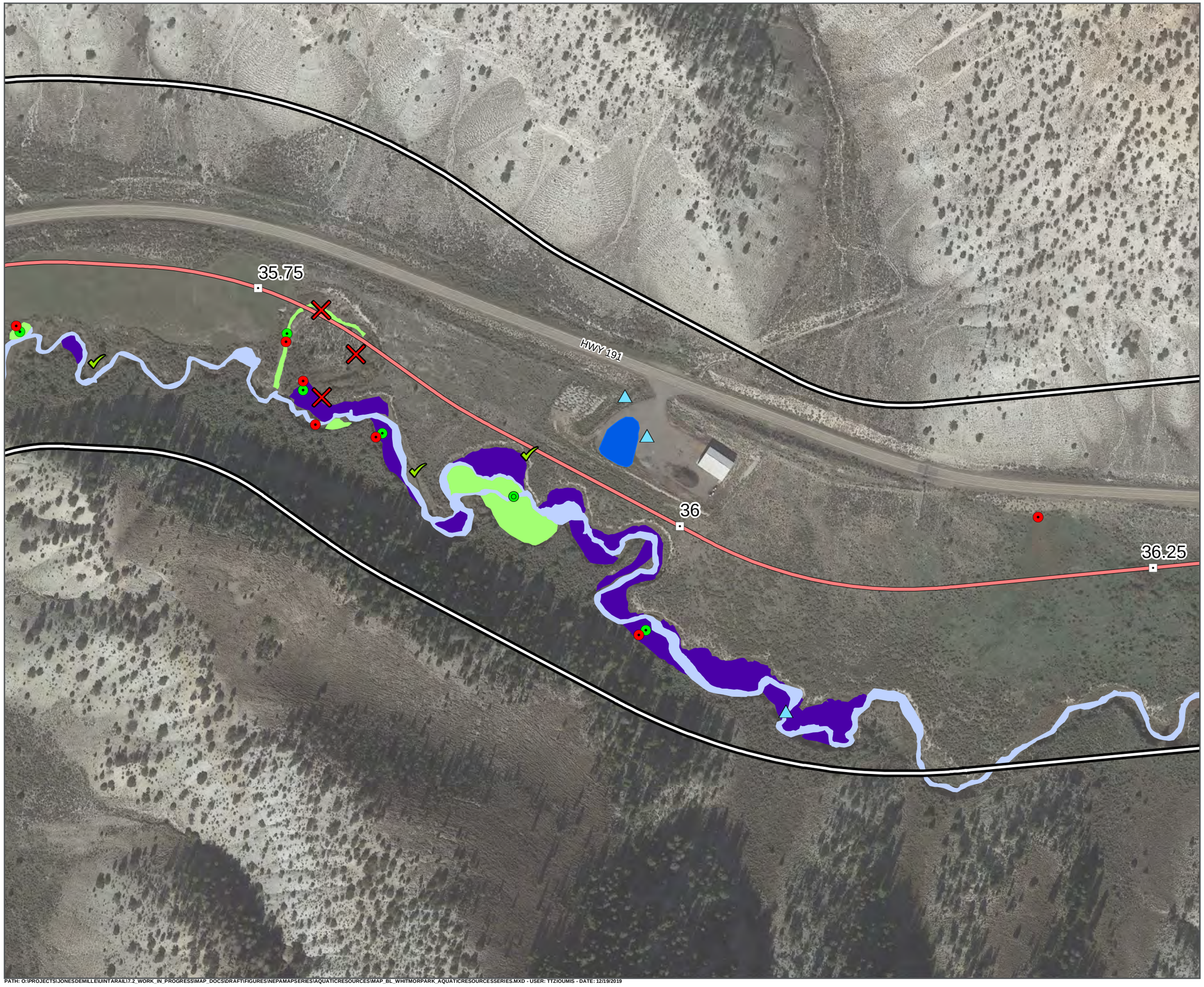
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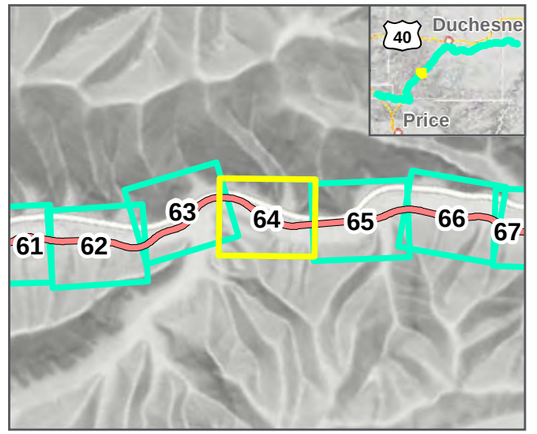
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

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- Mileposts
- Whitmore Park Centerline
- Areas Not Surveyed (Data Digitized)
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WHITMORE PARK ALTERNATIVE: 11/22/2019

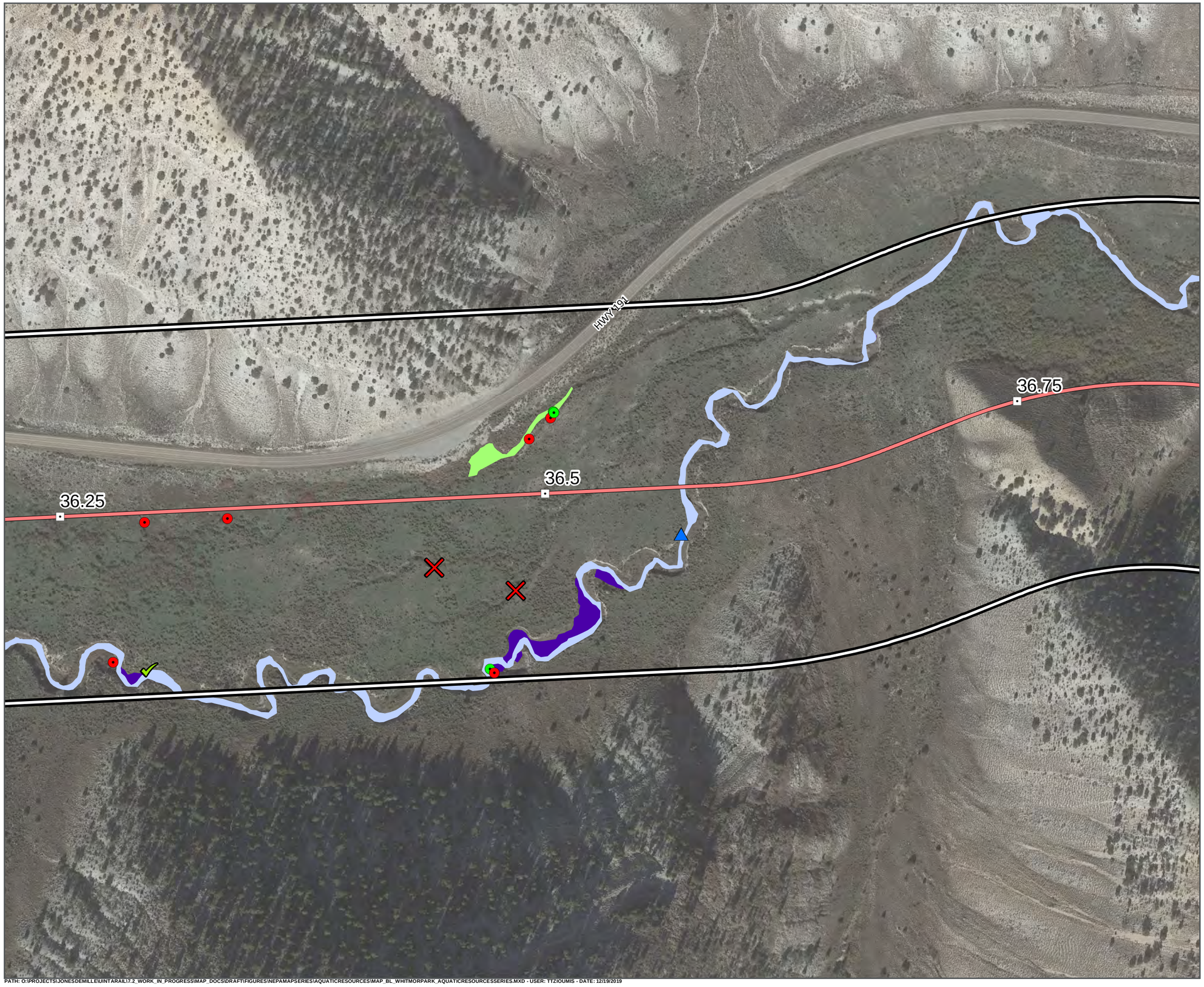
AQUATIC RESOURCES
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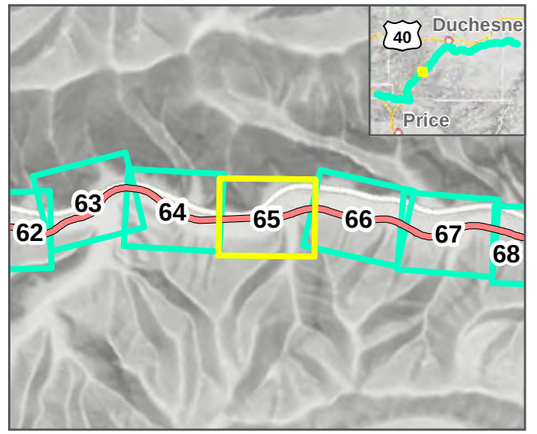
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DECEMBER 2019

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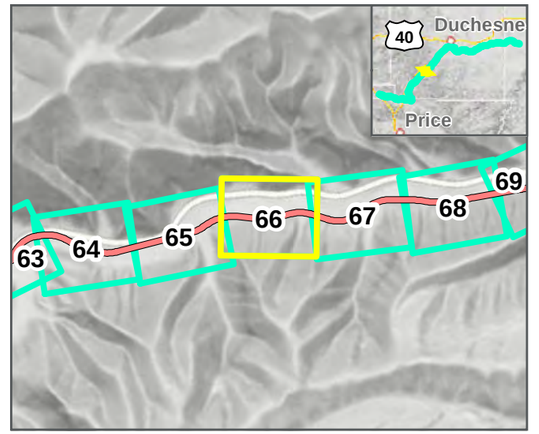
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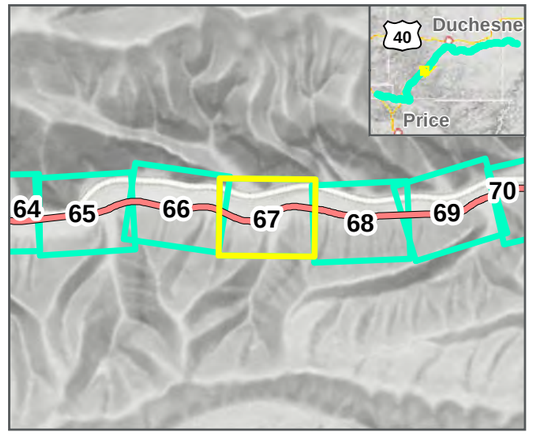
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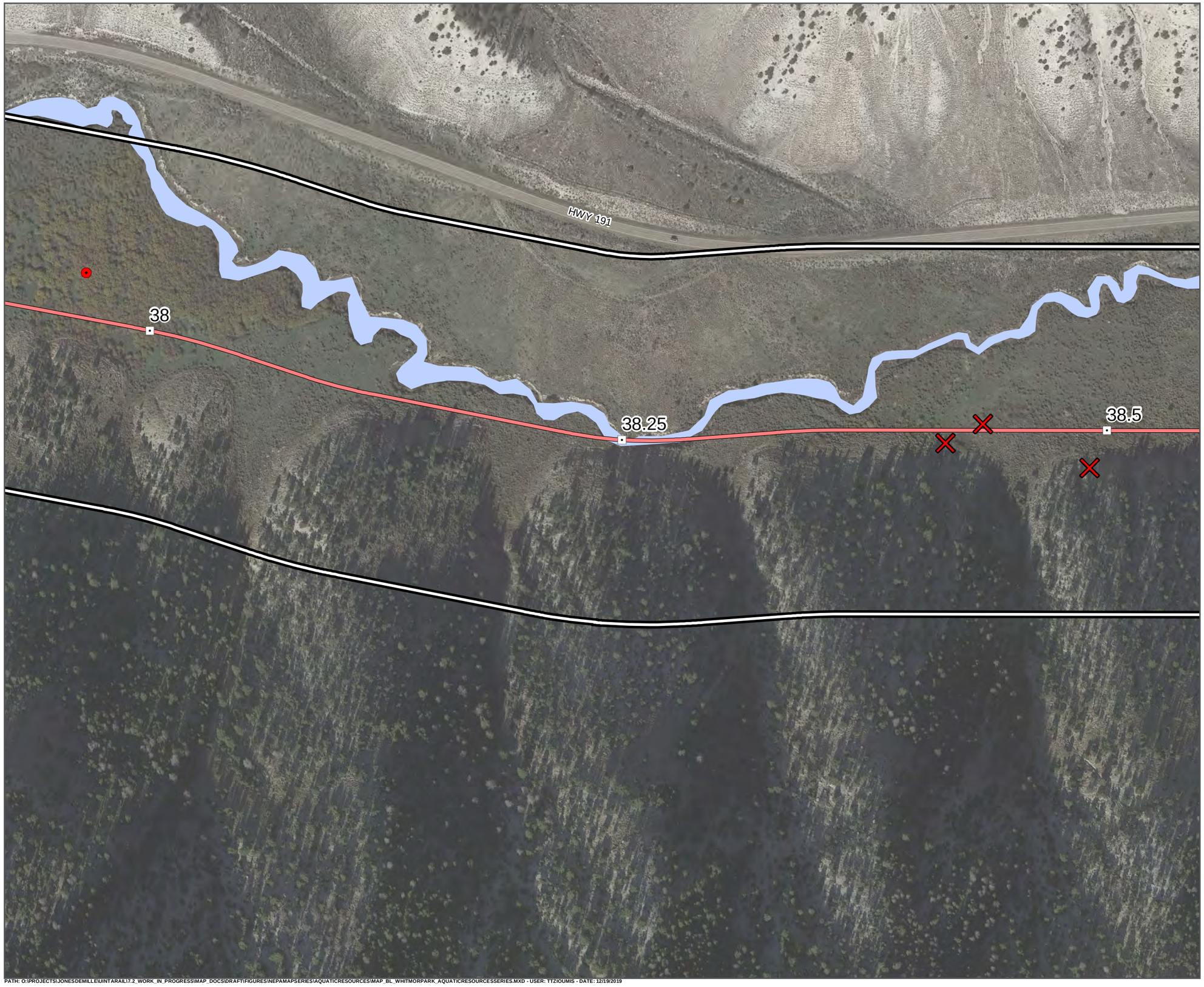
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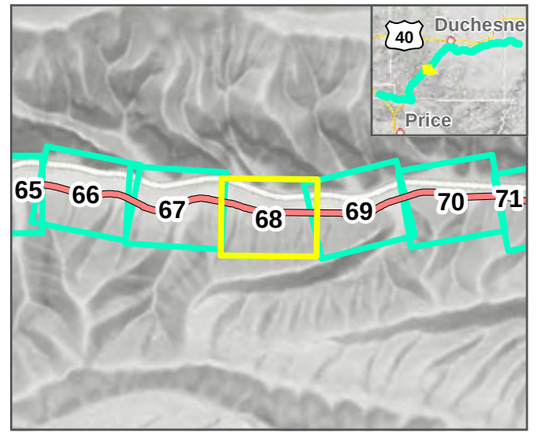
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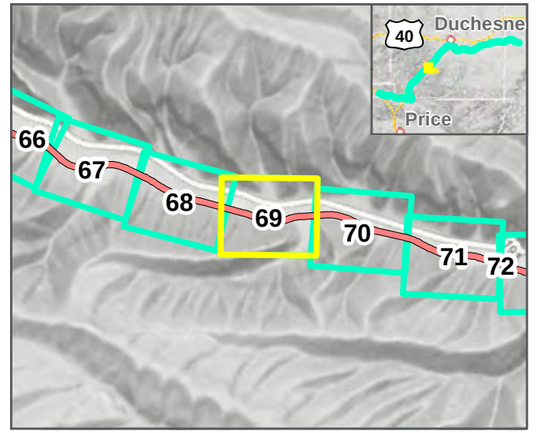
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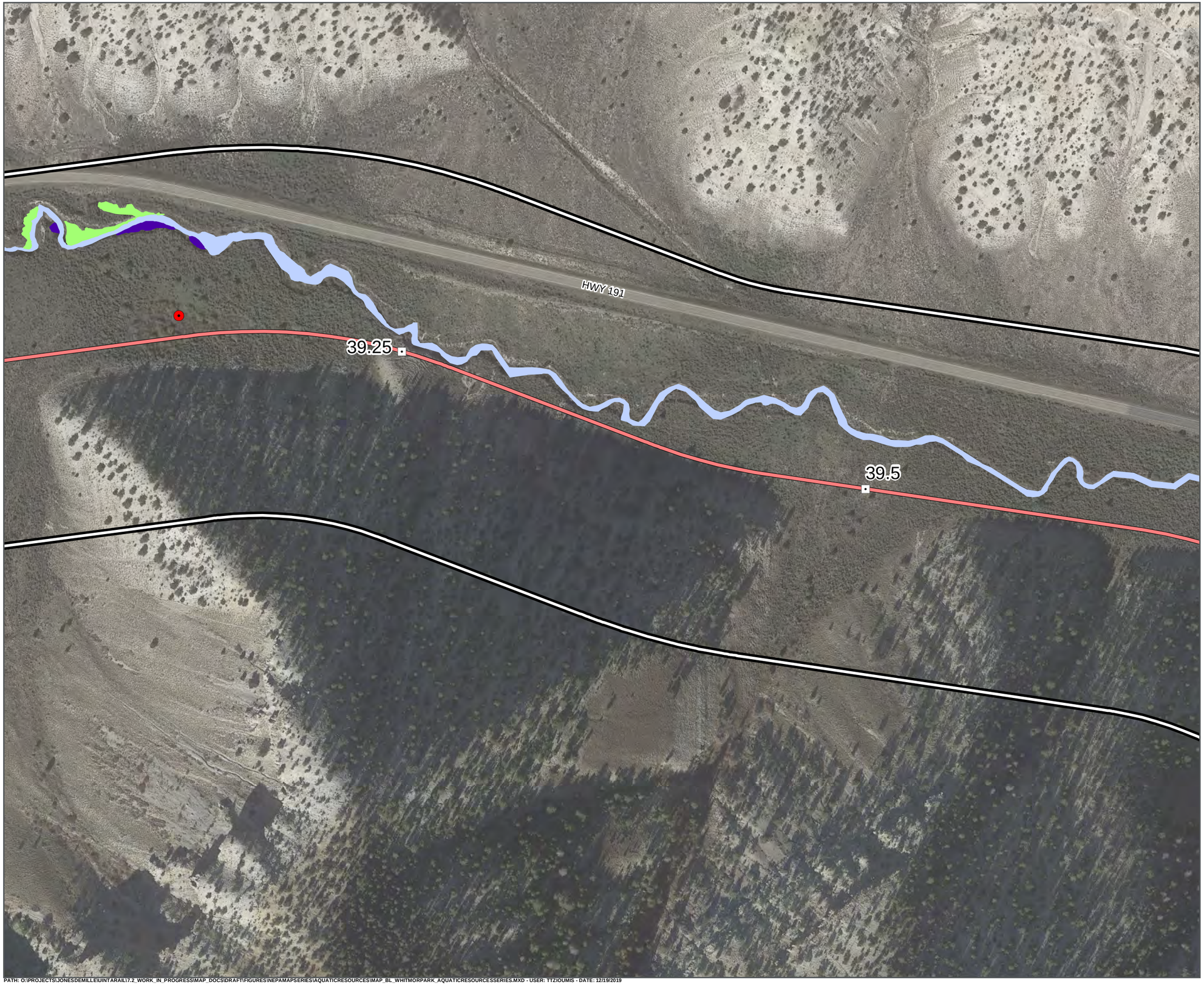
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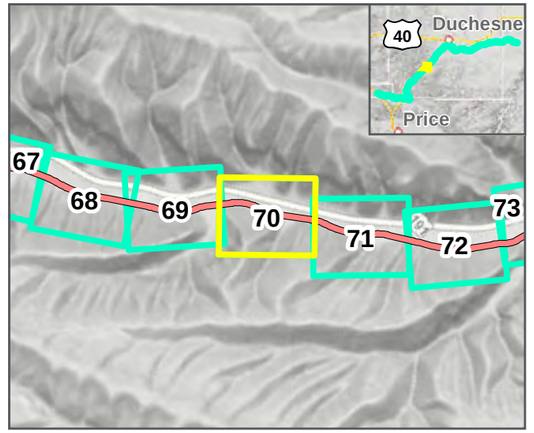
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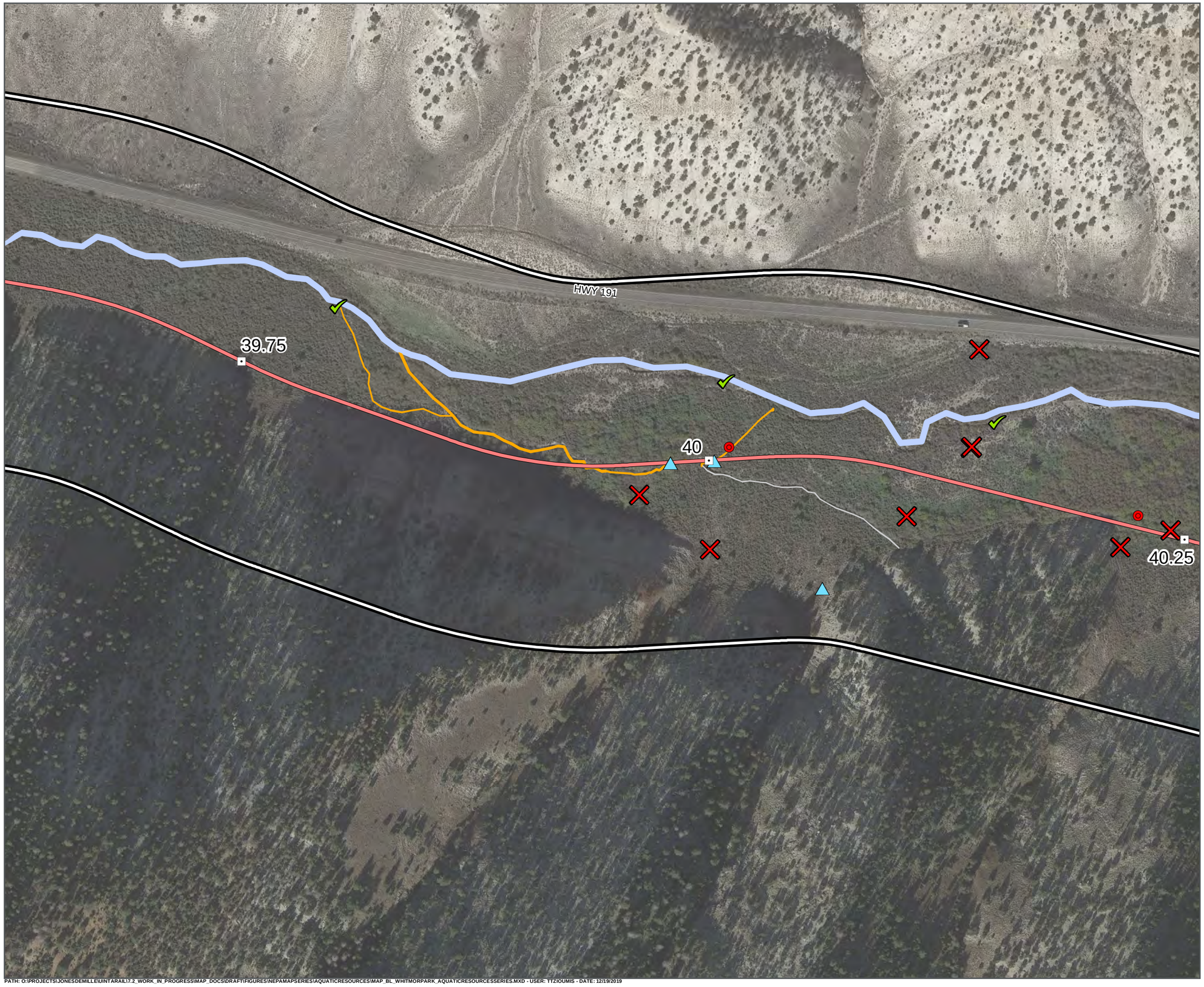
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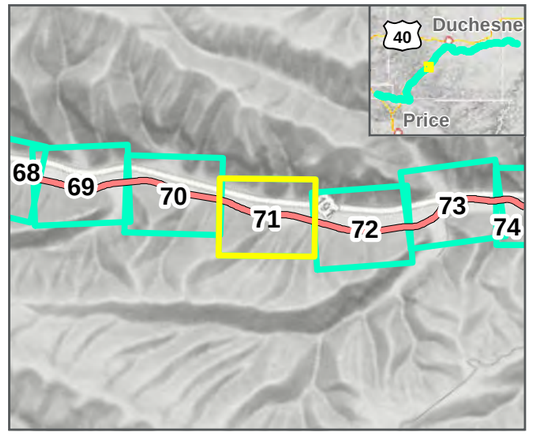
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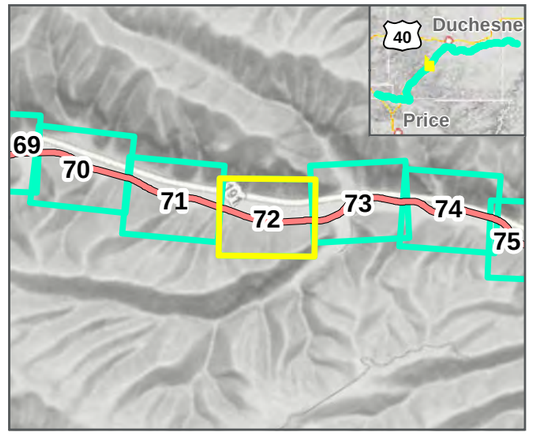
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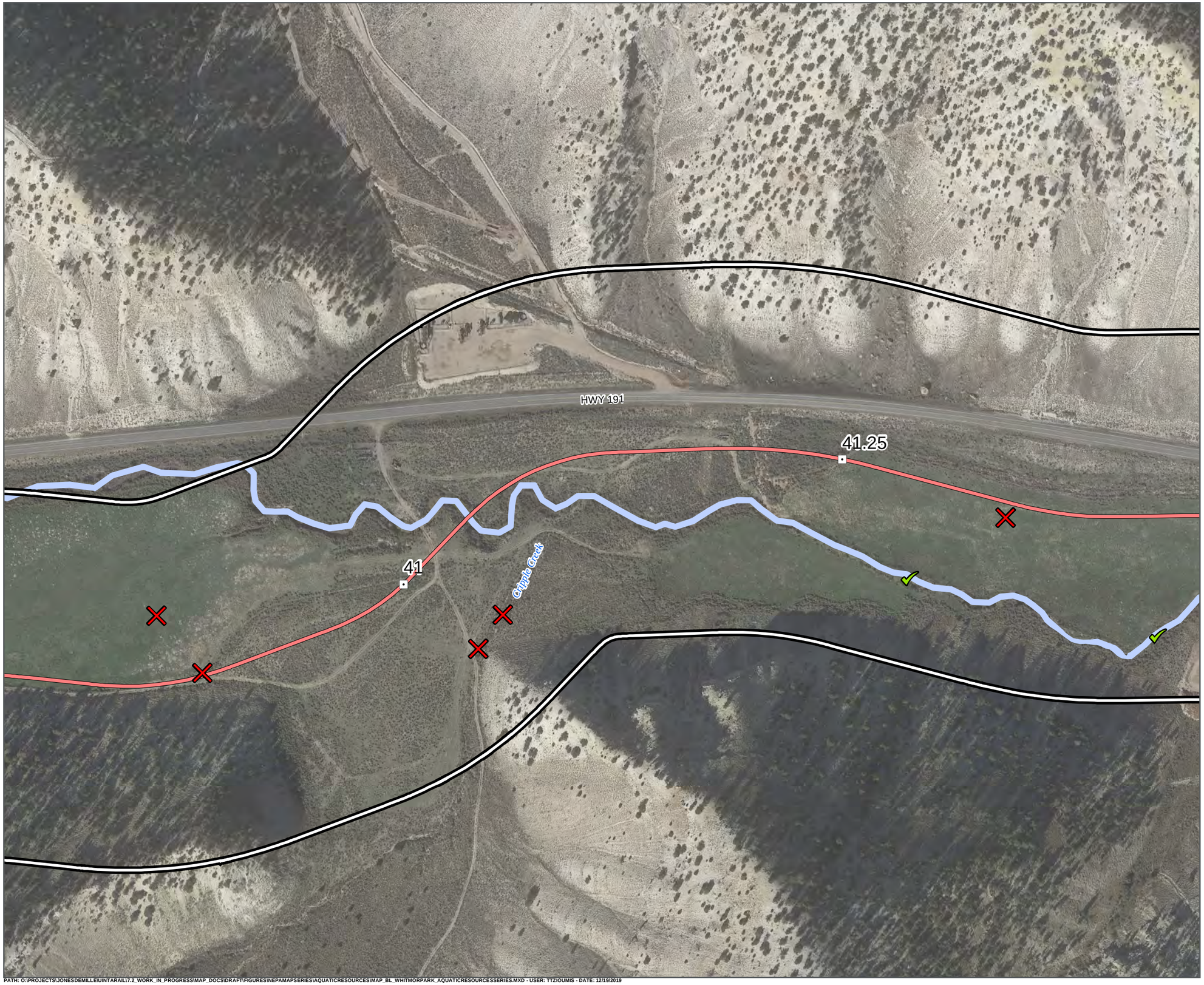
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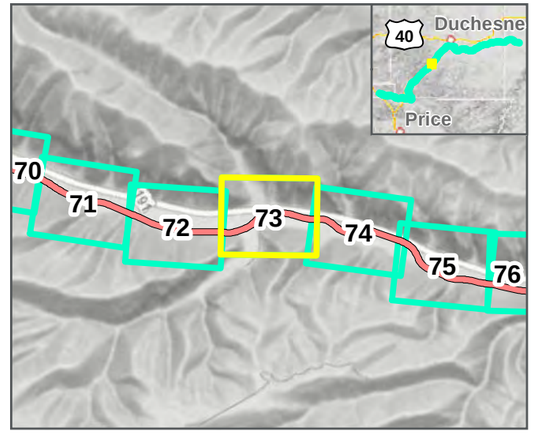
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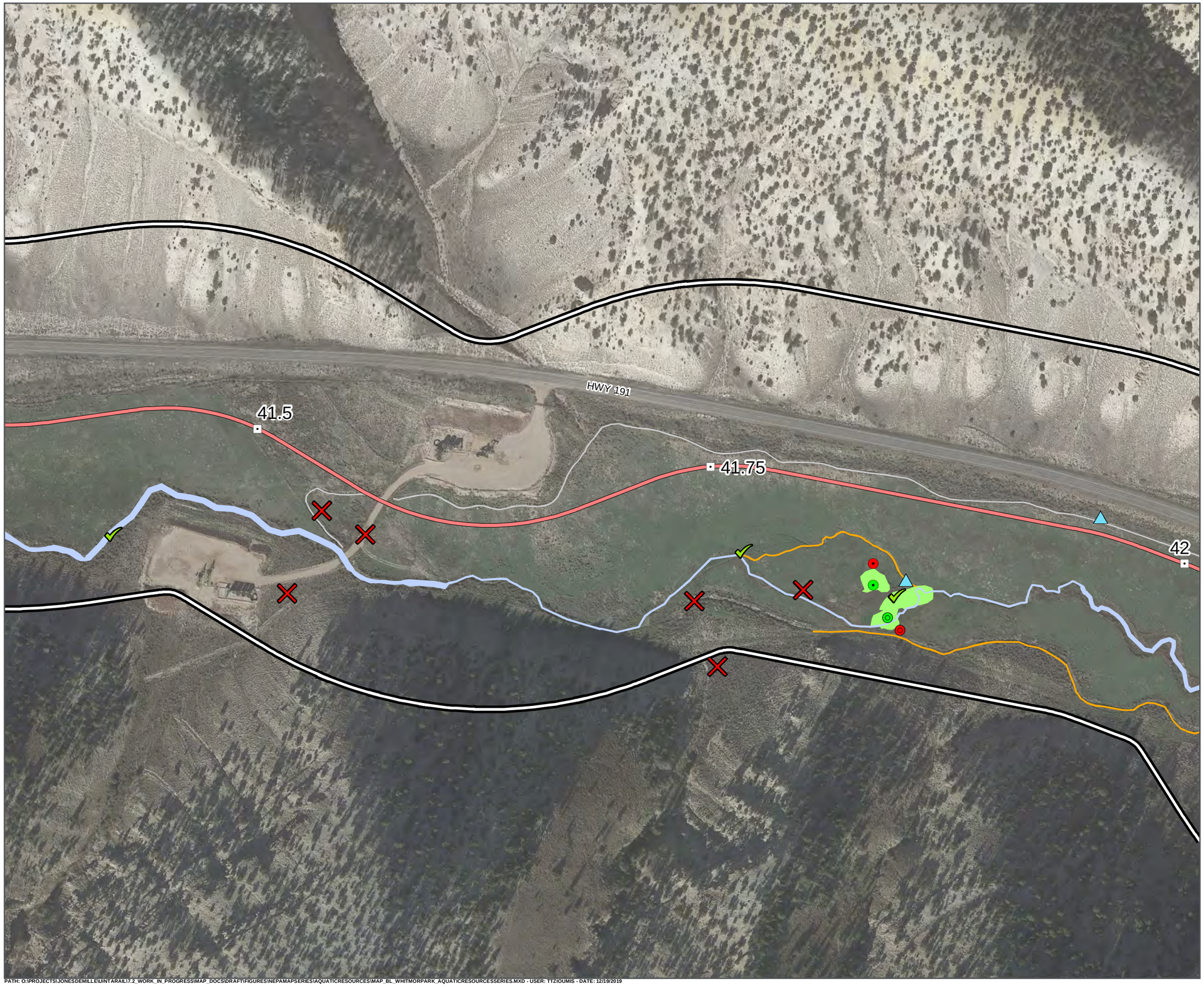
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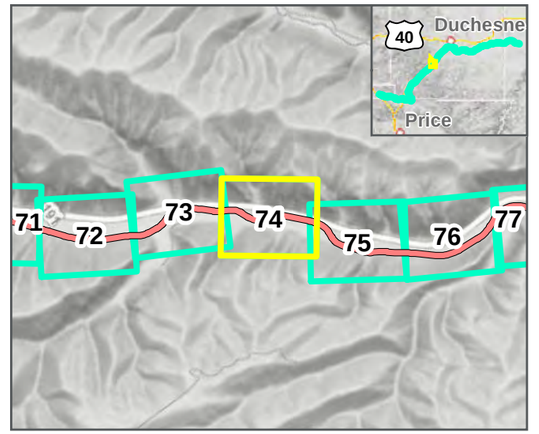
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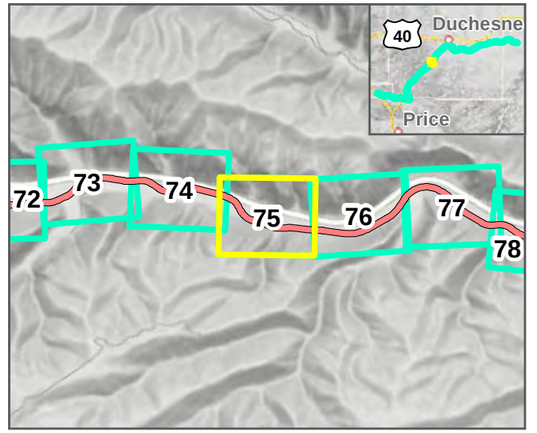
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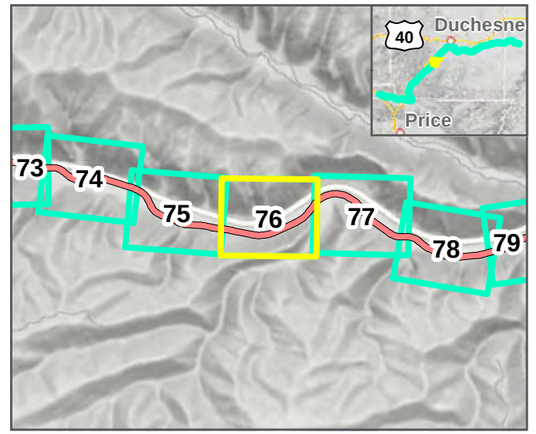
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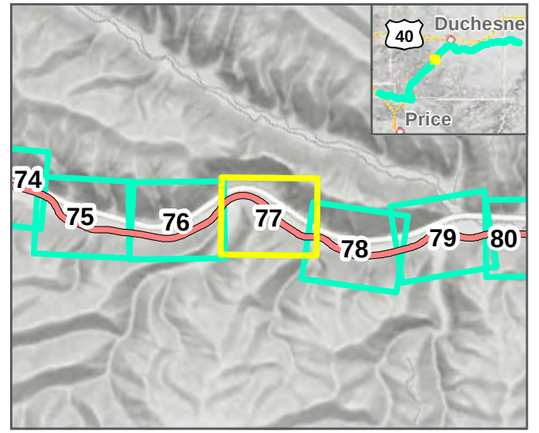
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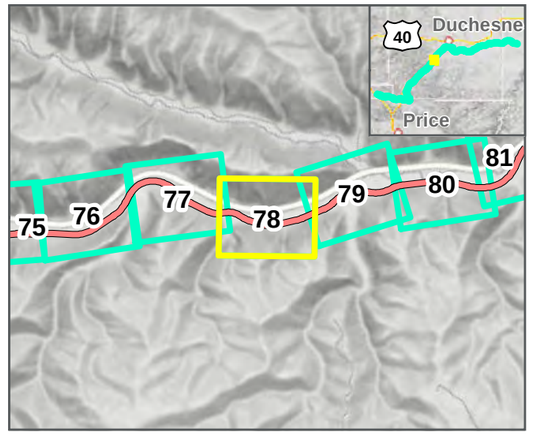
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PATH: O:\PROJECTS\JONESDEMILLE\UINTARAIL17.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\FIGURES\NEPAMAPSERIES\AQUATICRESOURCES\MAP_BL_WHITMORPARK_AQUATICRESOURCESSERIES.MXD - USER: TTZIOUMIS - DATE: 12/19/2019





- Mileposts
- Whitmore Park Centerline
- Areas Not Surveyed (Data Digitized)
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- Out Point 2019
- In Point 2014
- Out Point 2014
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- Emergent Marsh
- Shrub-Scrub
- Playa
- Open Water
- Perennial Stream
- Ephemeral/Intermittent Stream
- Ditch/Canal
- Study Area
- Map Extent (current view in yellow)

WHITMORE PARK ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

0 125 250 Feet

1 inch = 250 Feet

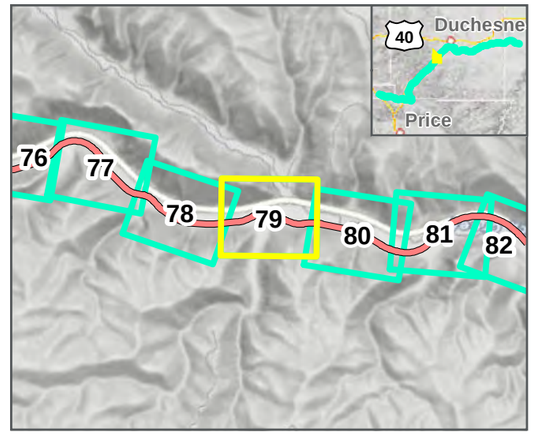
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

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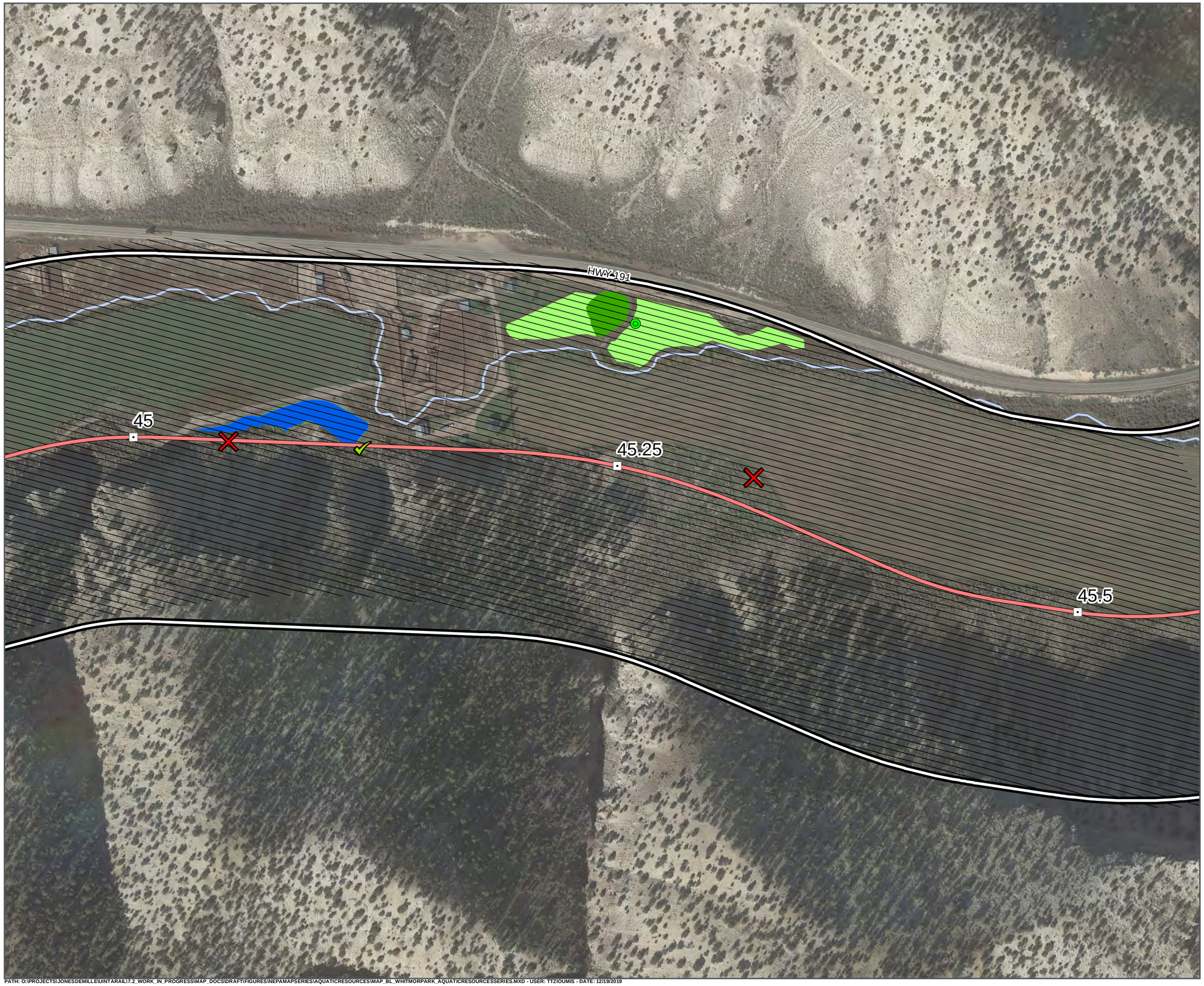
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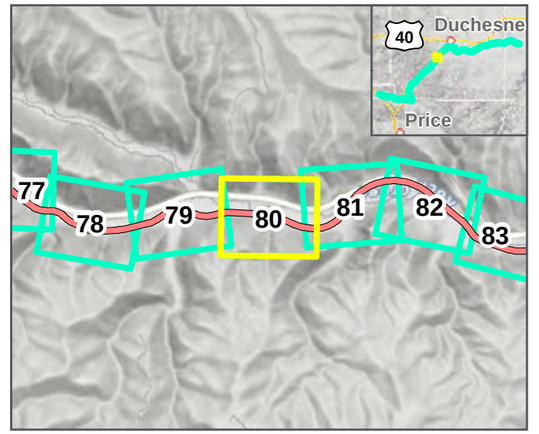
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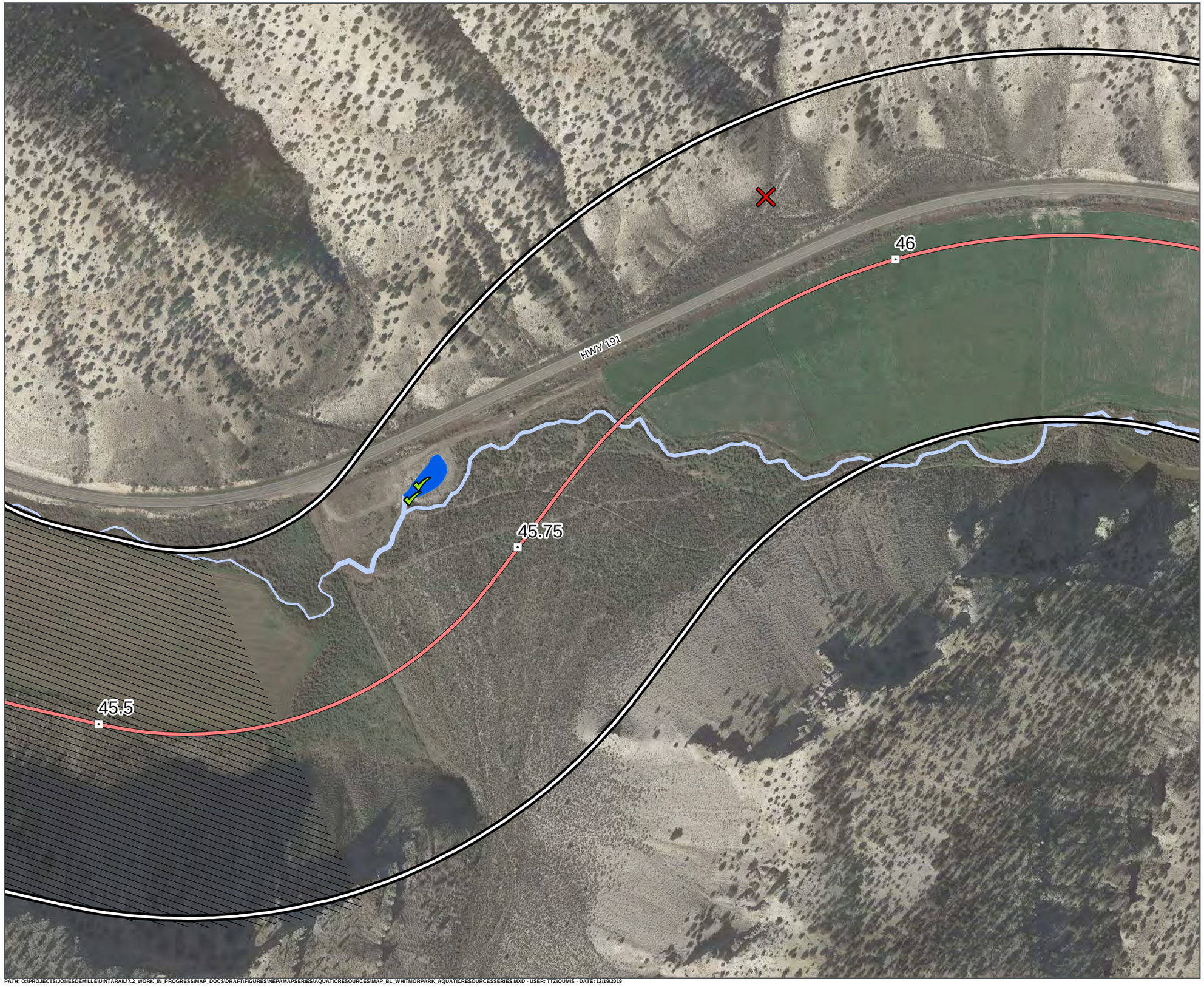
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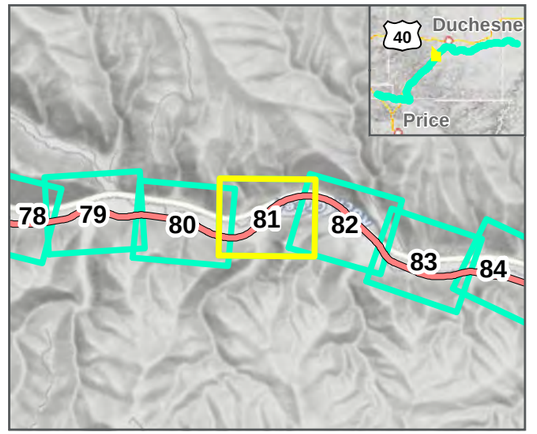
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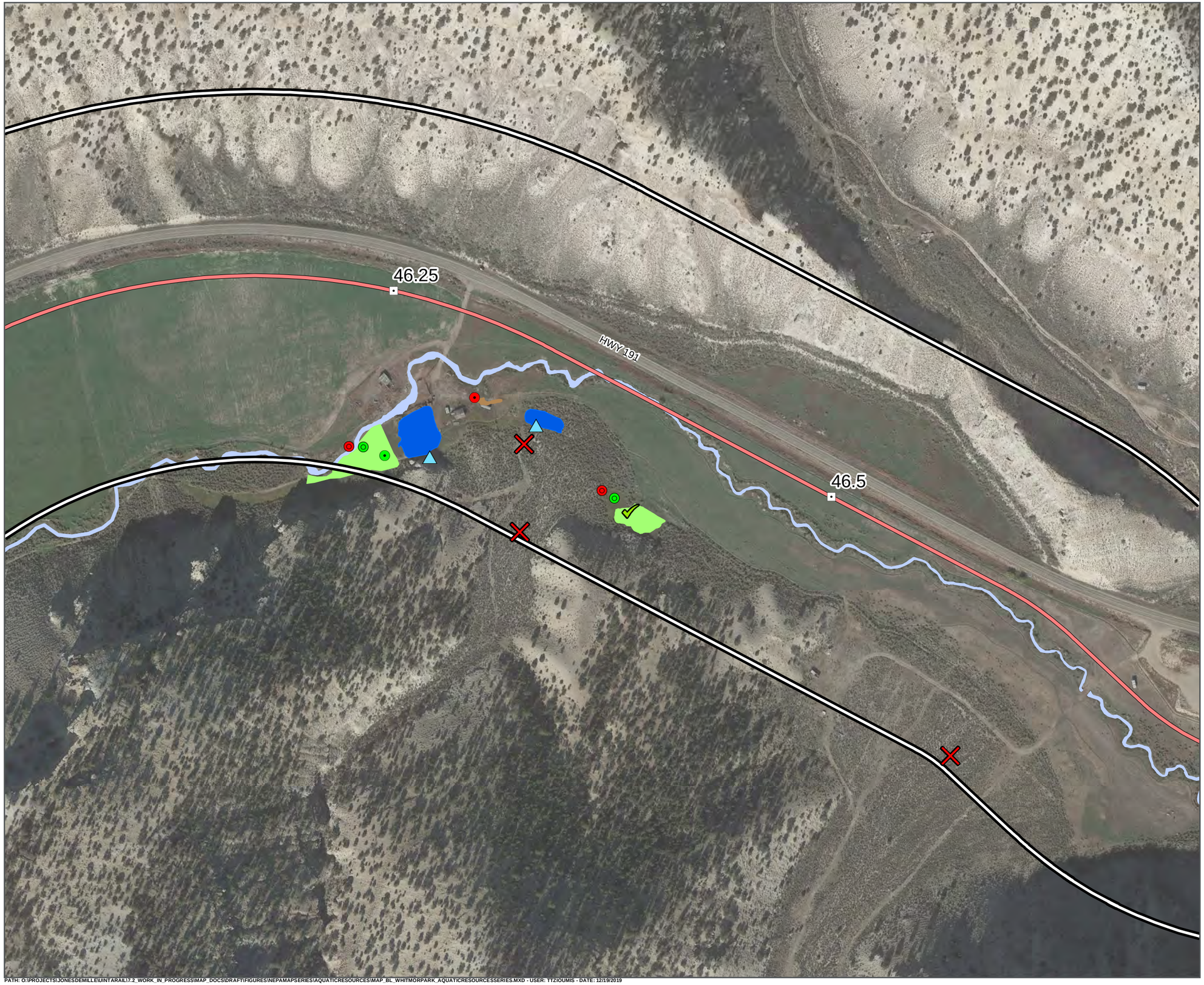
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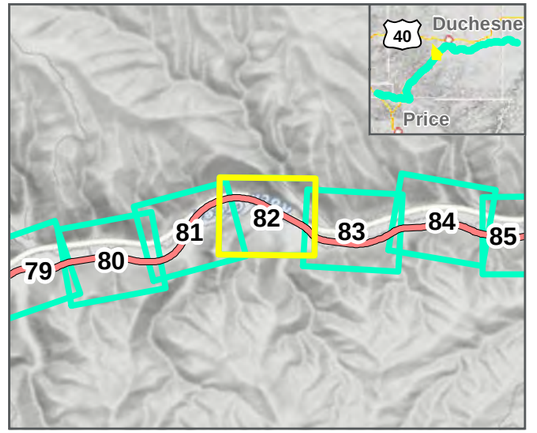
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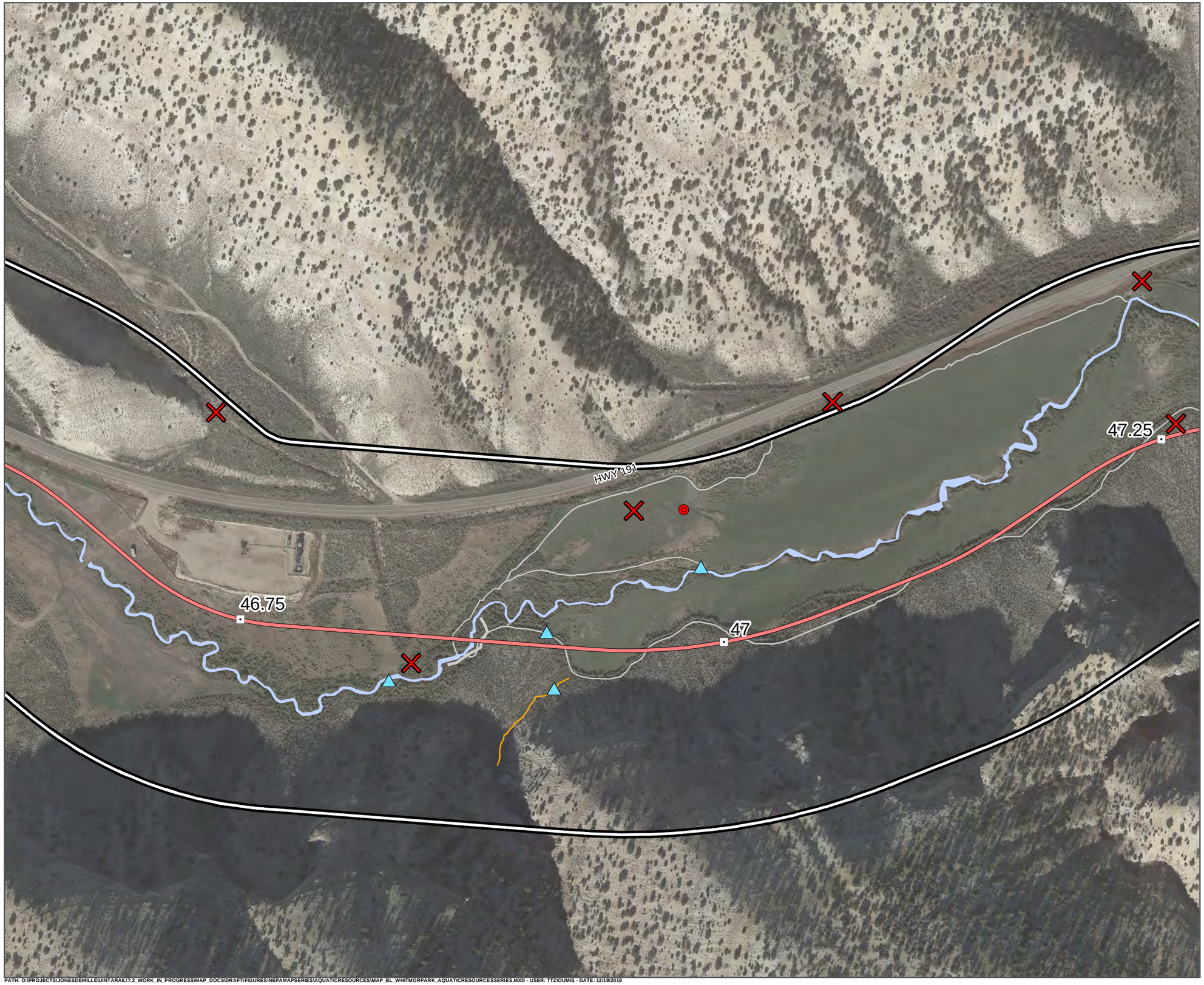
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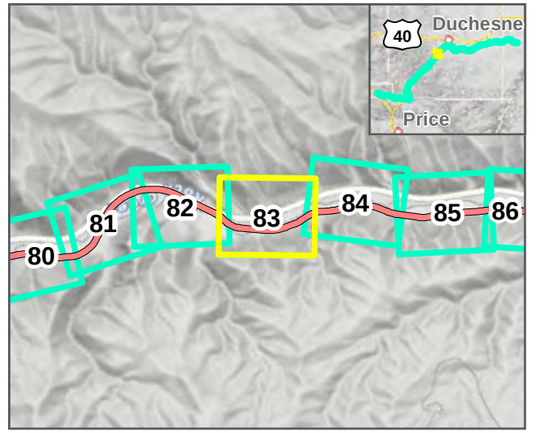
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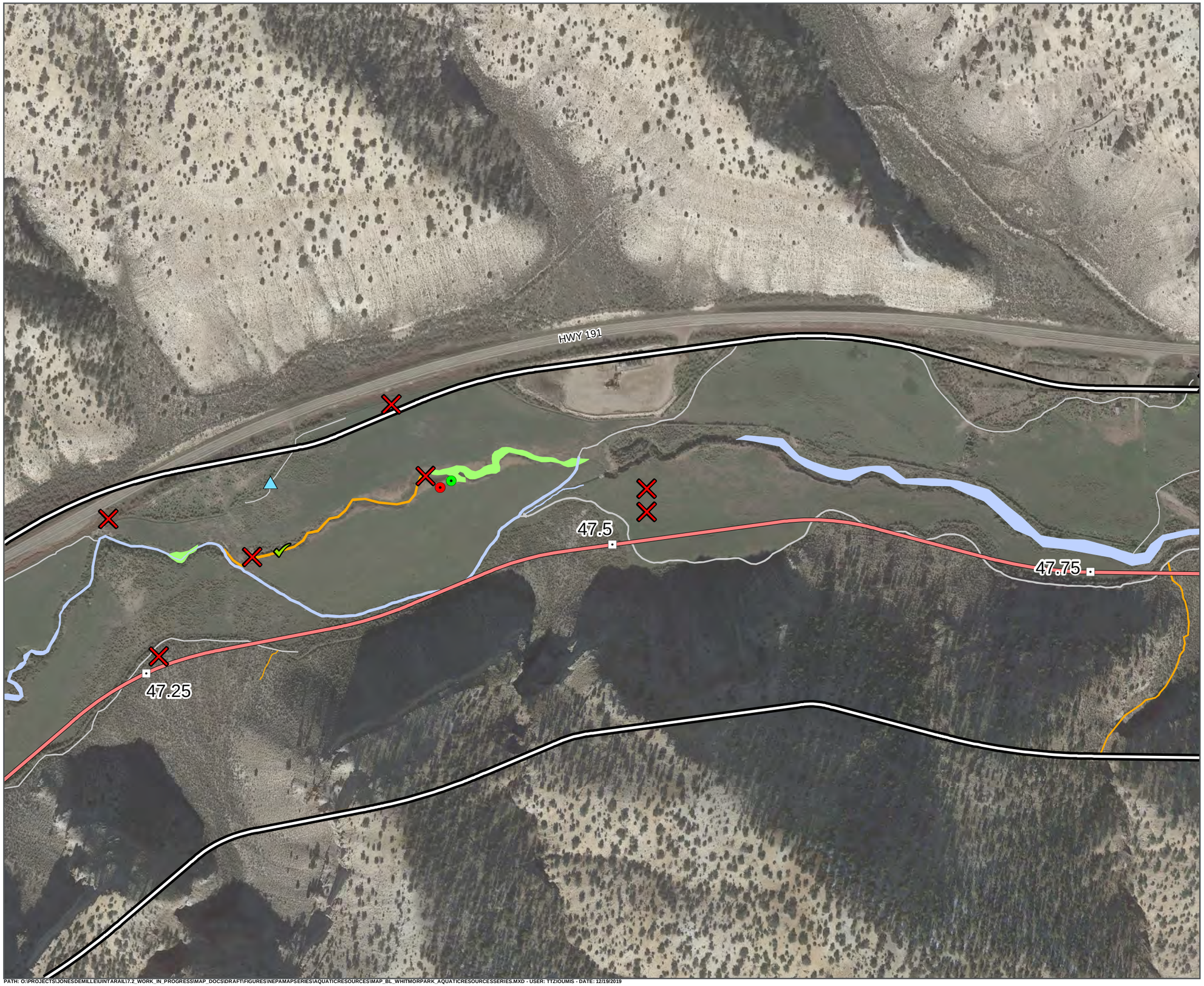
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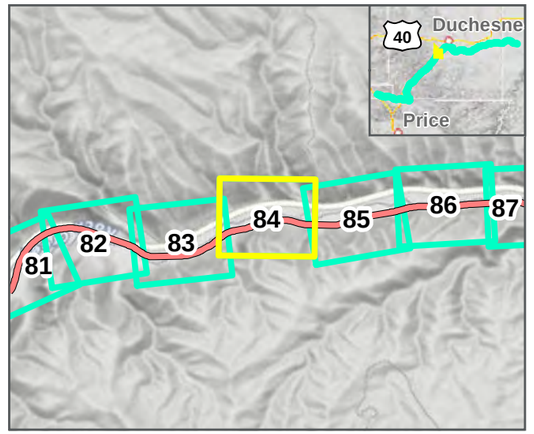
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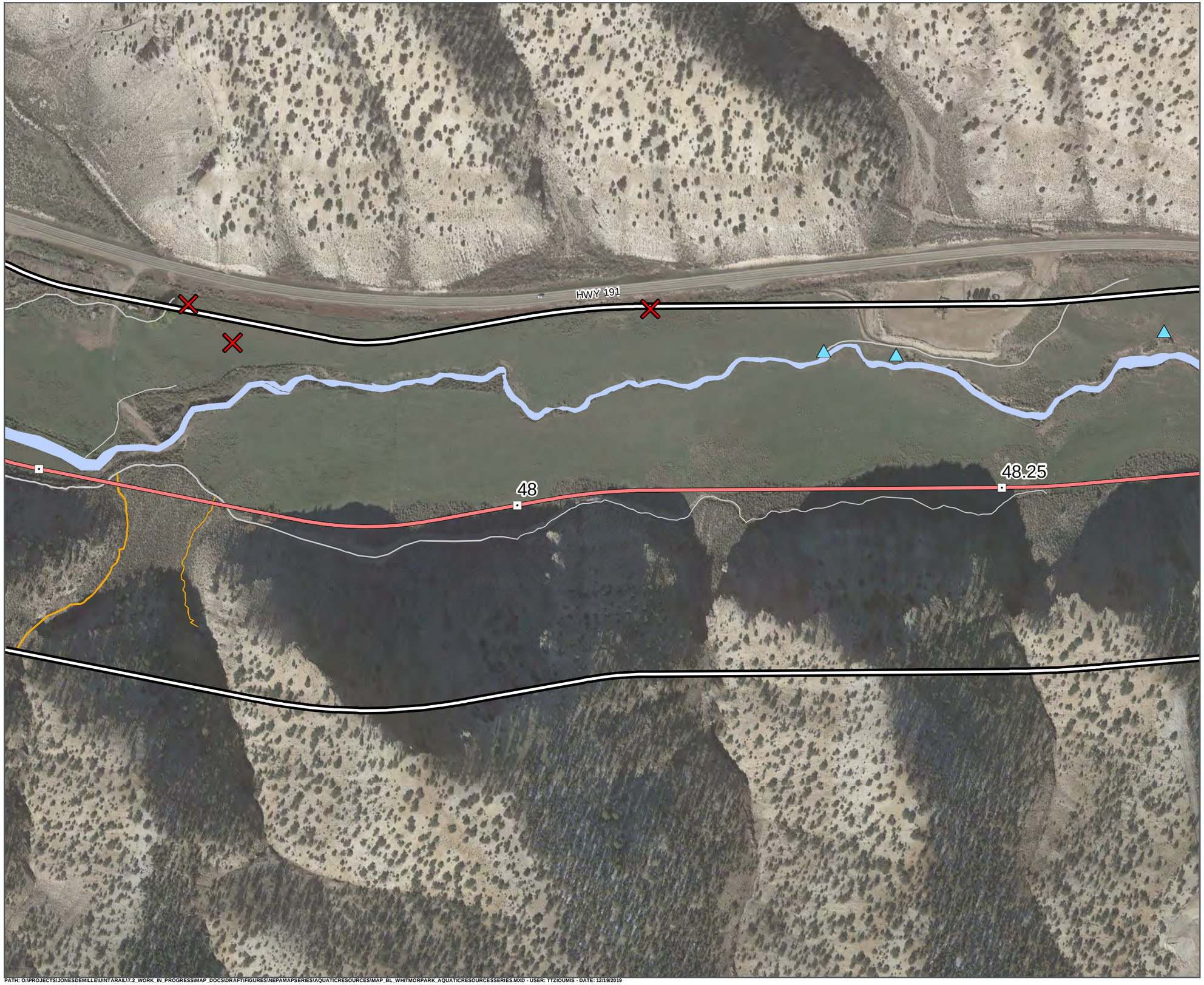
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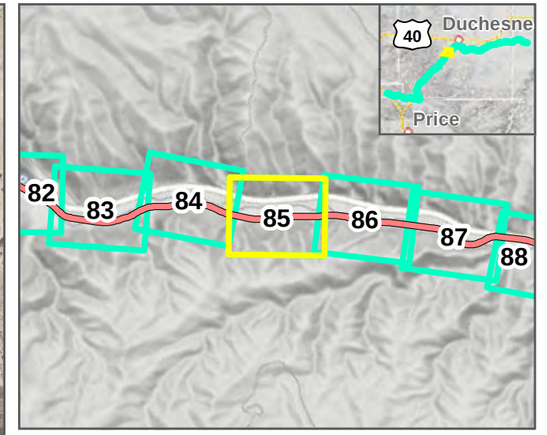
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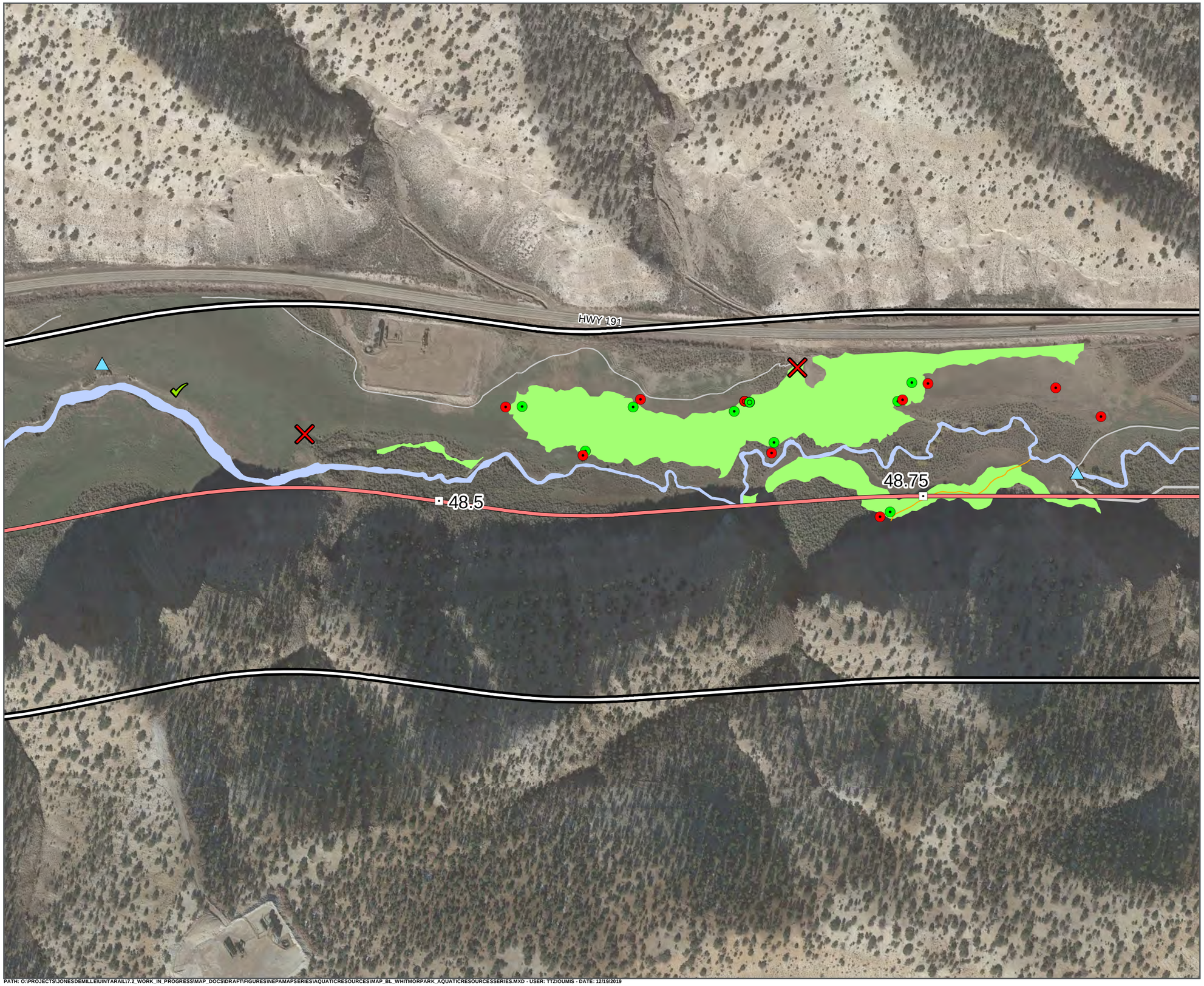
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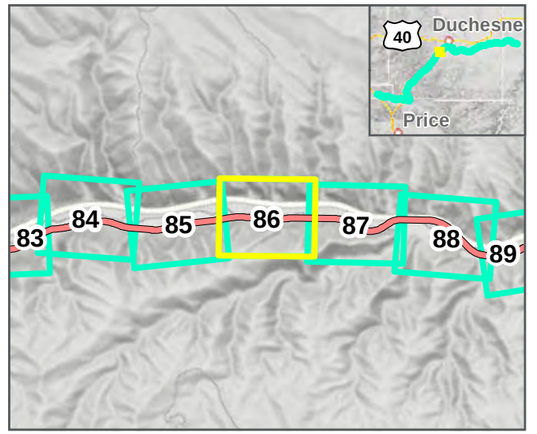
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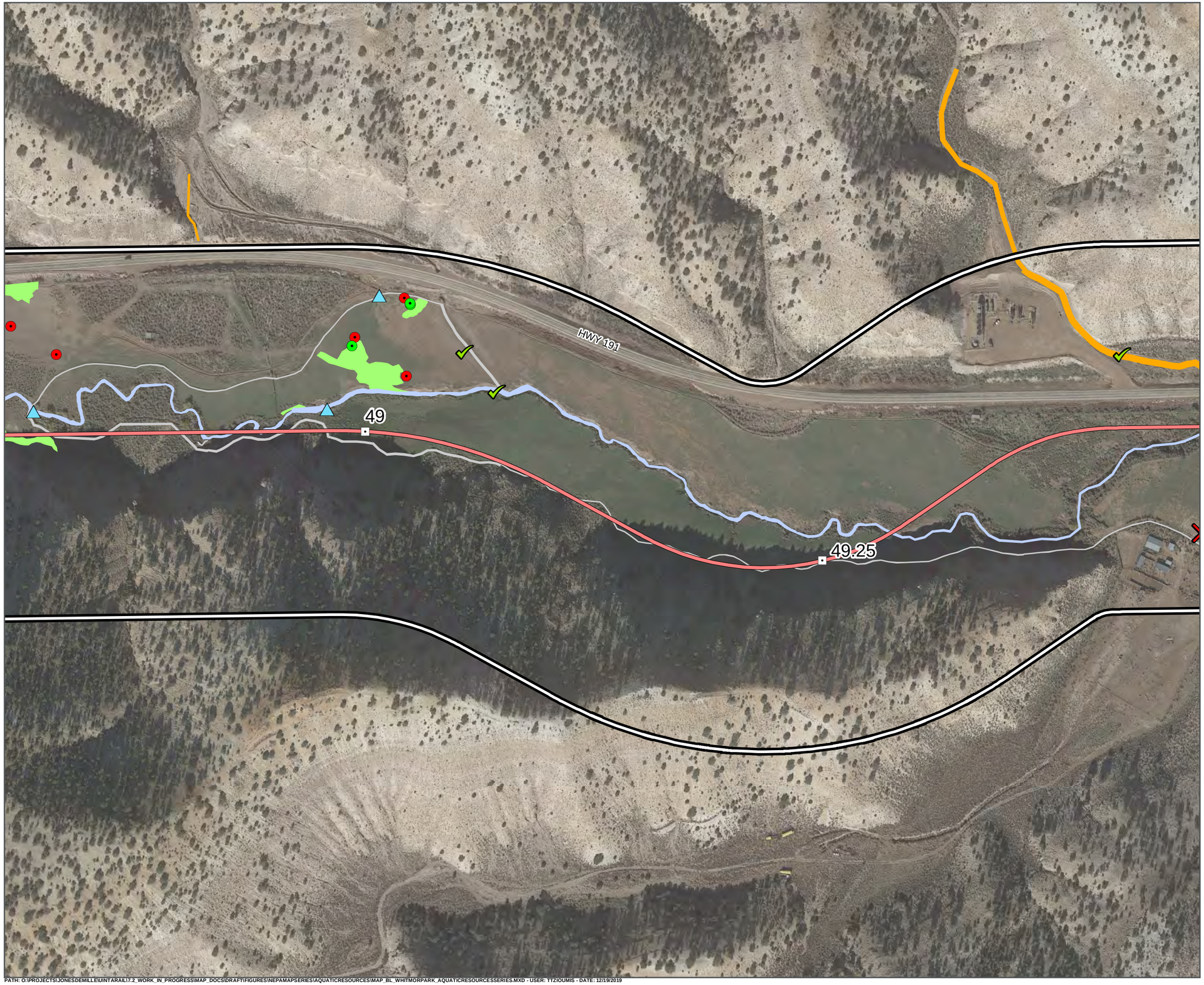
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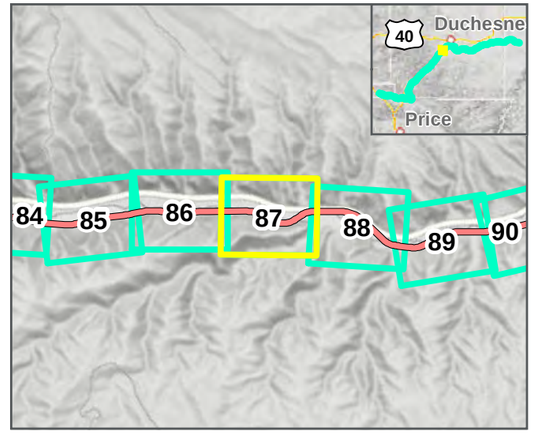
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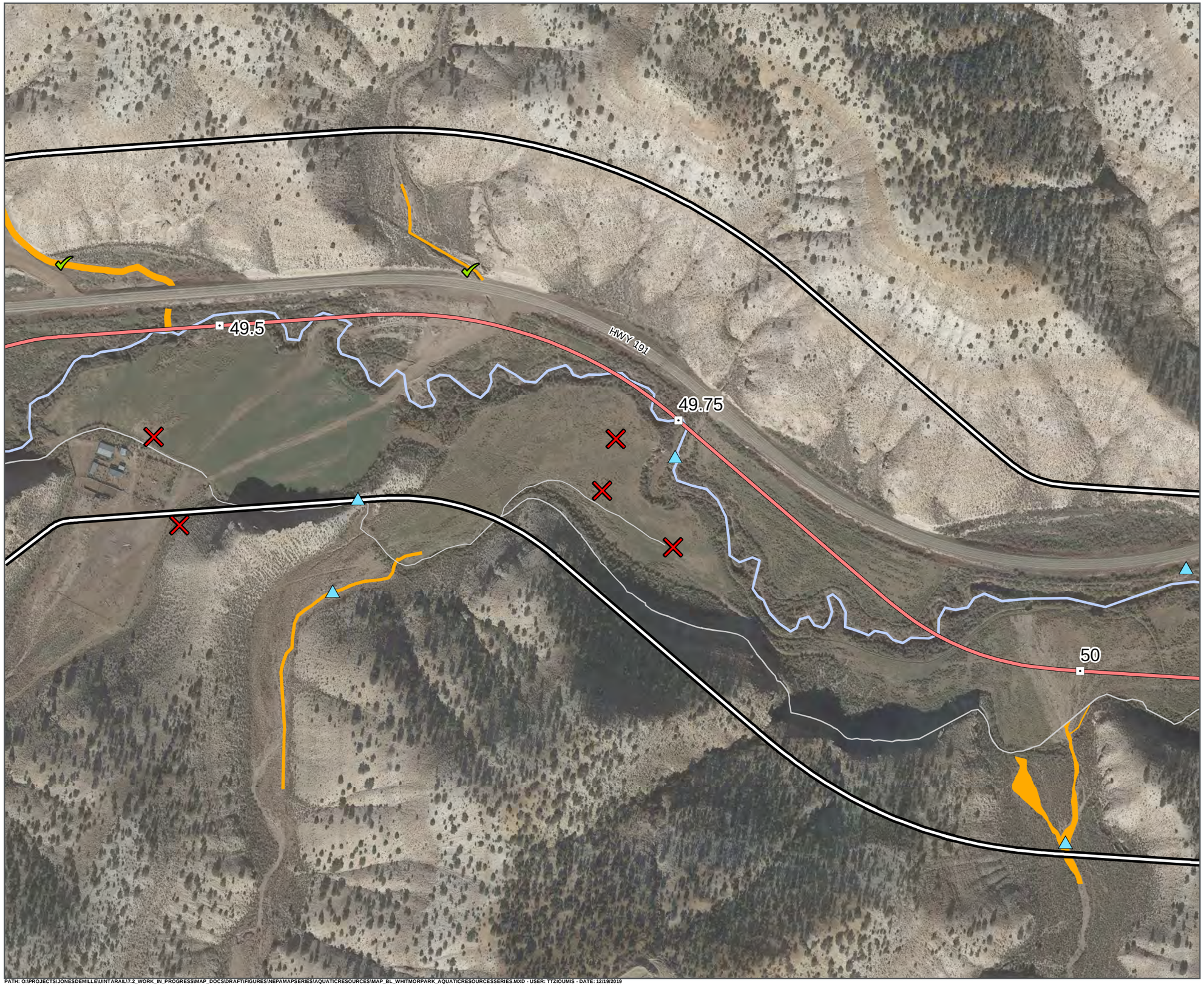
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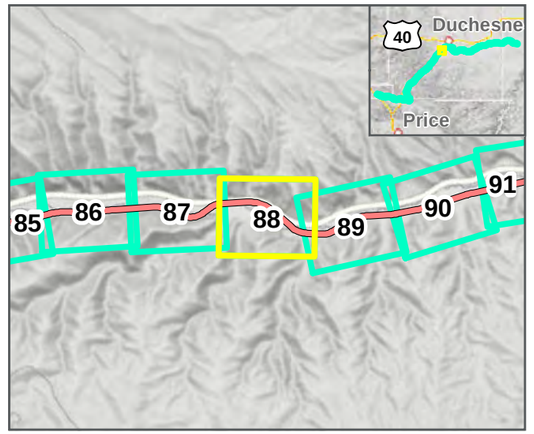
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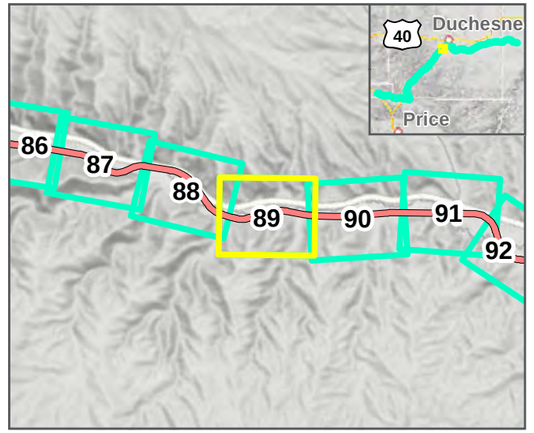
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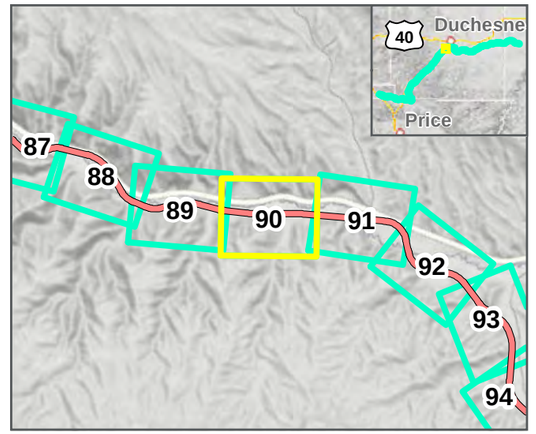
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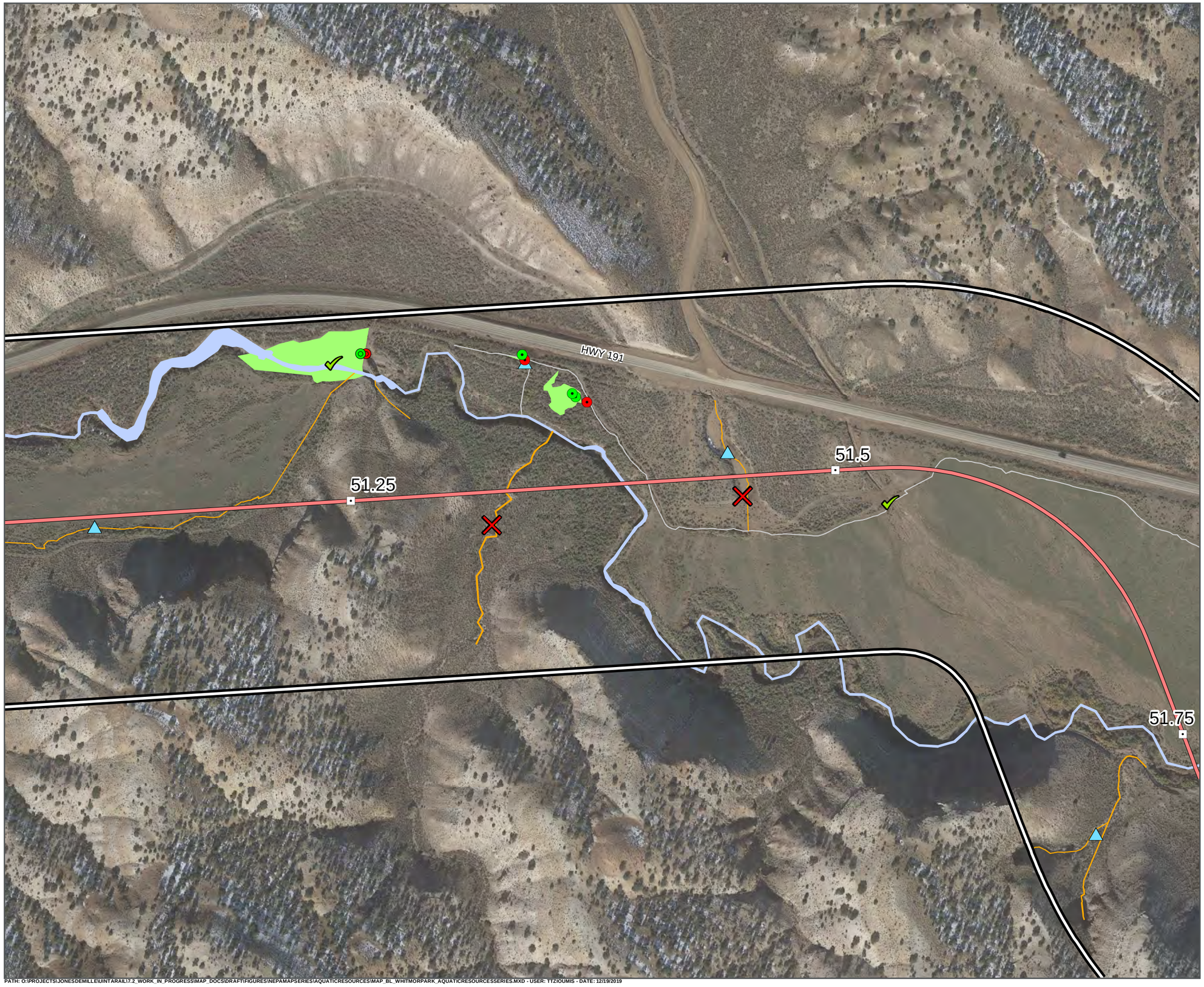
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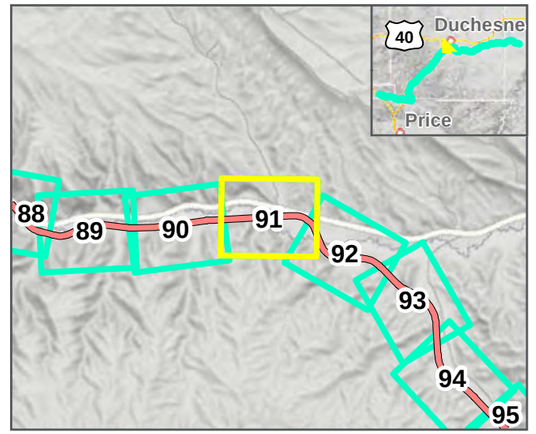
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DECEMBER 2019

0 125 250 Feet

1 inch = 250 Feet

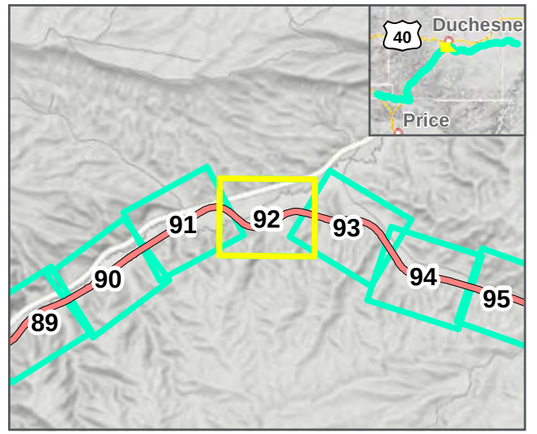
DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery
Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

PATH: O:\PROJECTS\JONESDEMILLE\UINTARAIL\7-2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\FIGURES\NEPAMAPSERIES\AQUATICRESOURCES\MAP_BL_WHITMORPARK_AQUATICRESOURCESSERIES.MXD - USER: TTZIOUMIS - DATE: 12/19/2019





- Mileposts
- Whitmore Park Centerline
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- Shrub-Scrub
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- Perennial Stream
- Ephemeral/Intermittent Stream
- Ditch/Canal
- Study Area
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WHITMORE PARK ALTERNATIVE: 11/22/2019

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DECEMBER 2019

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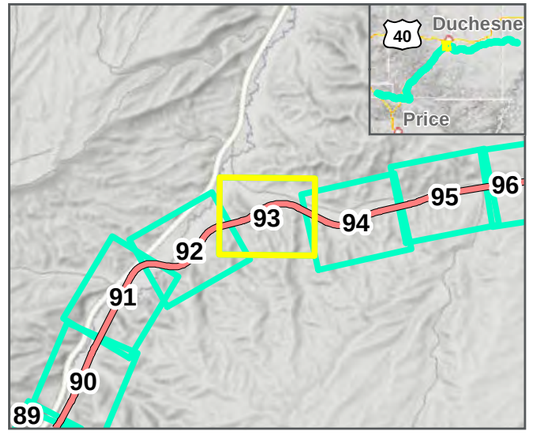
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DECEMBER 2019

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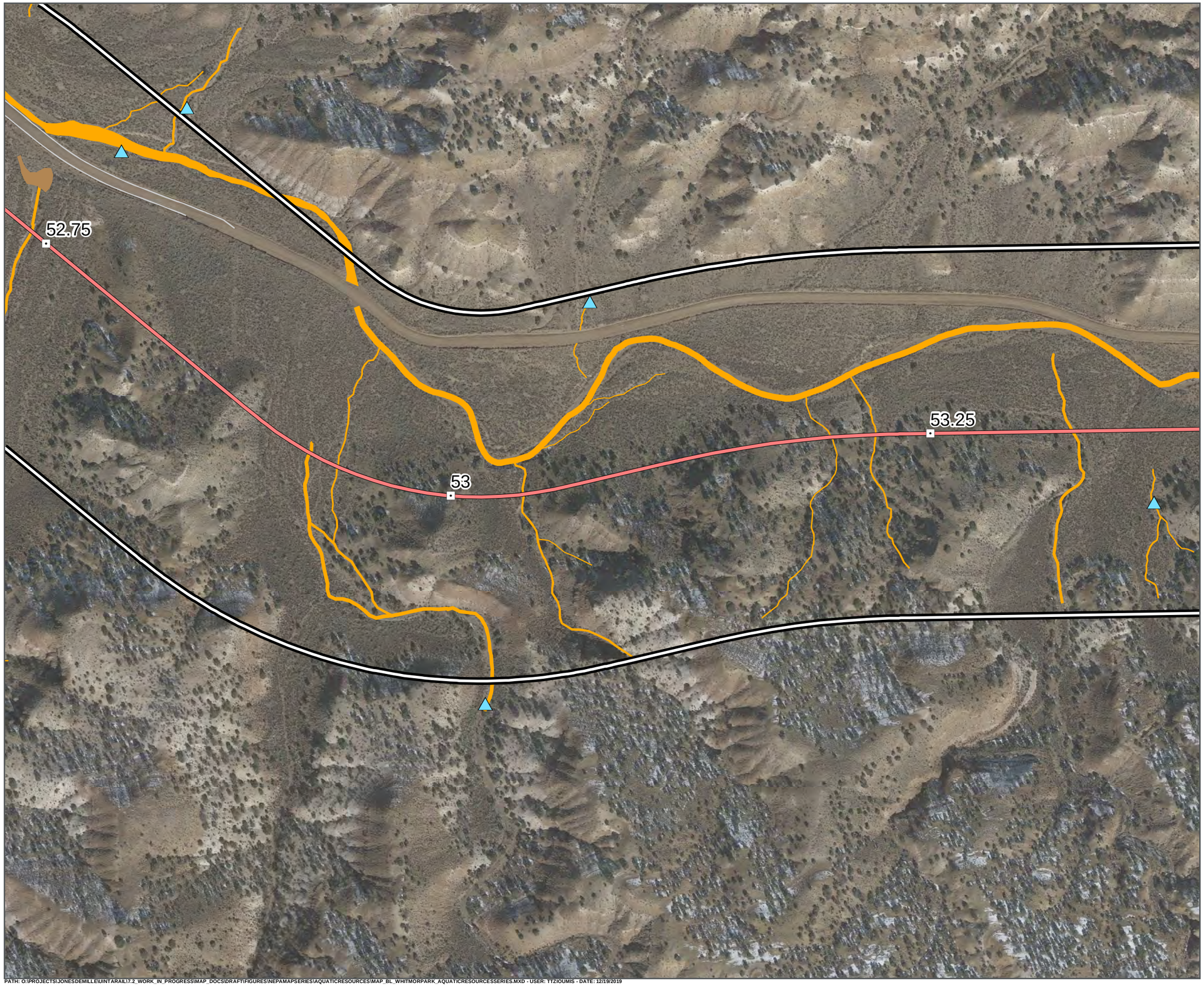
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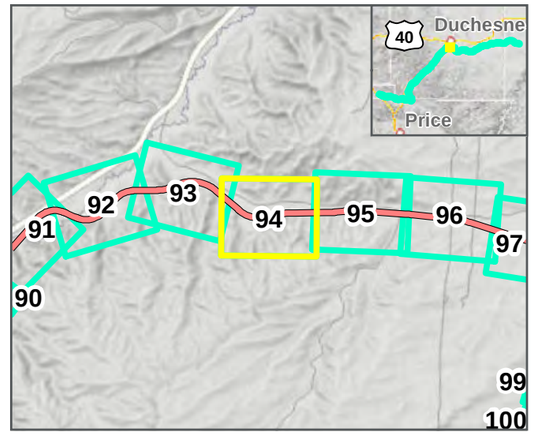
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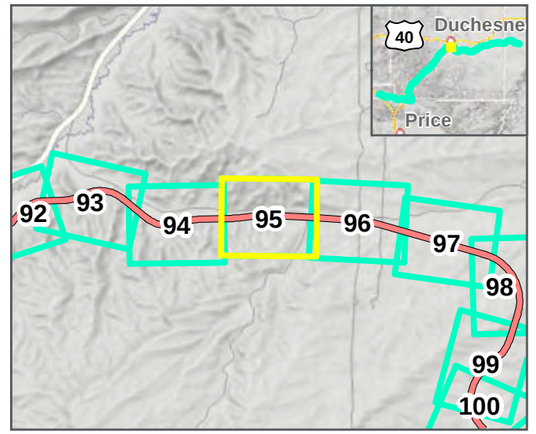
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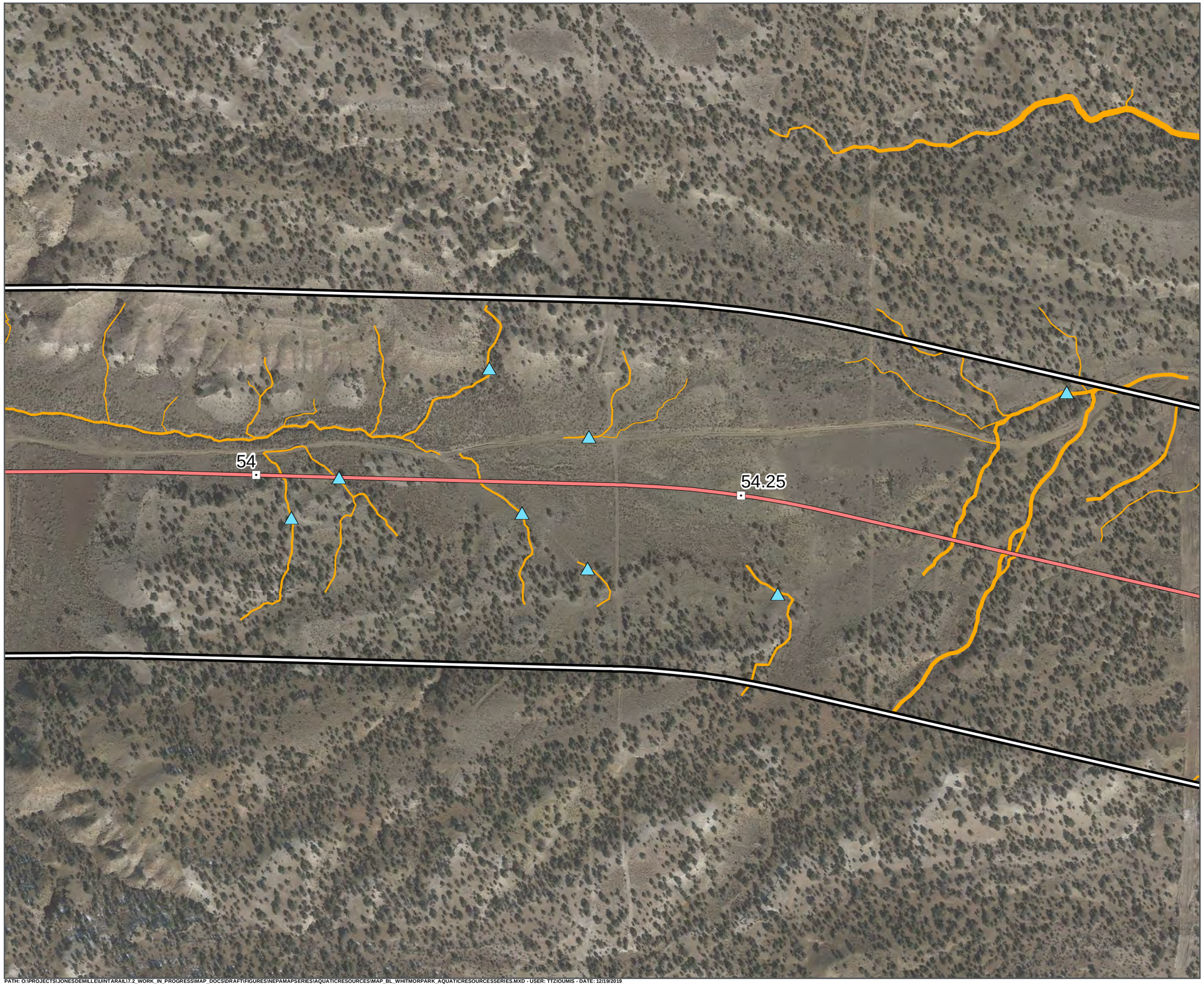
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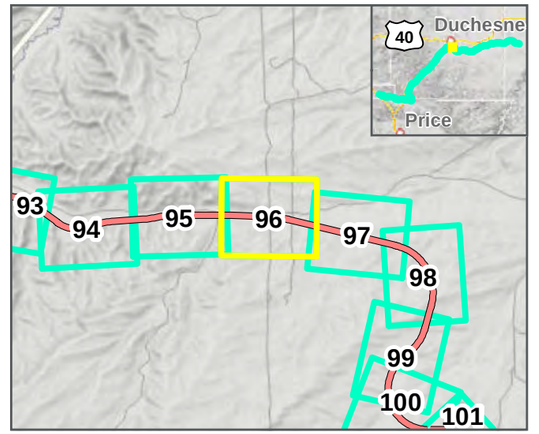
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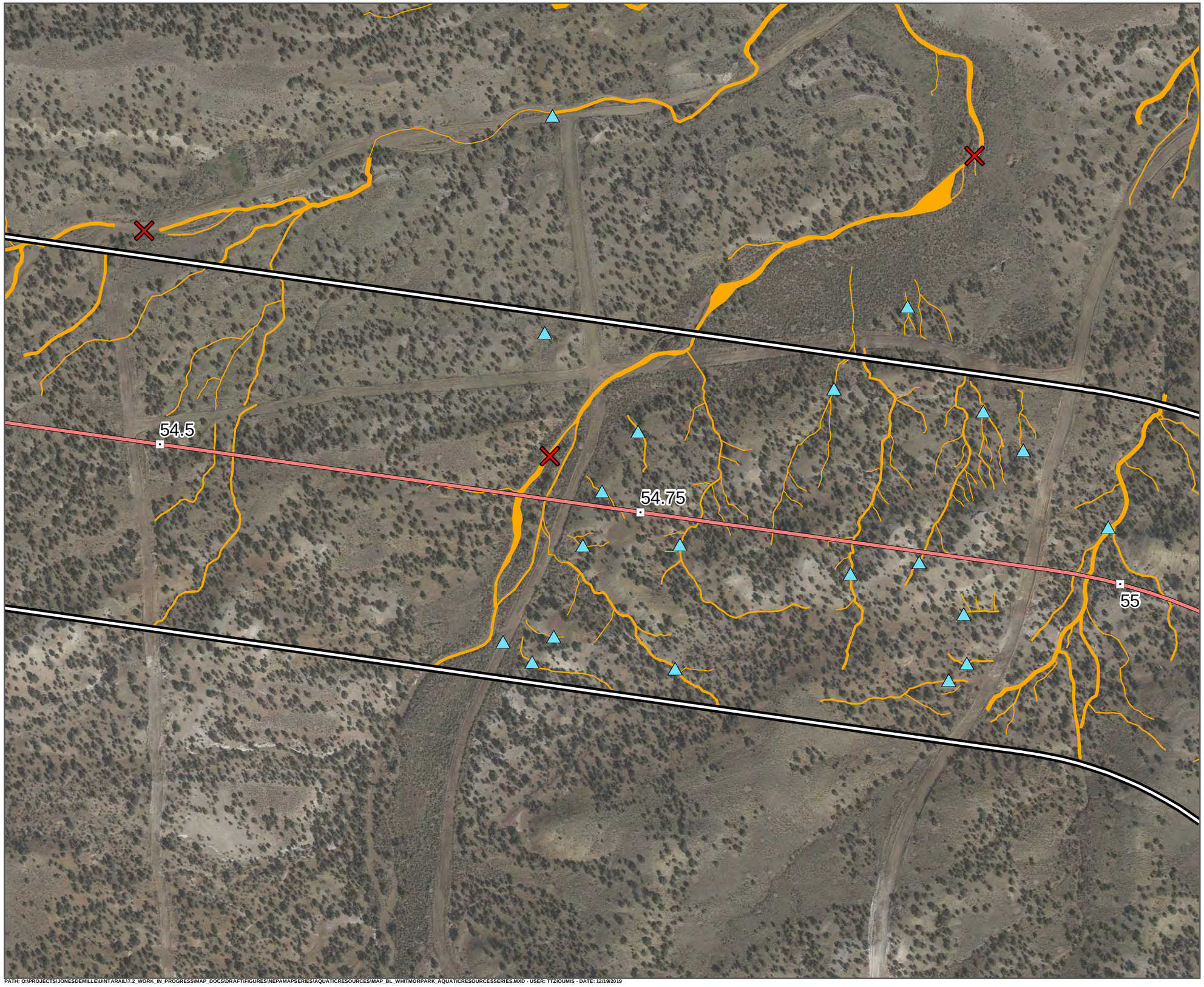
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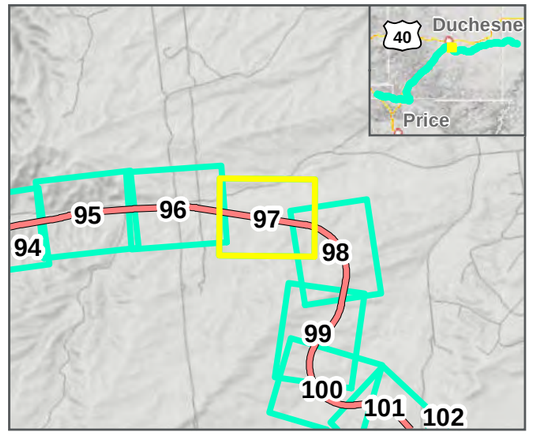
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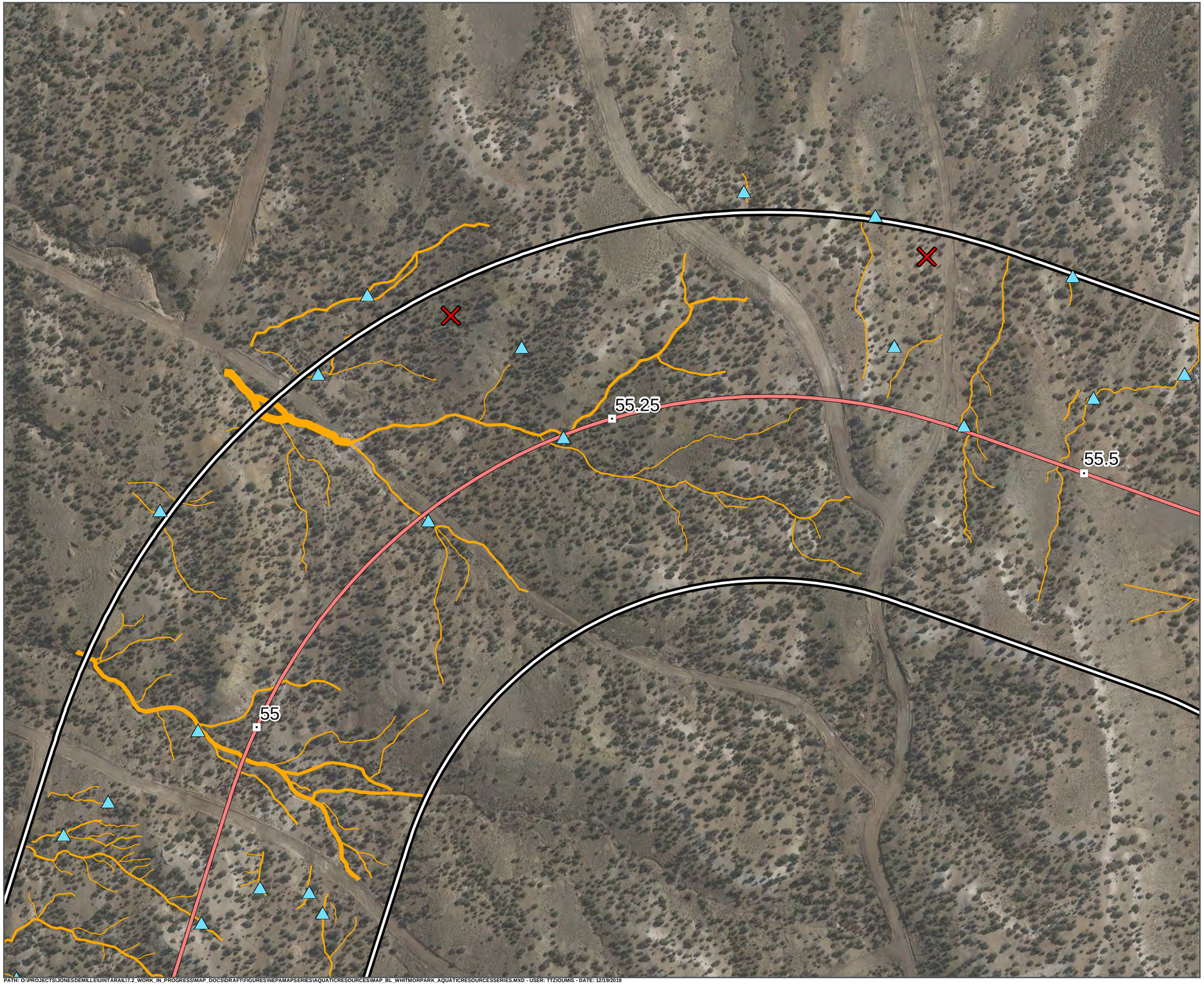
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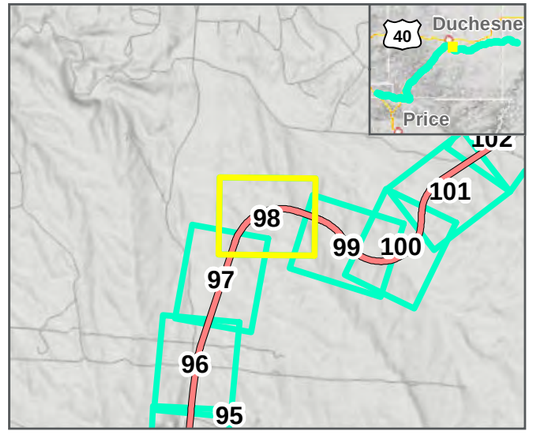
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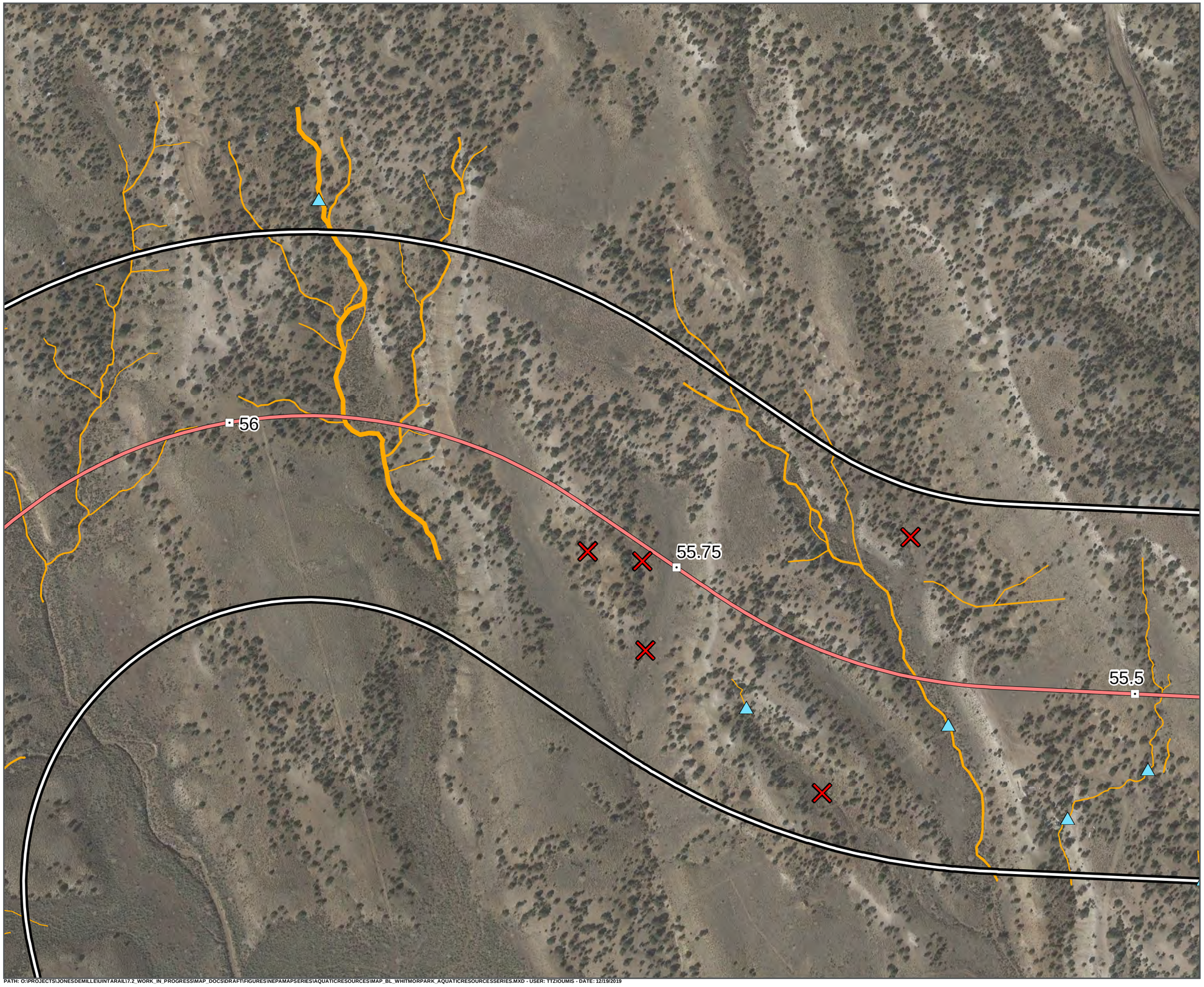
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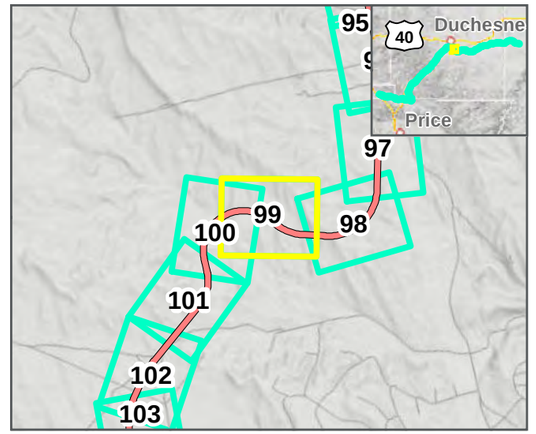
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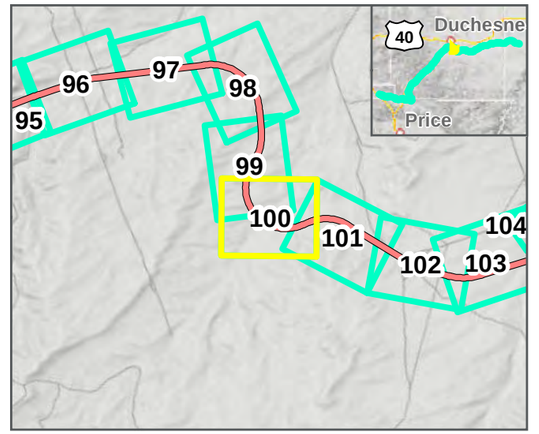
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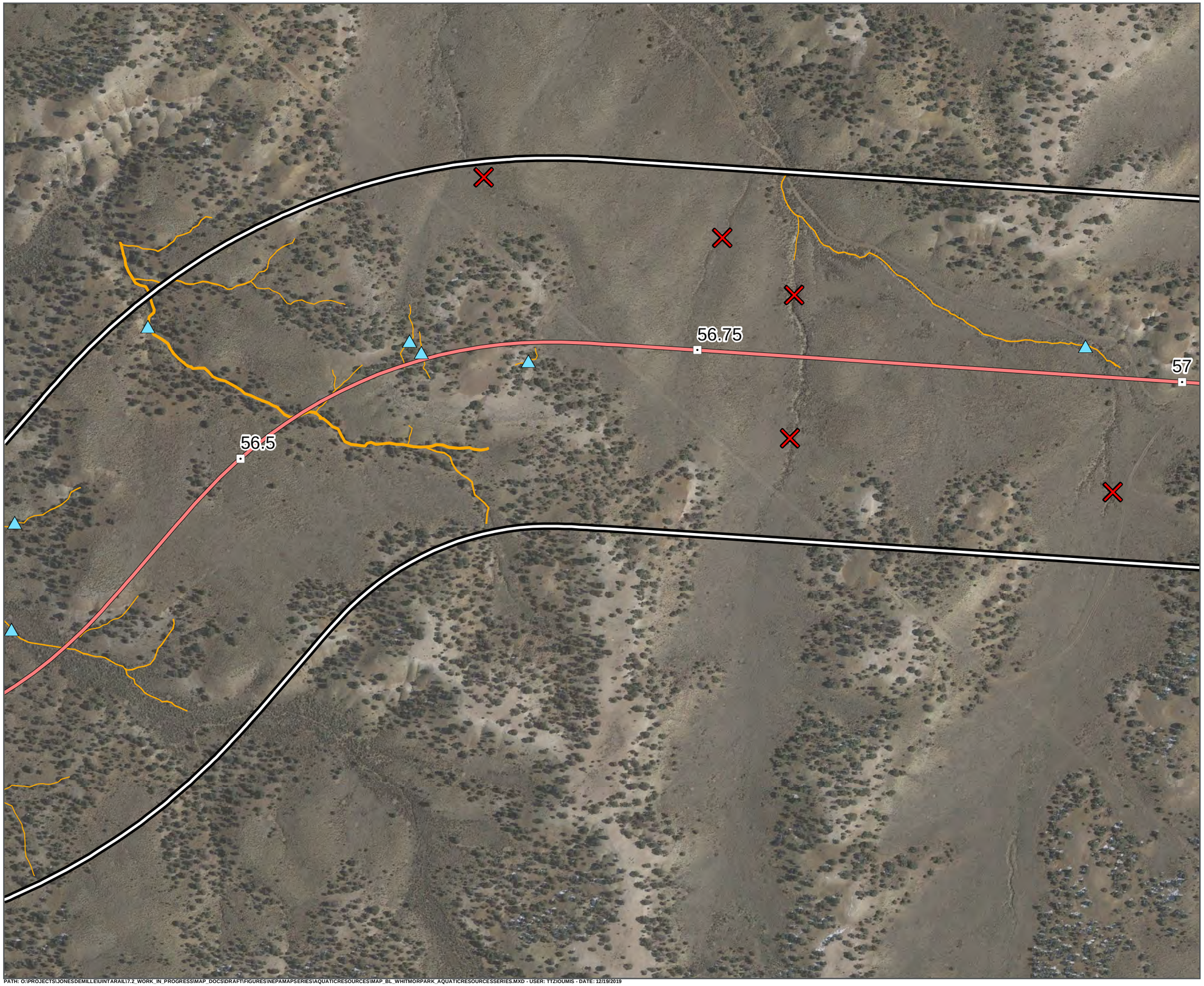
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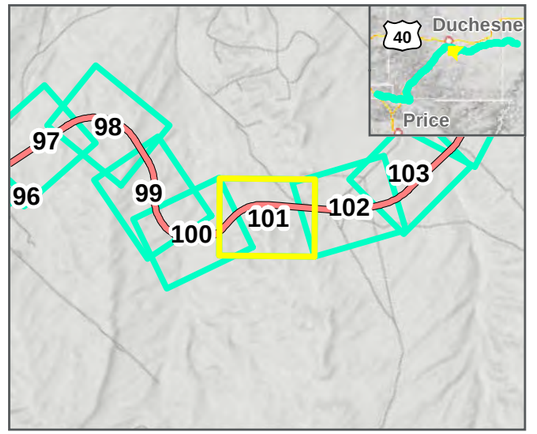
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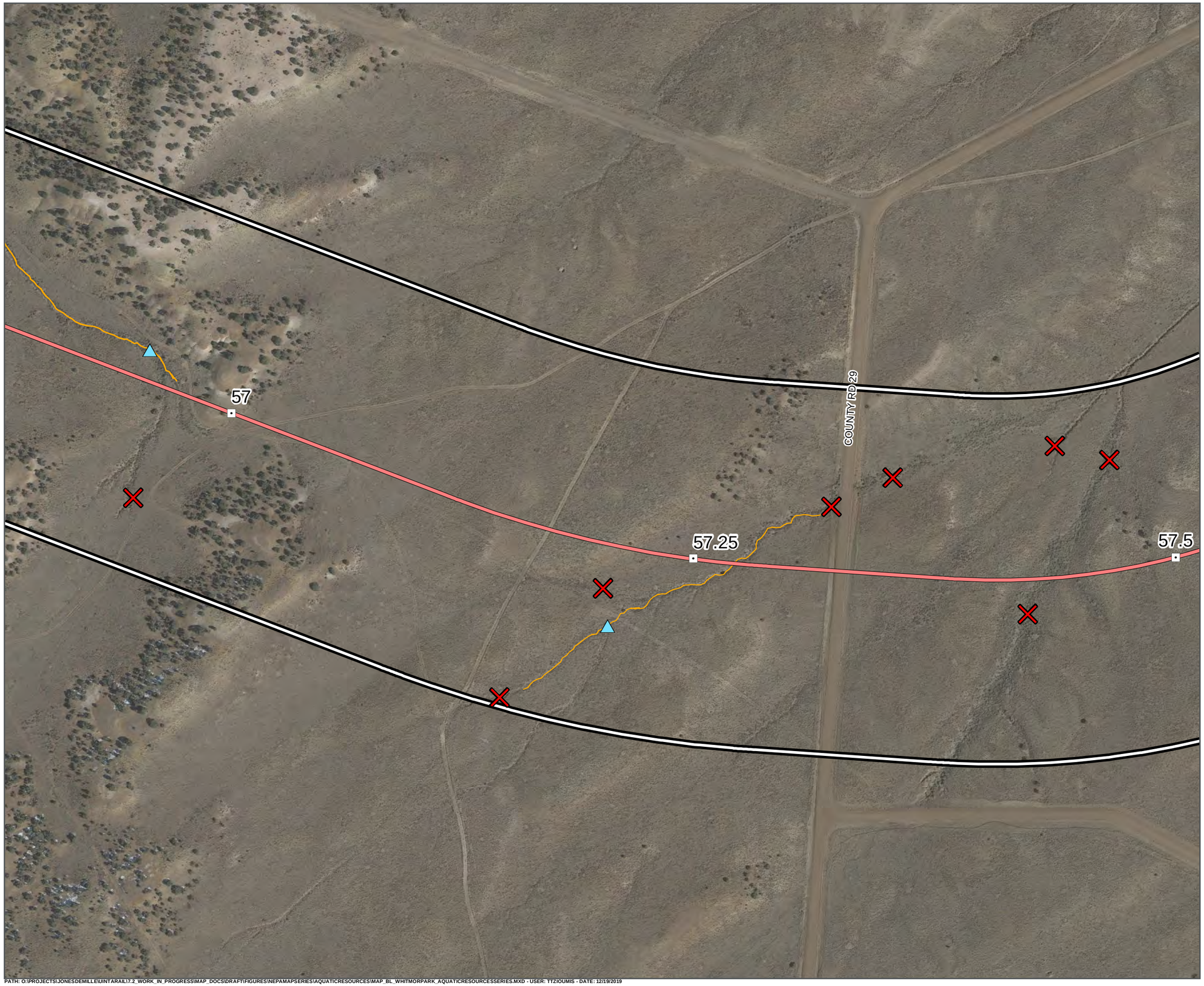
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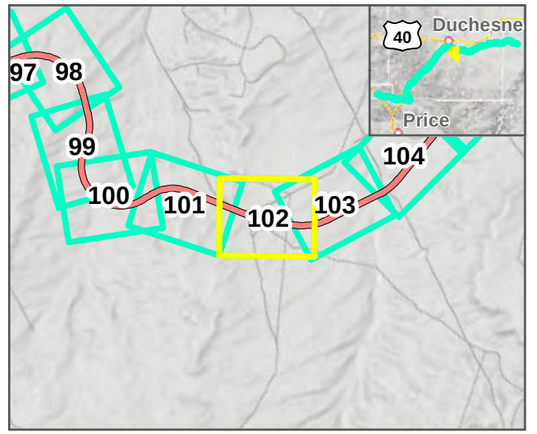
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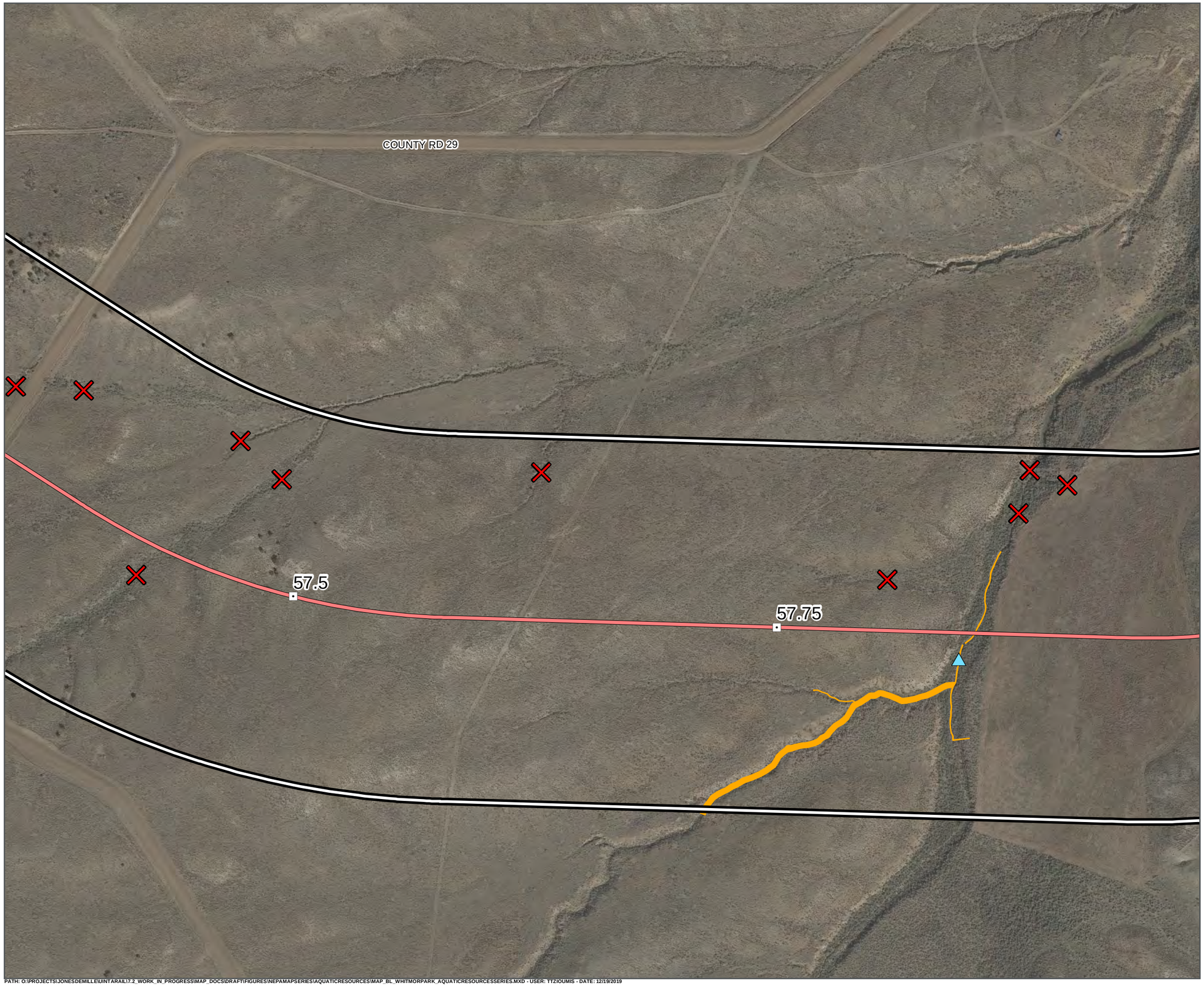
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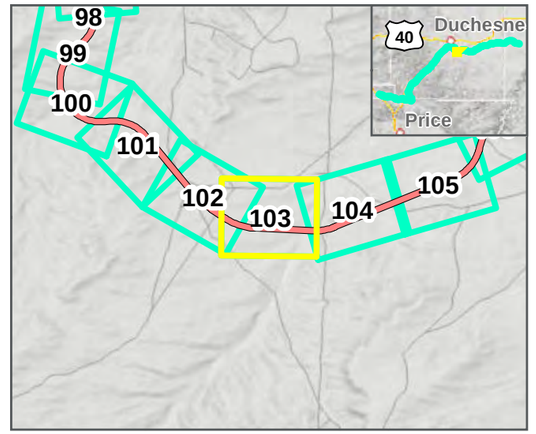
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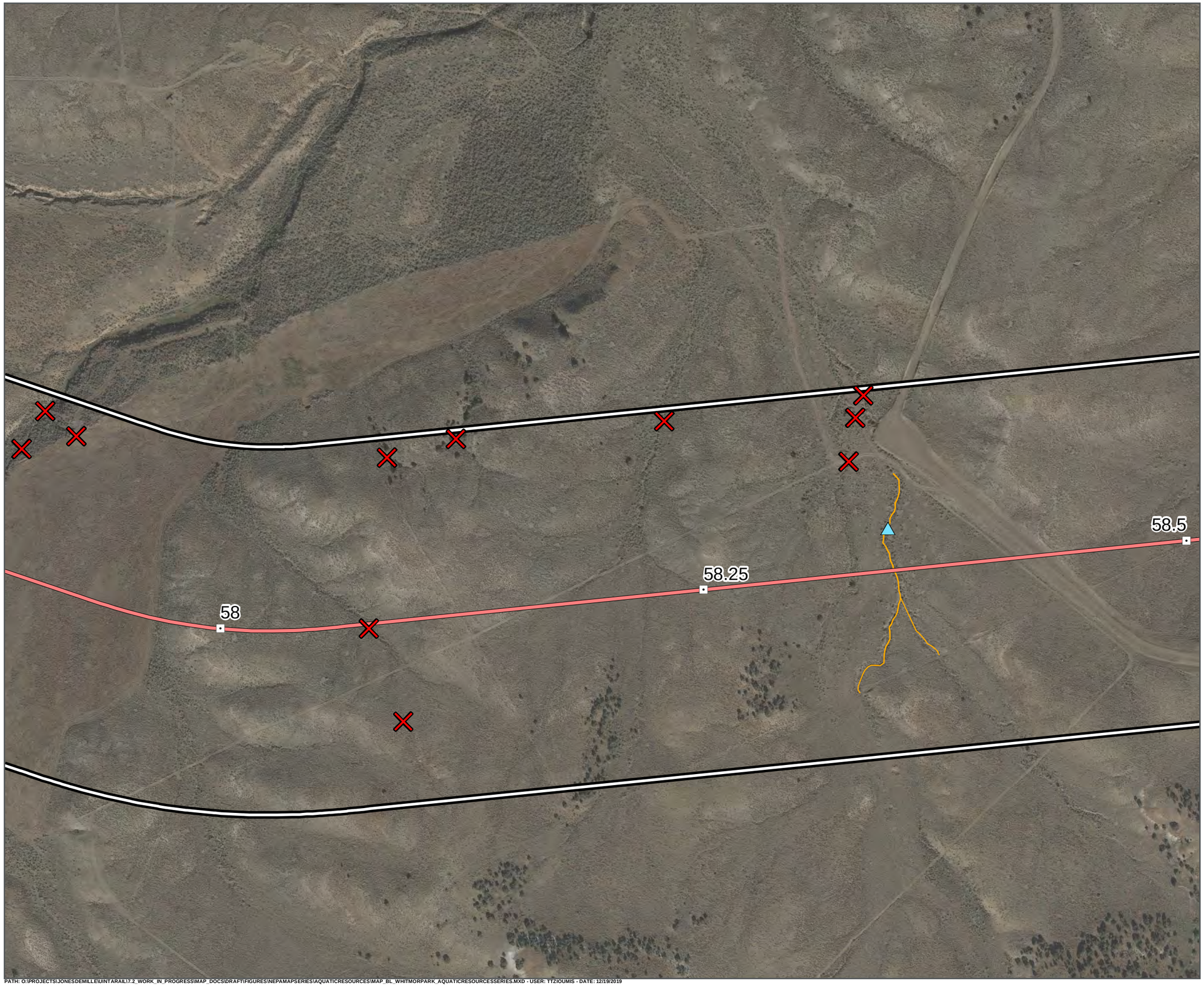
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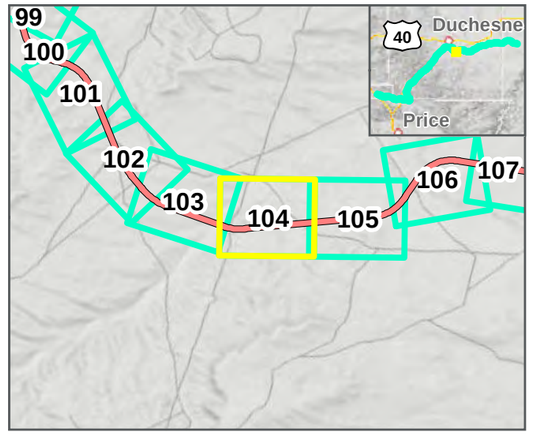
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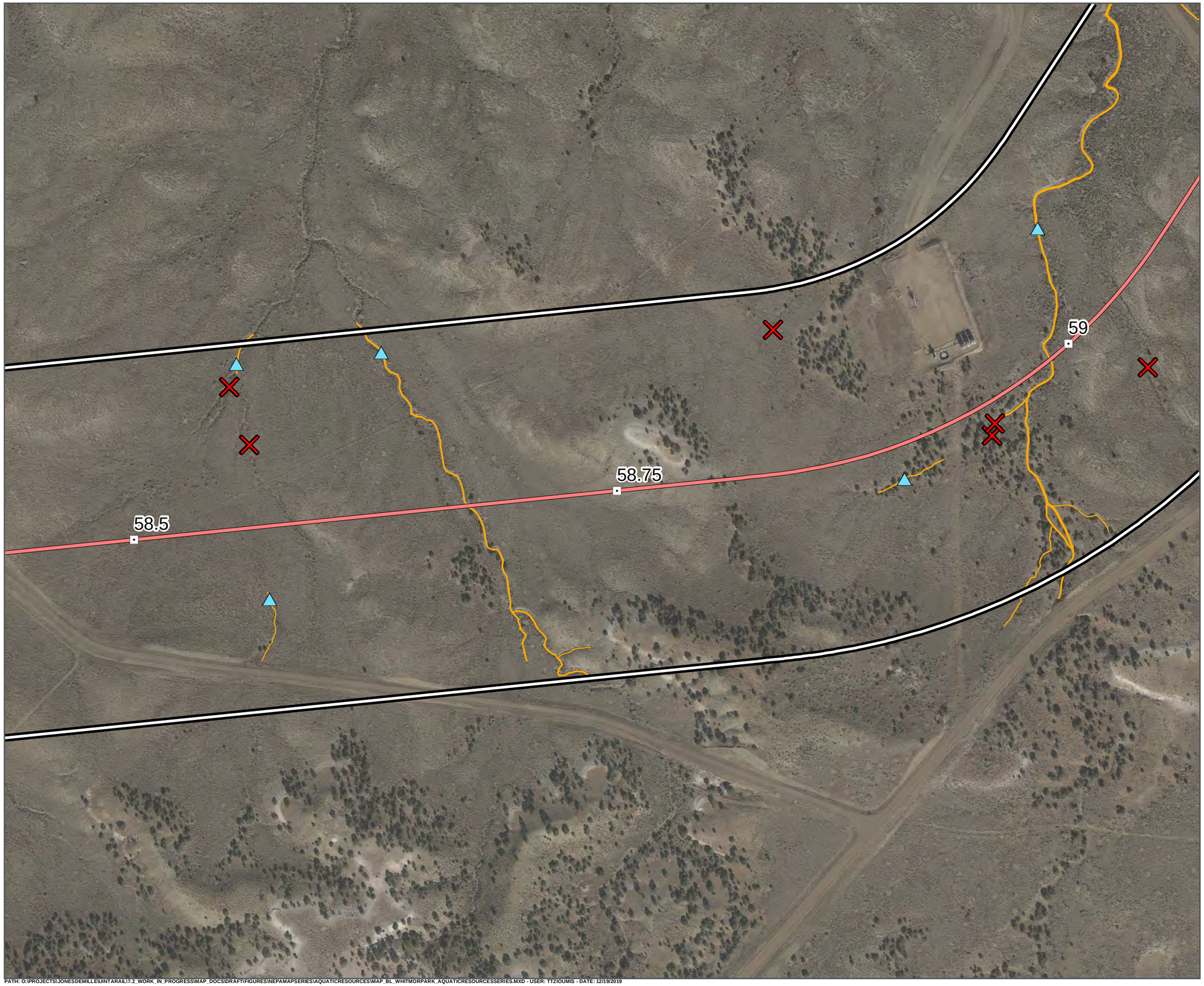
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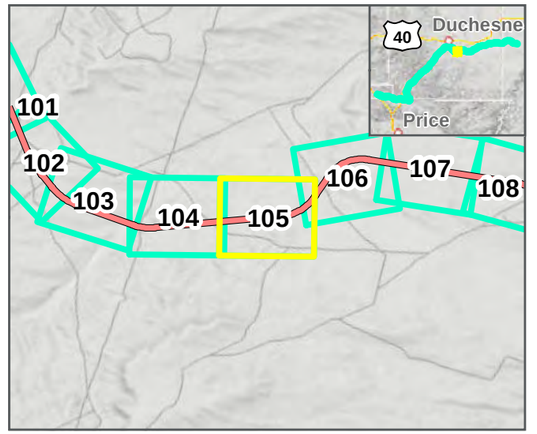
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PATH: O:\PROJECTS\JONESDEMILLE\UINTARAIL\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\FIGURES\NEPAMAPSERIES\AQUATICRESOURCES\MAP_BL_WHITMORPARK_AQUATICRESOURCESSERIES.MXD - USER: TTZIOUMIS - DATE: 12/19/2019





- Mileposts
- Whitmore Park Centerline
- Areas Not Surveyed (Data Digitized)
- In Point 2019
- Out Point 2019
- In Point 2014
- Out Point 2014
- Waterway Points 2019
- Waterway Points 2014
- Negative Point
- Verified Point
- Wet Meadow
- Emergent Marsh
- Shrub-Scrub
- Playa
- Open Water
- Perennial Stream
- Ephemeral/Intermittent Stream
- Ditch/Canal
- Study Area
- Map Extent (current view in yellow)

WHITMORE PARK ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

N

0 125 250 Feet

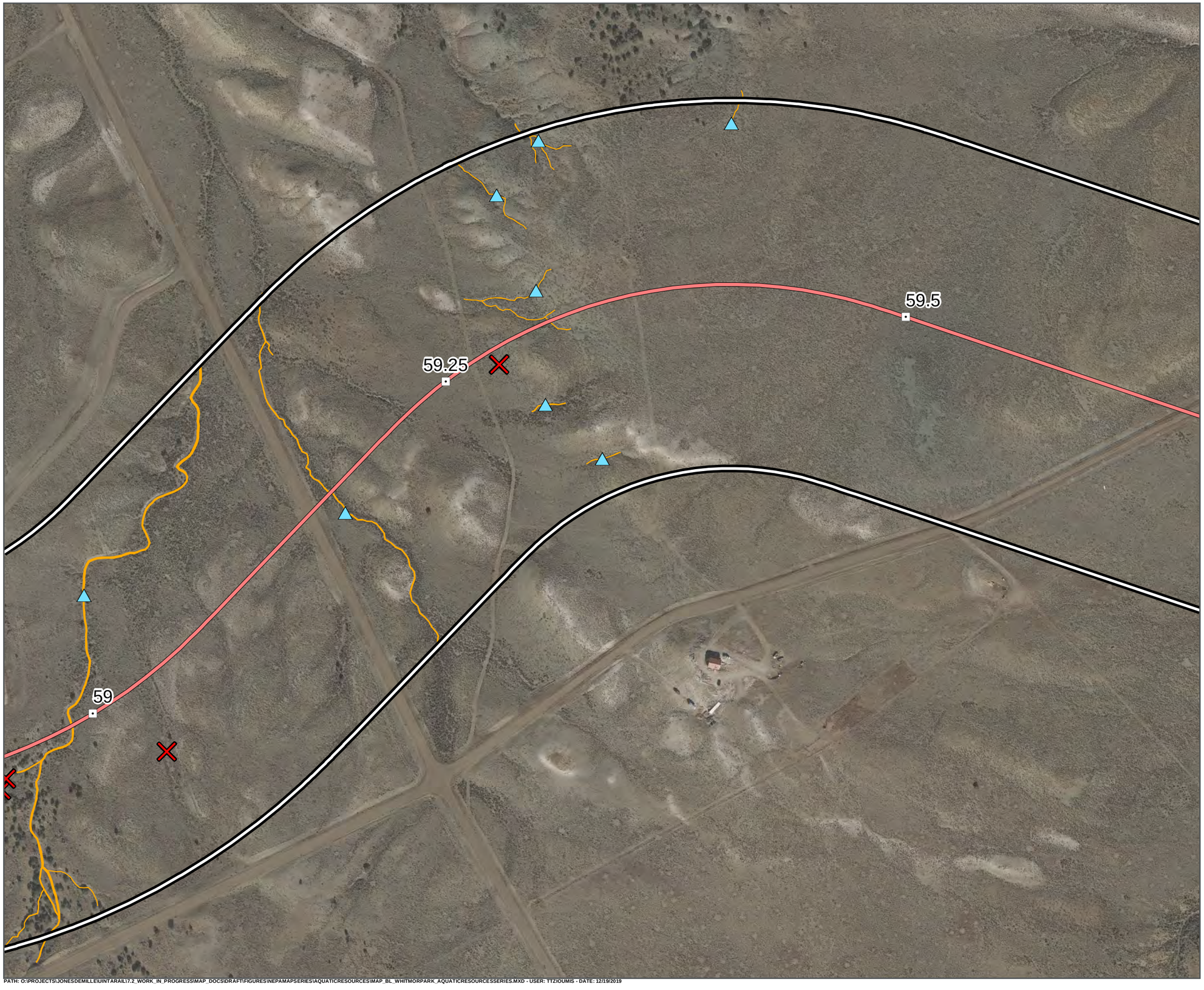
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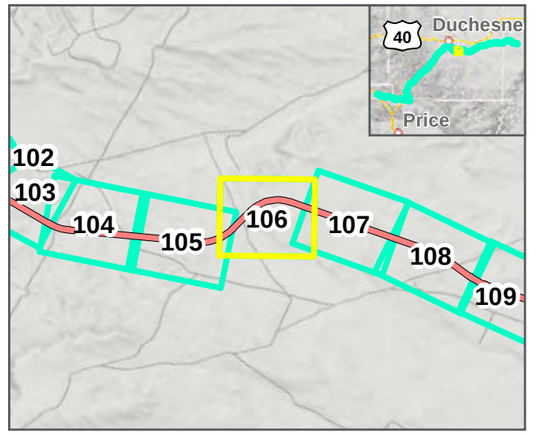
DATA SOURCES:
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AQUATIC RESOURCES
DECEMBER 2019

0 125 250 Feet

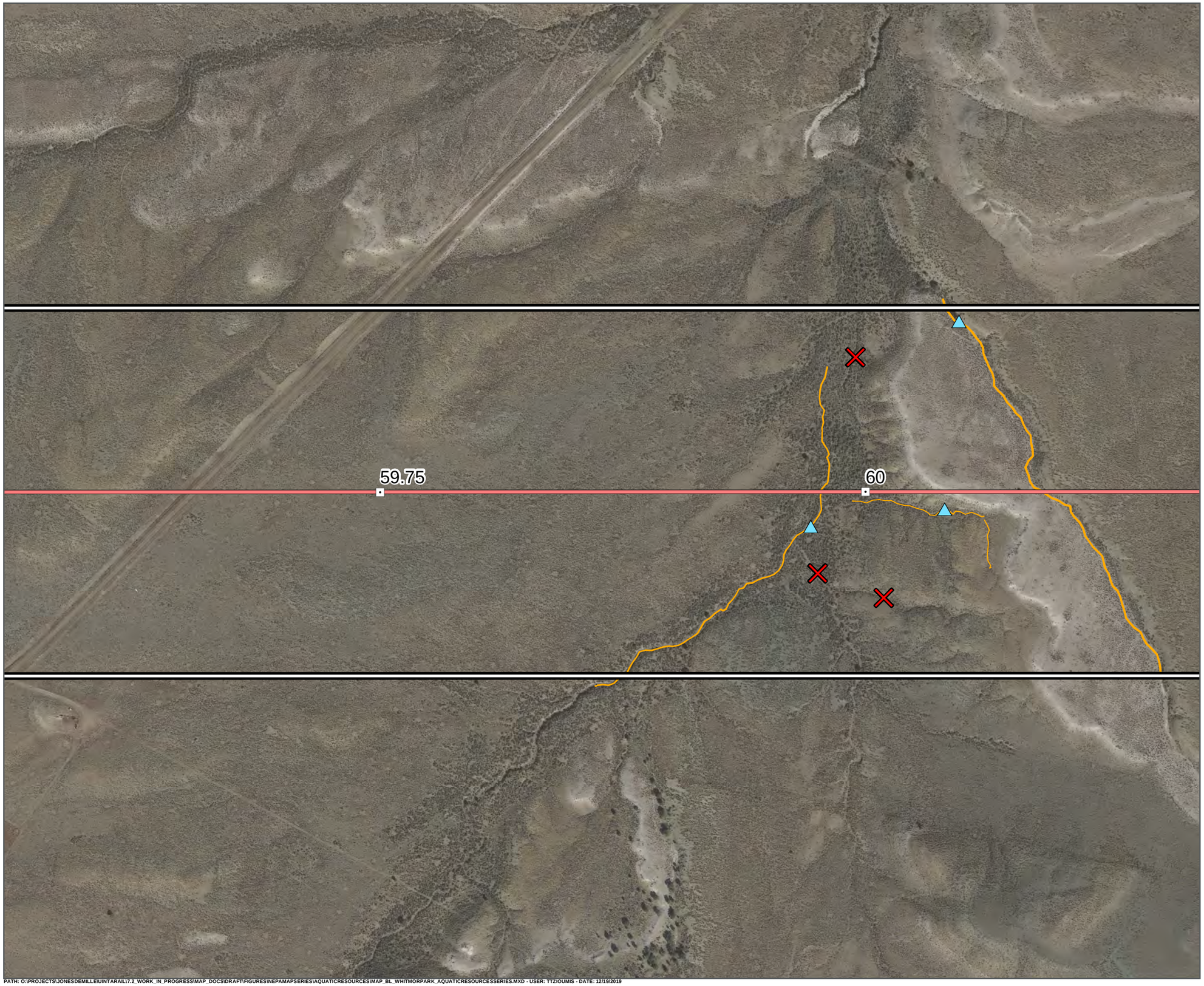
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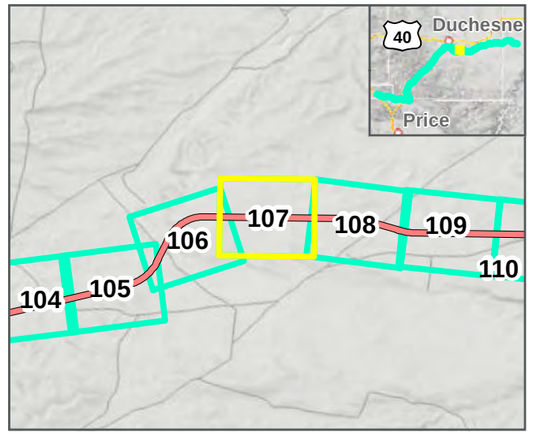
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AQUATIC RESOURCES
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N

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SEVEN COUNTY INFRASTRUCTURE COALITION

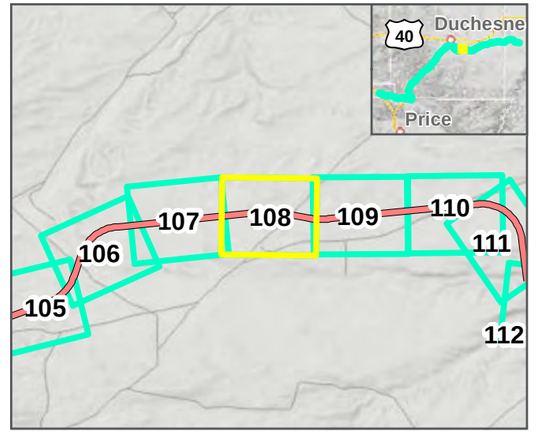
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60.25

60.5

PRAIRIE VIEW LN



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WHITMORE PARK ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

N

0 125 250 Feet

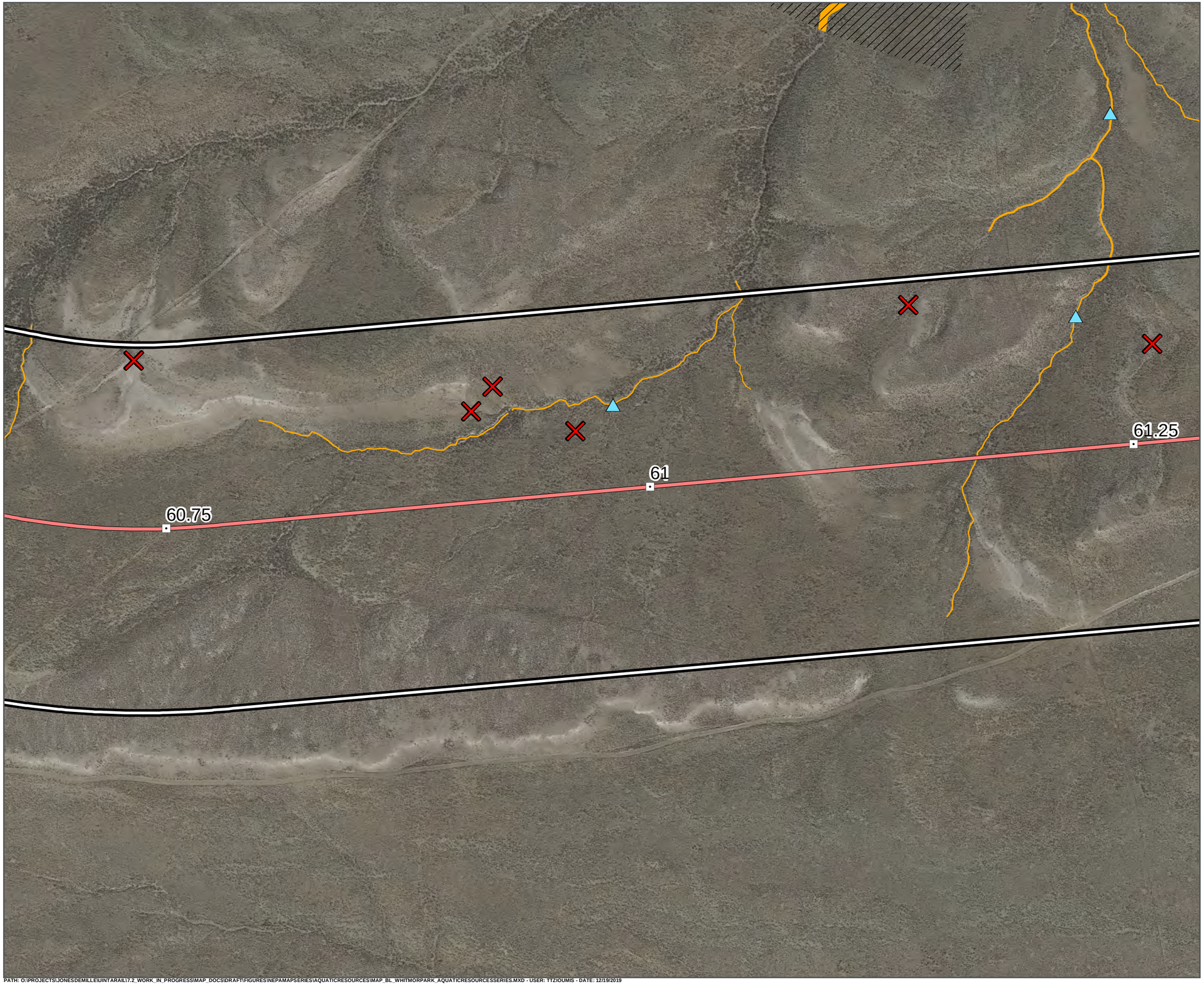
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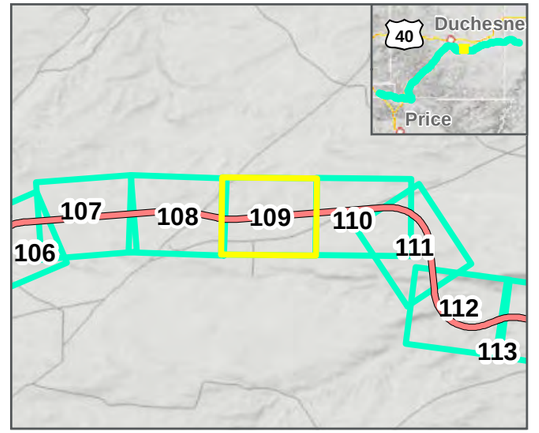
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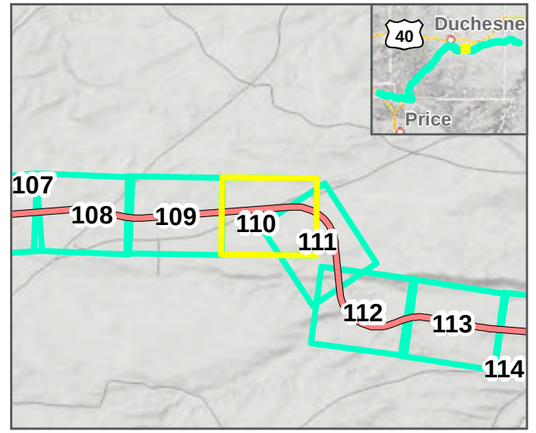
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61.25

61.5

61.75



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DECEMBER 2019

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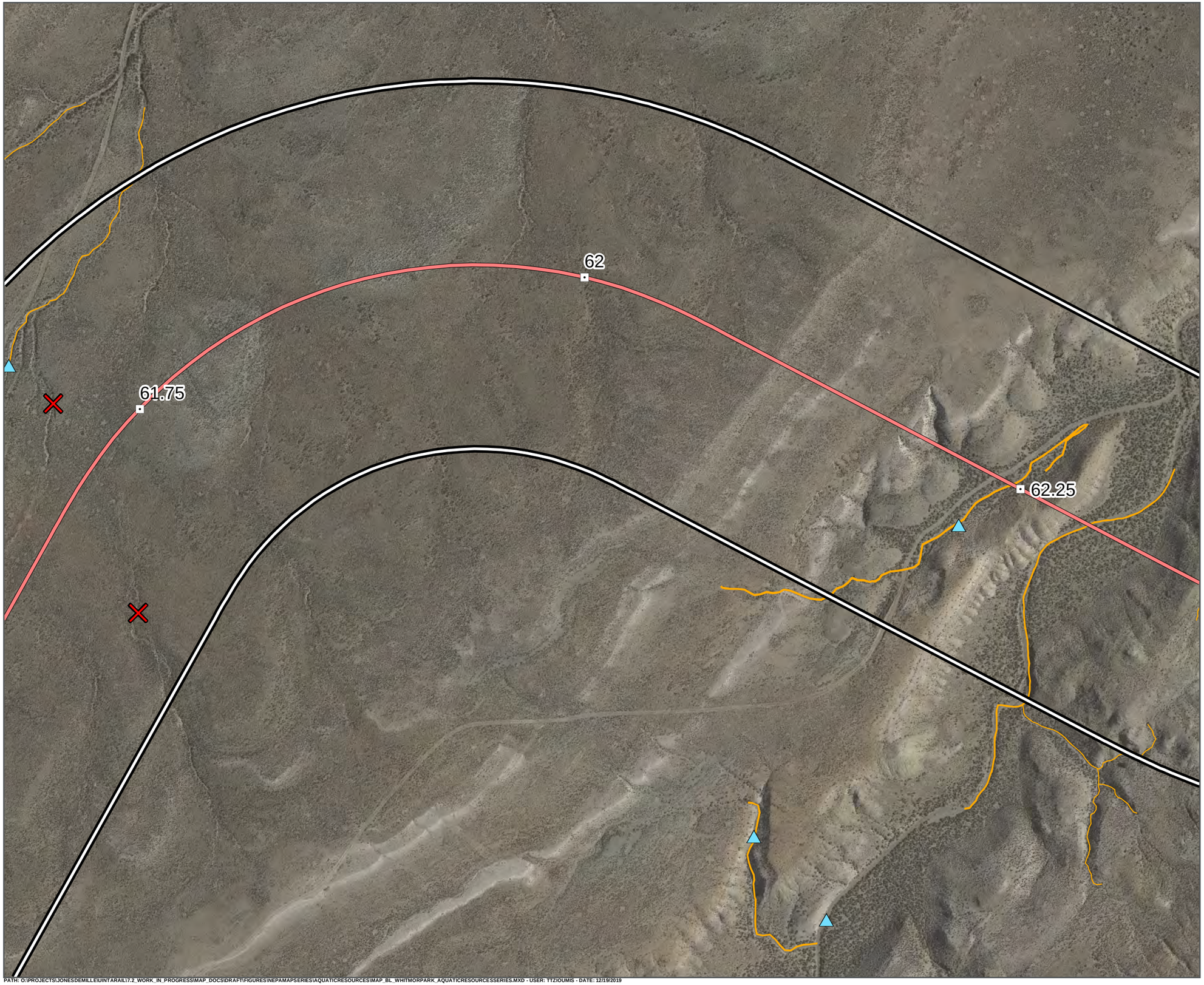
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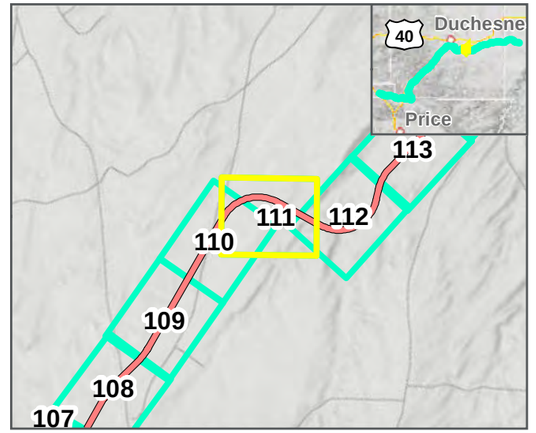
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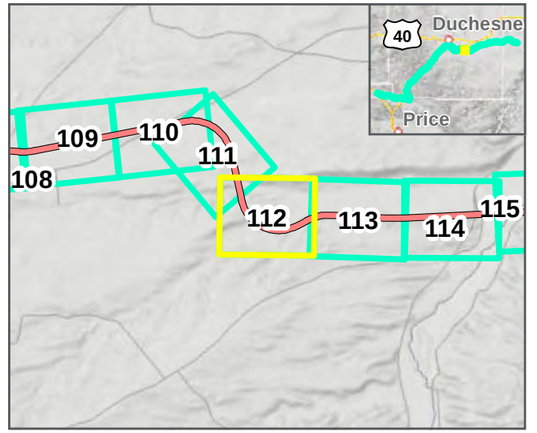
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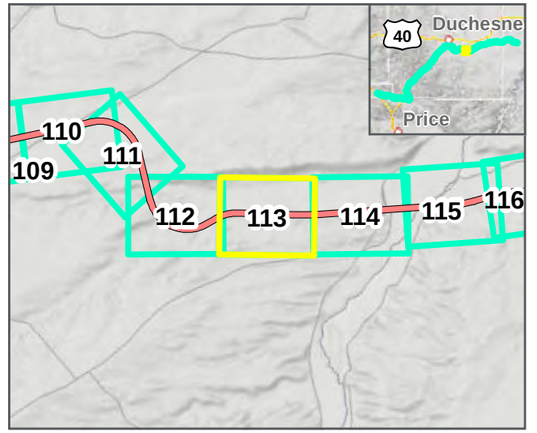
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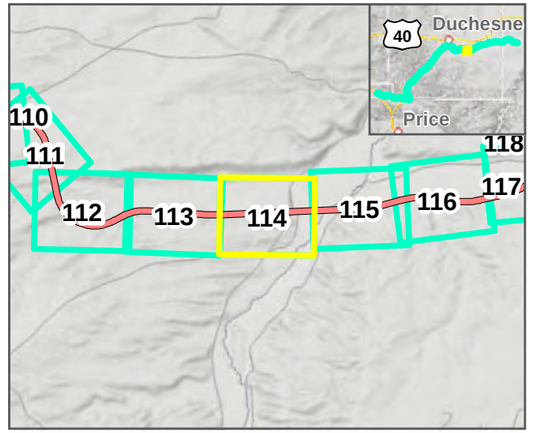
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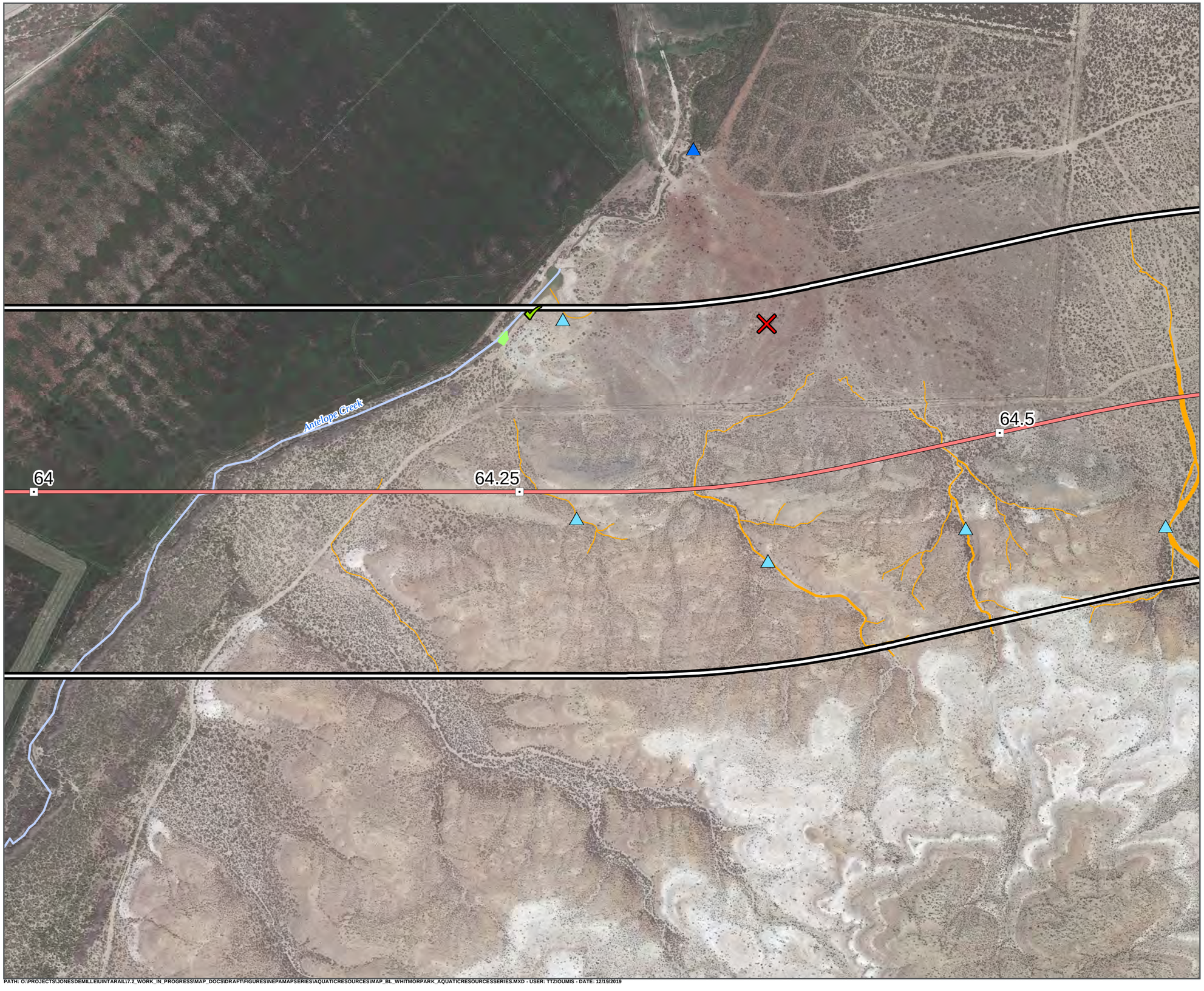
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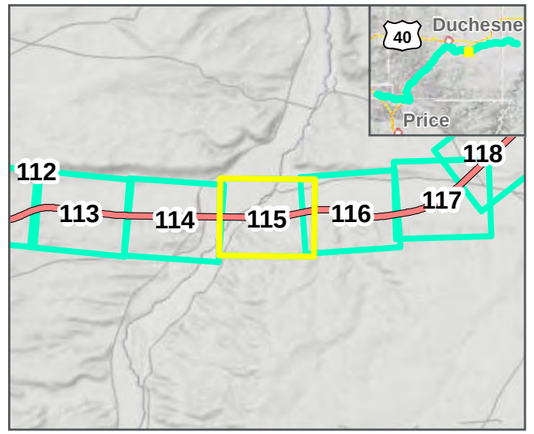
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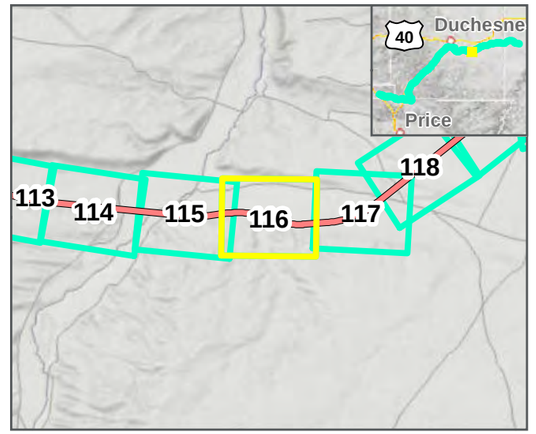
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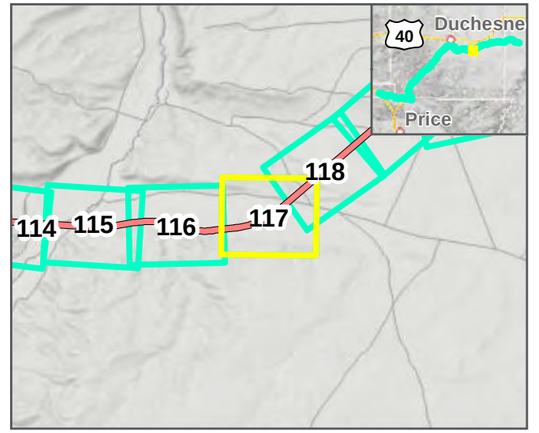
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65.75

65.5

65.25



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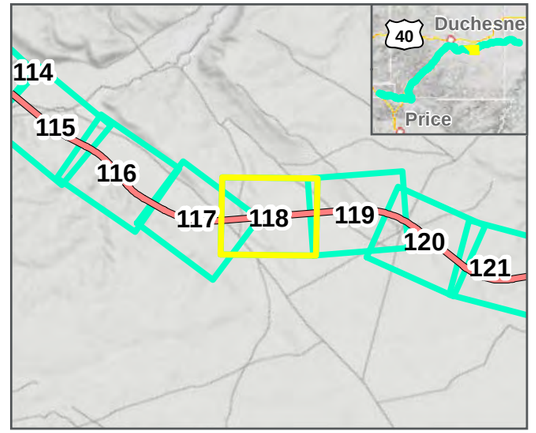
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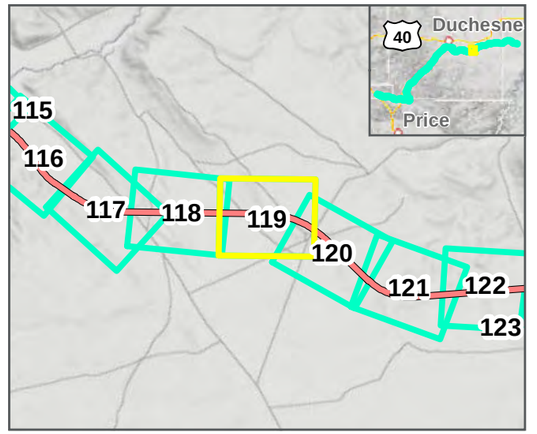
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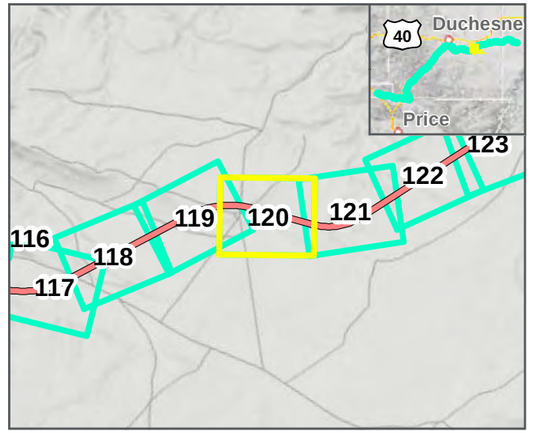
DATA SOURCES:
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SEVEN COUNTY INFRASTRUCTURE COALITION

HDR

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WHITMORE PARK ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

N

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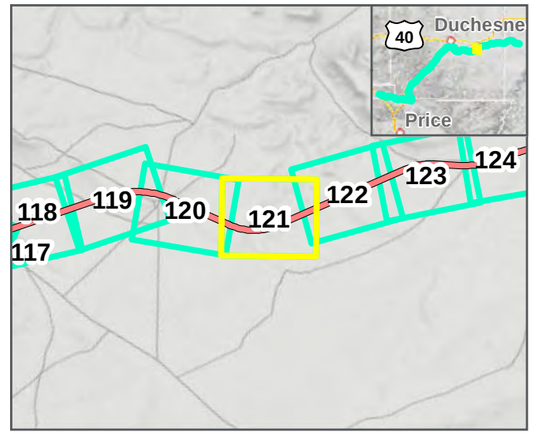
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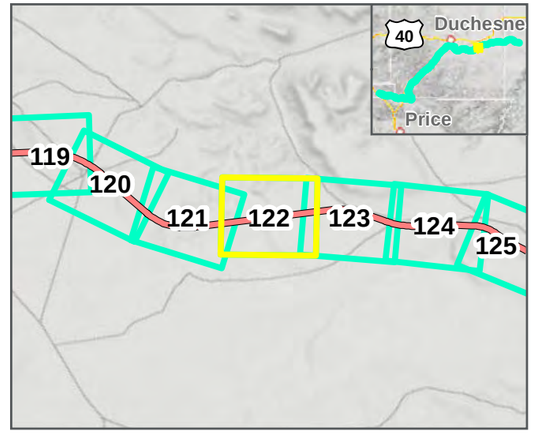
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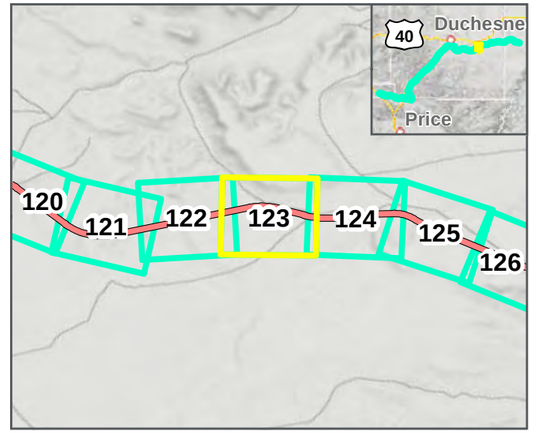
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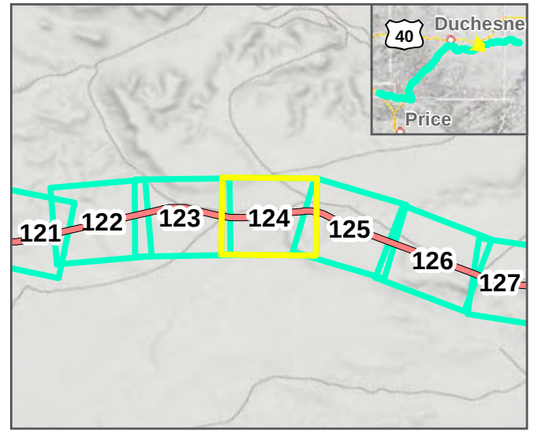
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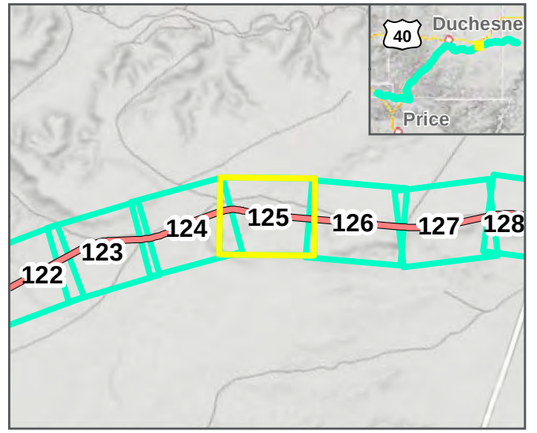
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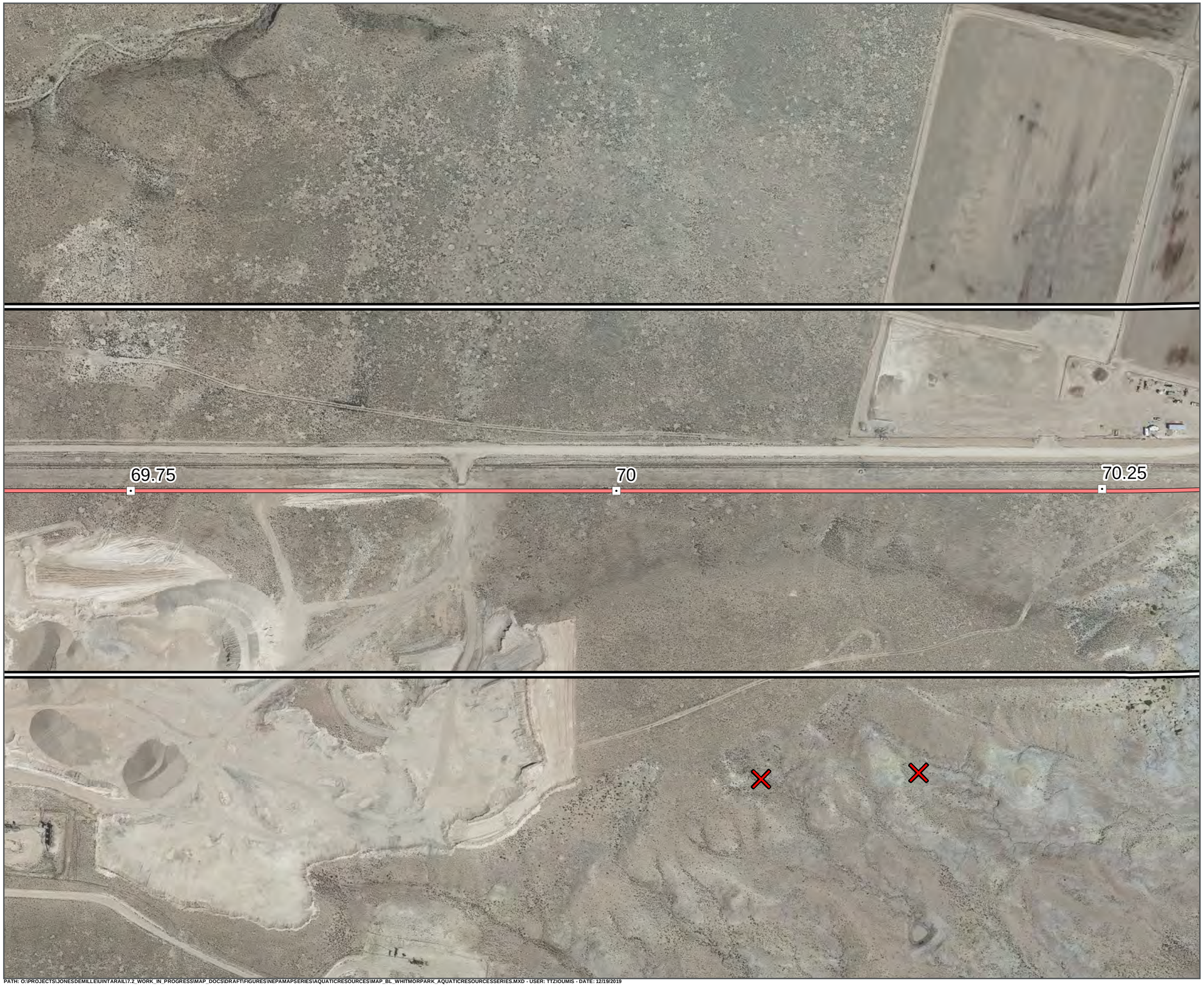
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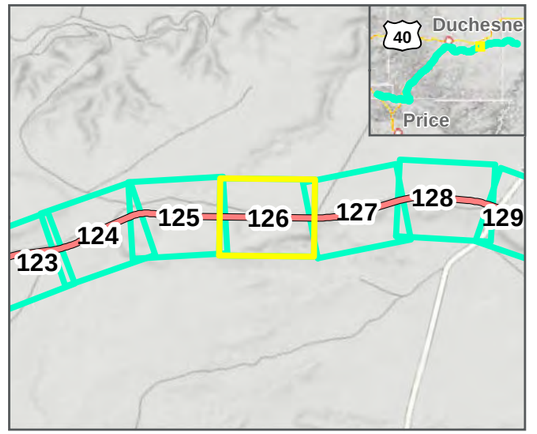
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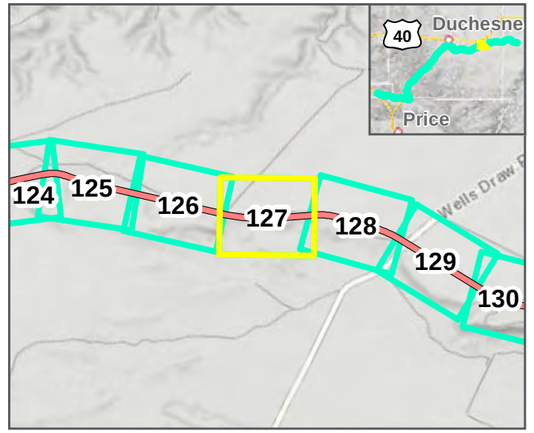
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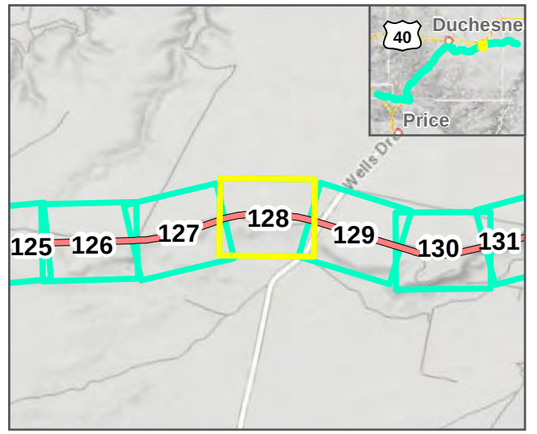
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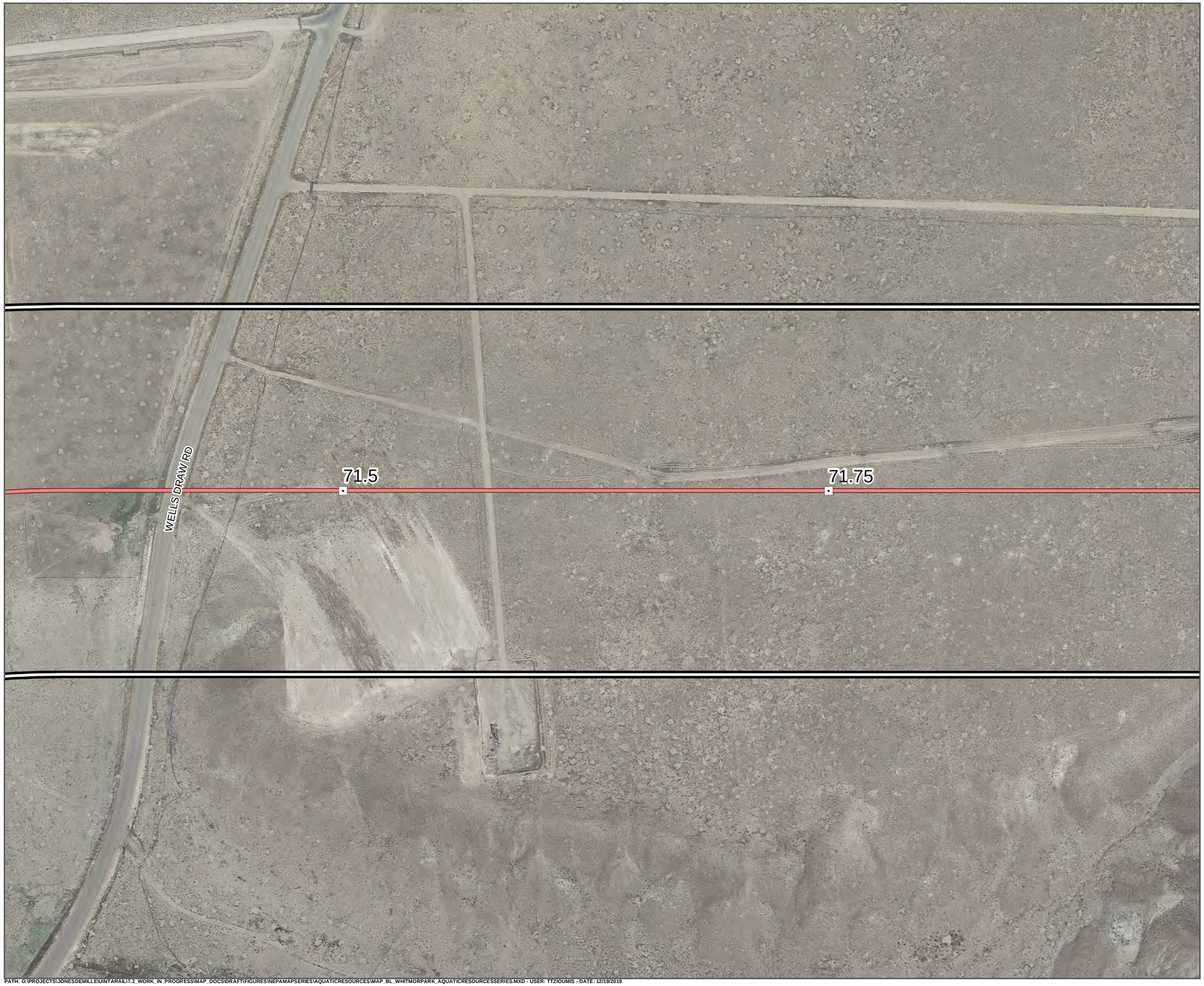
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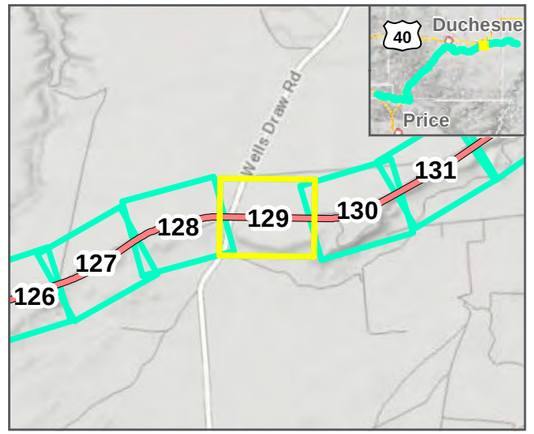
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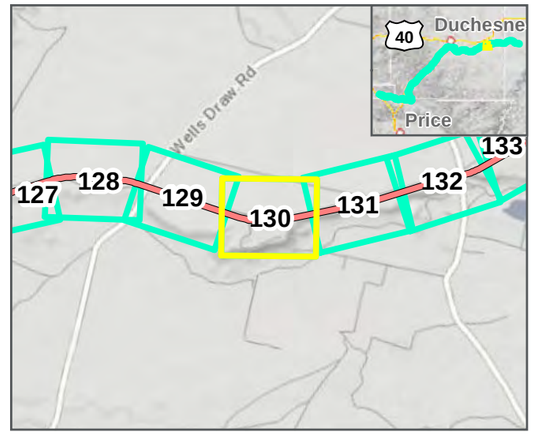
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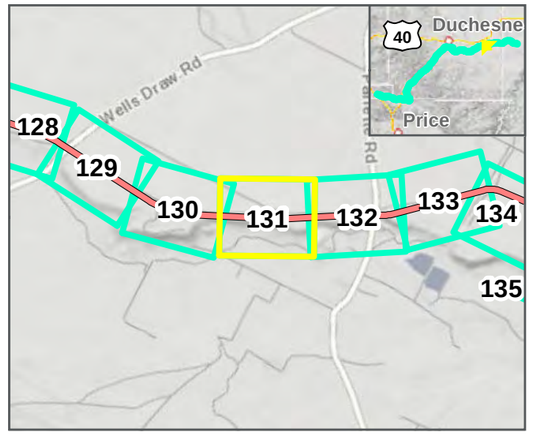
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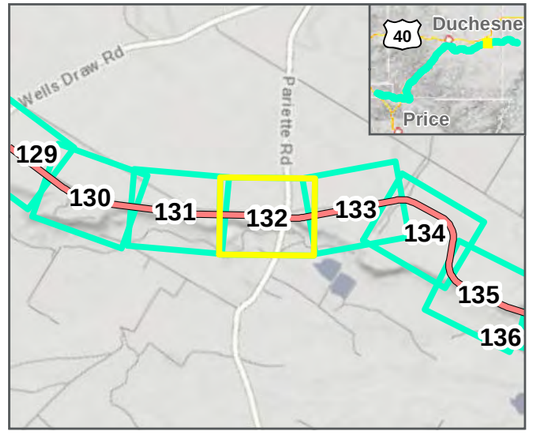
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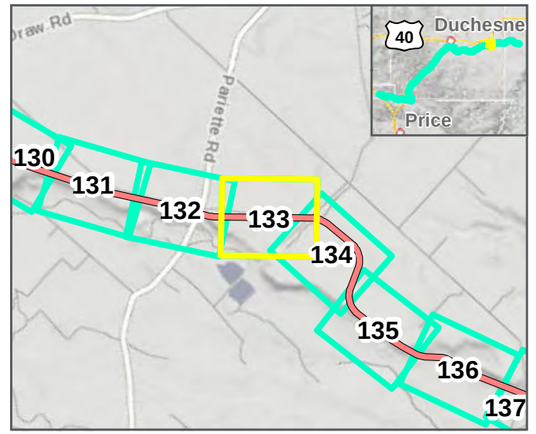
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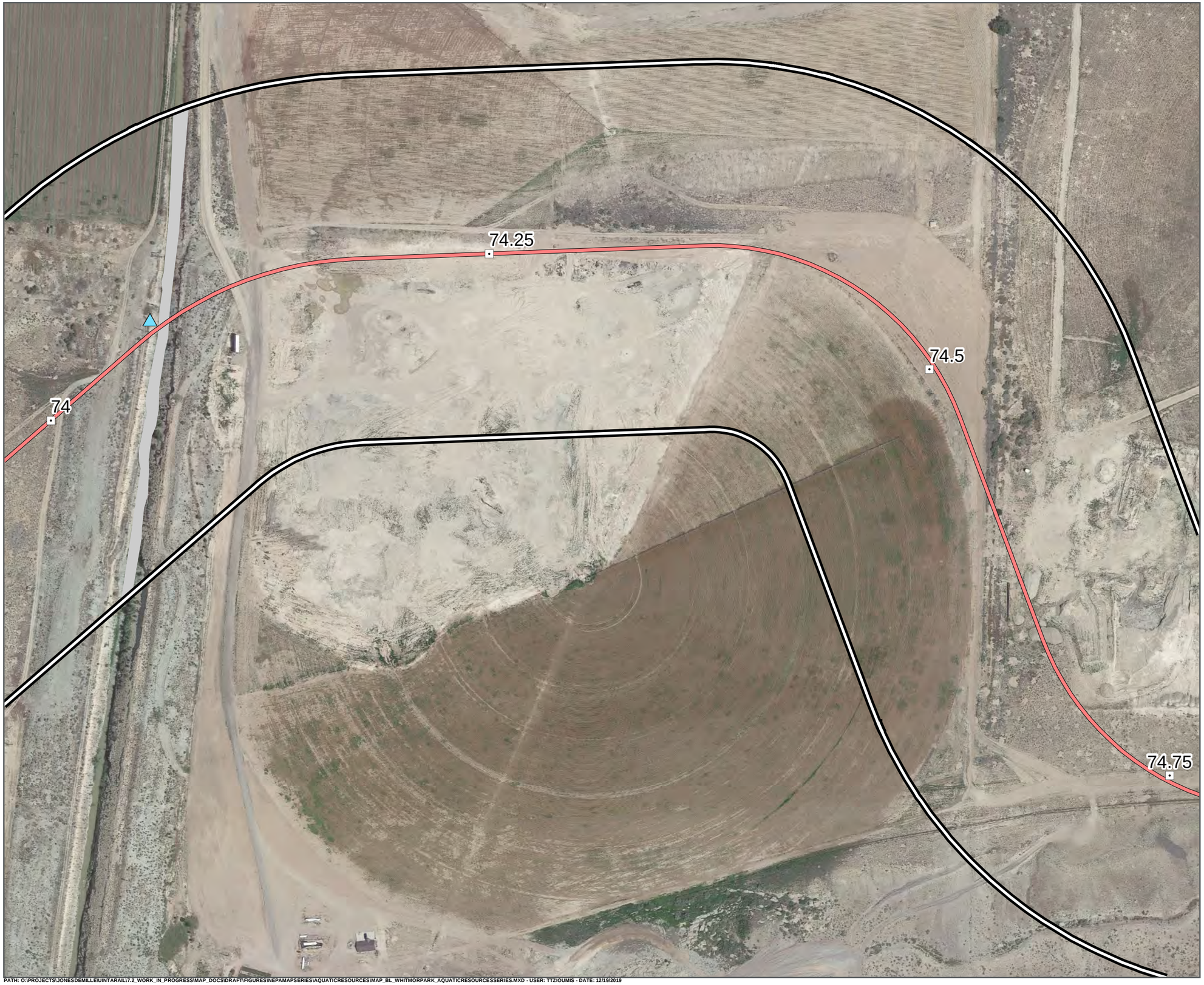
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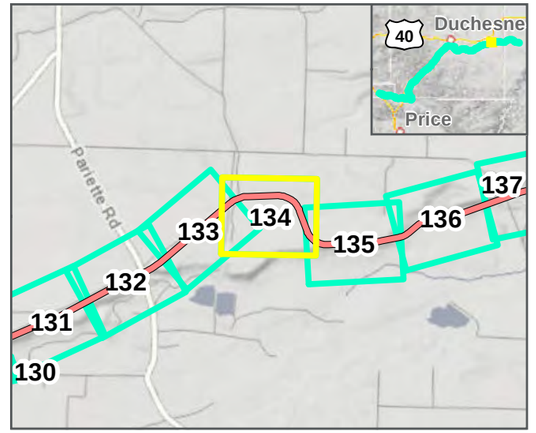
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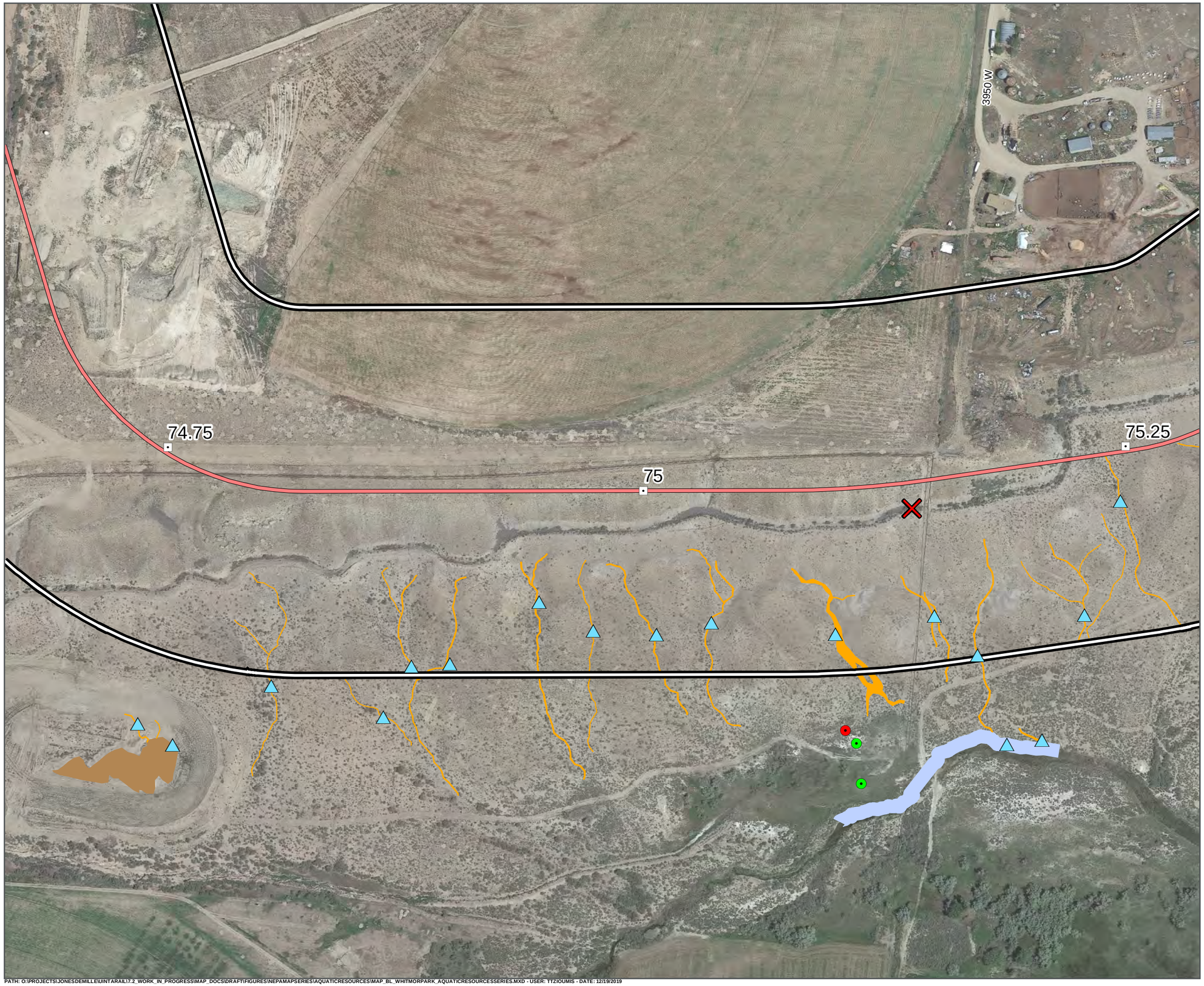
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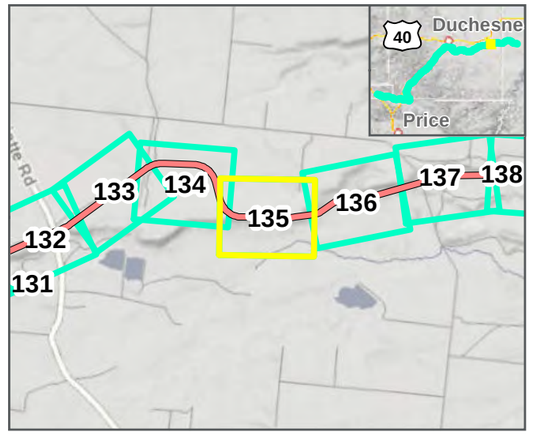
DATA SOURCES:
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COODINATE SYSTEM:
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WHITMORE PARK ALTERNATIVE: 11/22/2019

AQUATIC RESOURCES
DECEMBER 2019

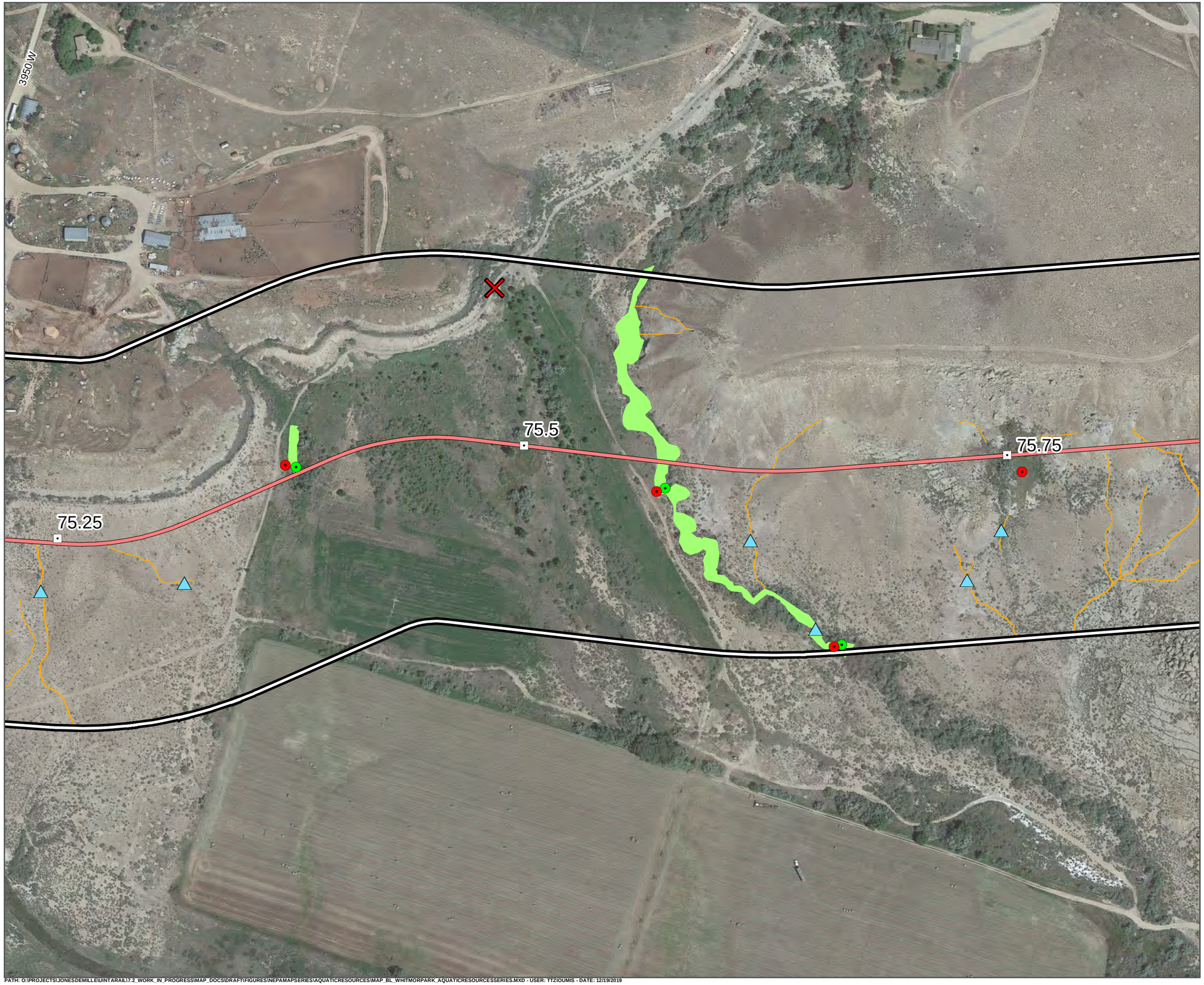
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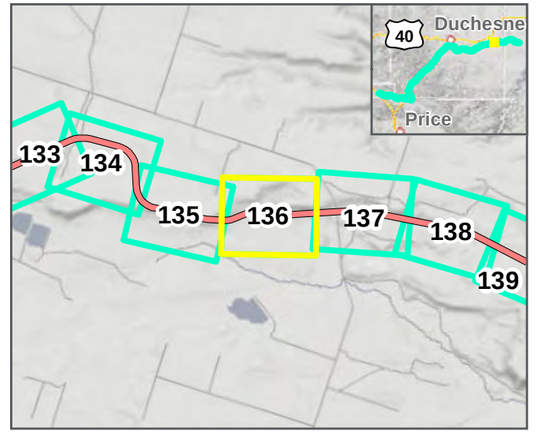
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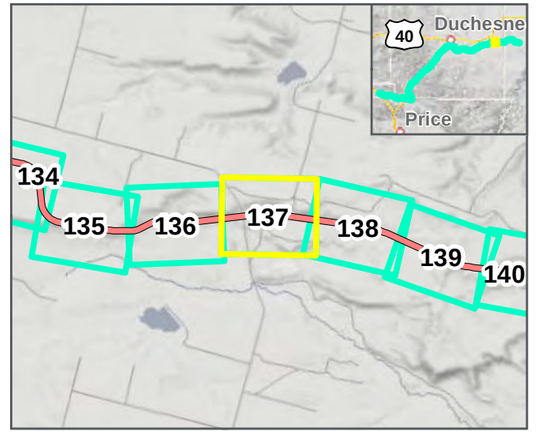
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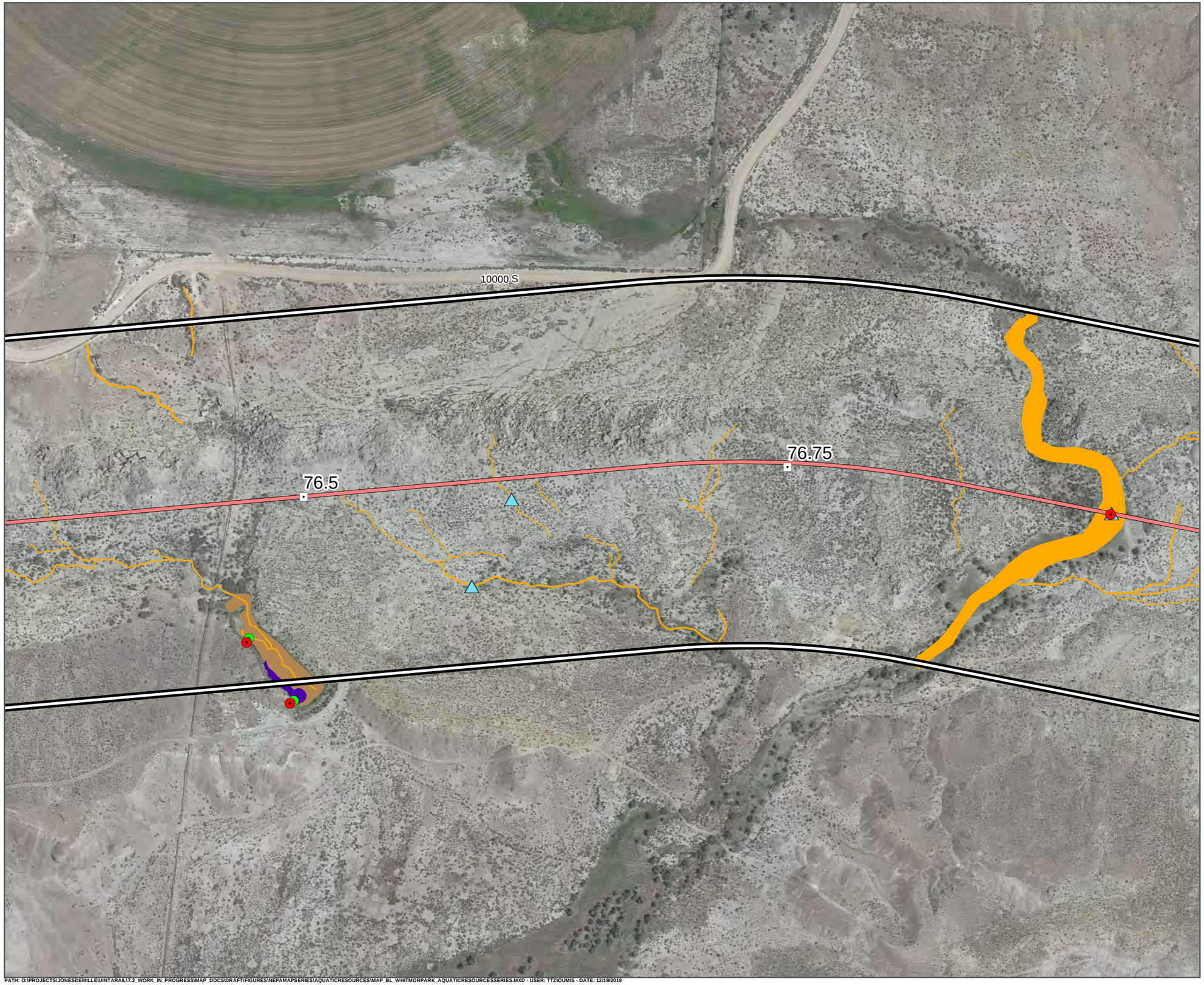
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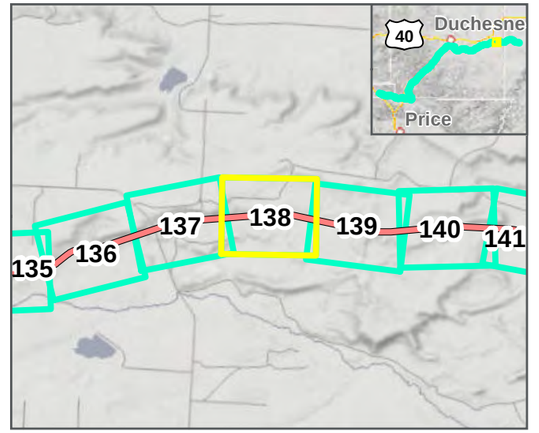
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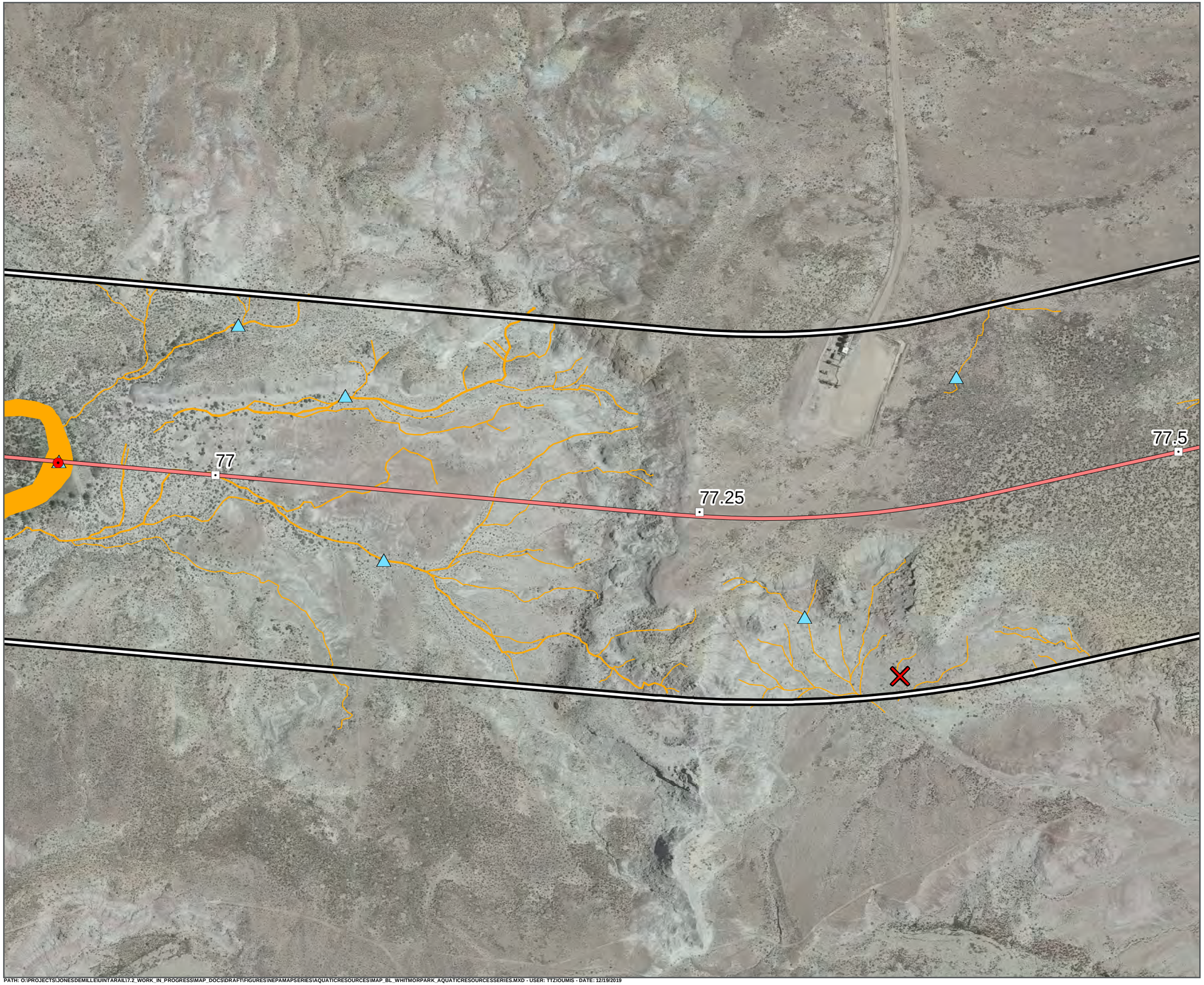
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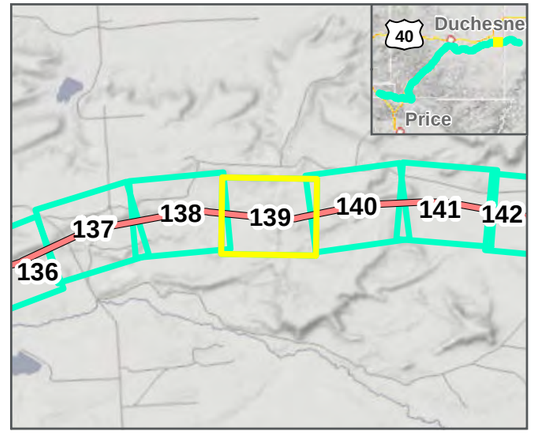
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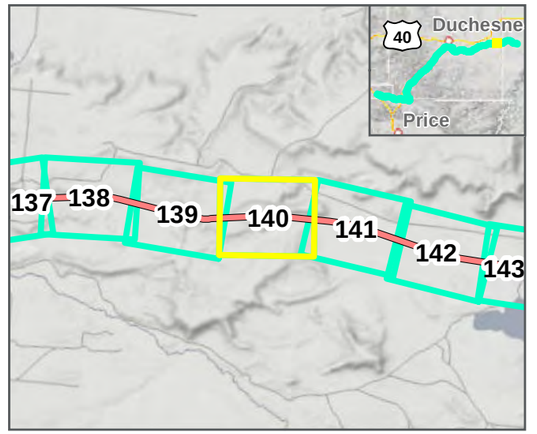
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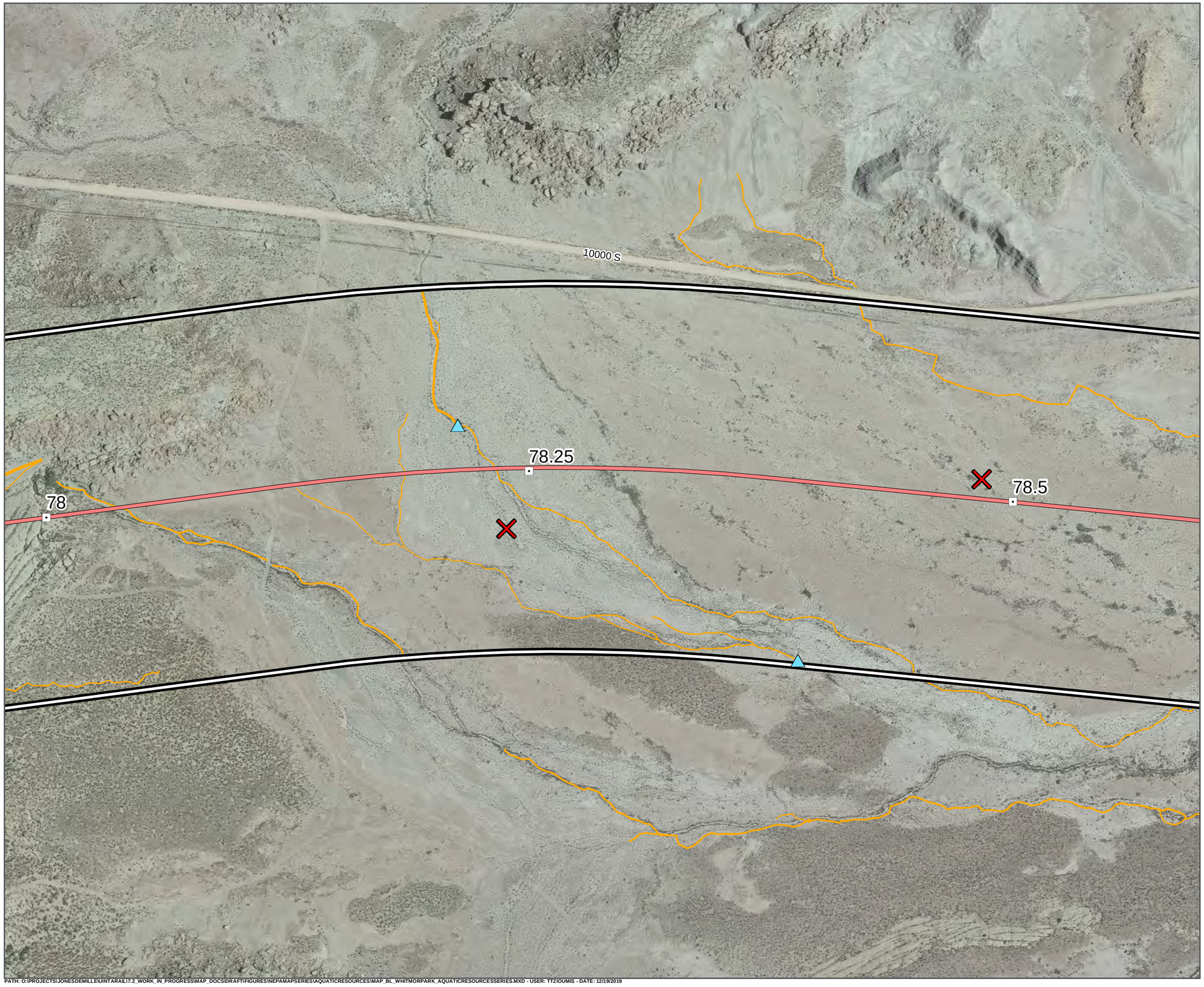
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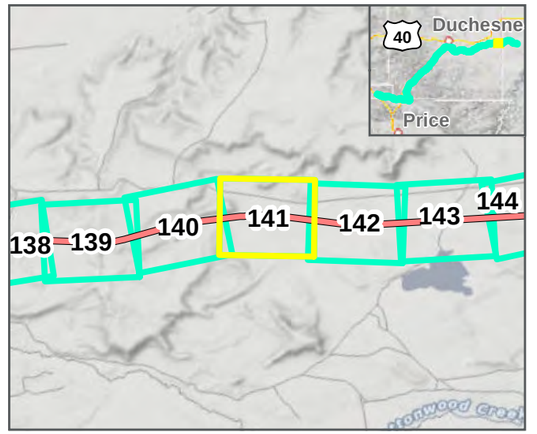
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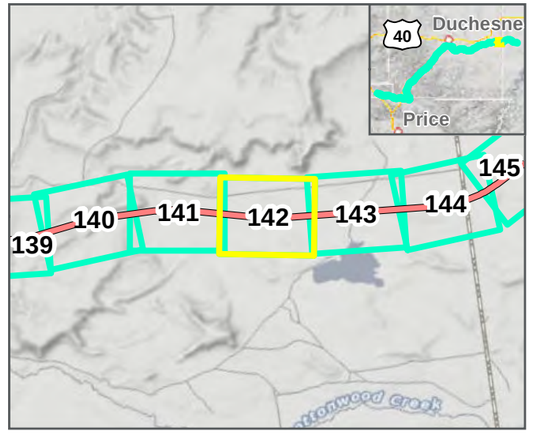
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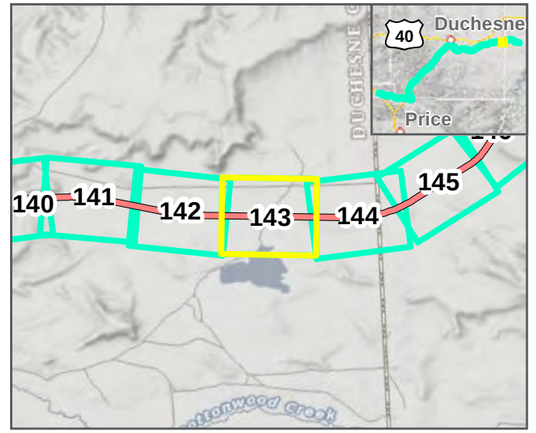
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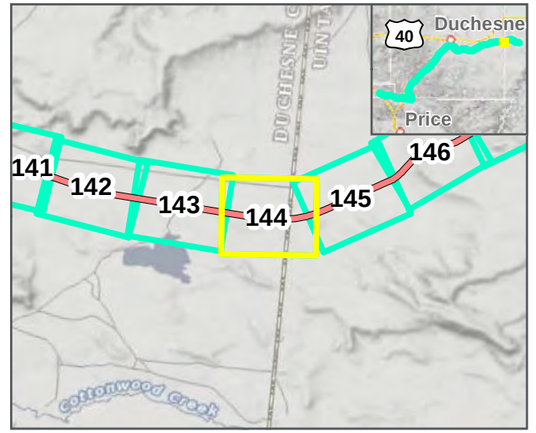
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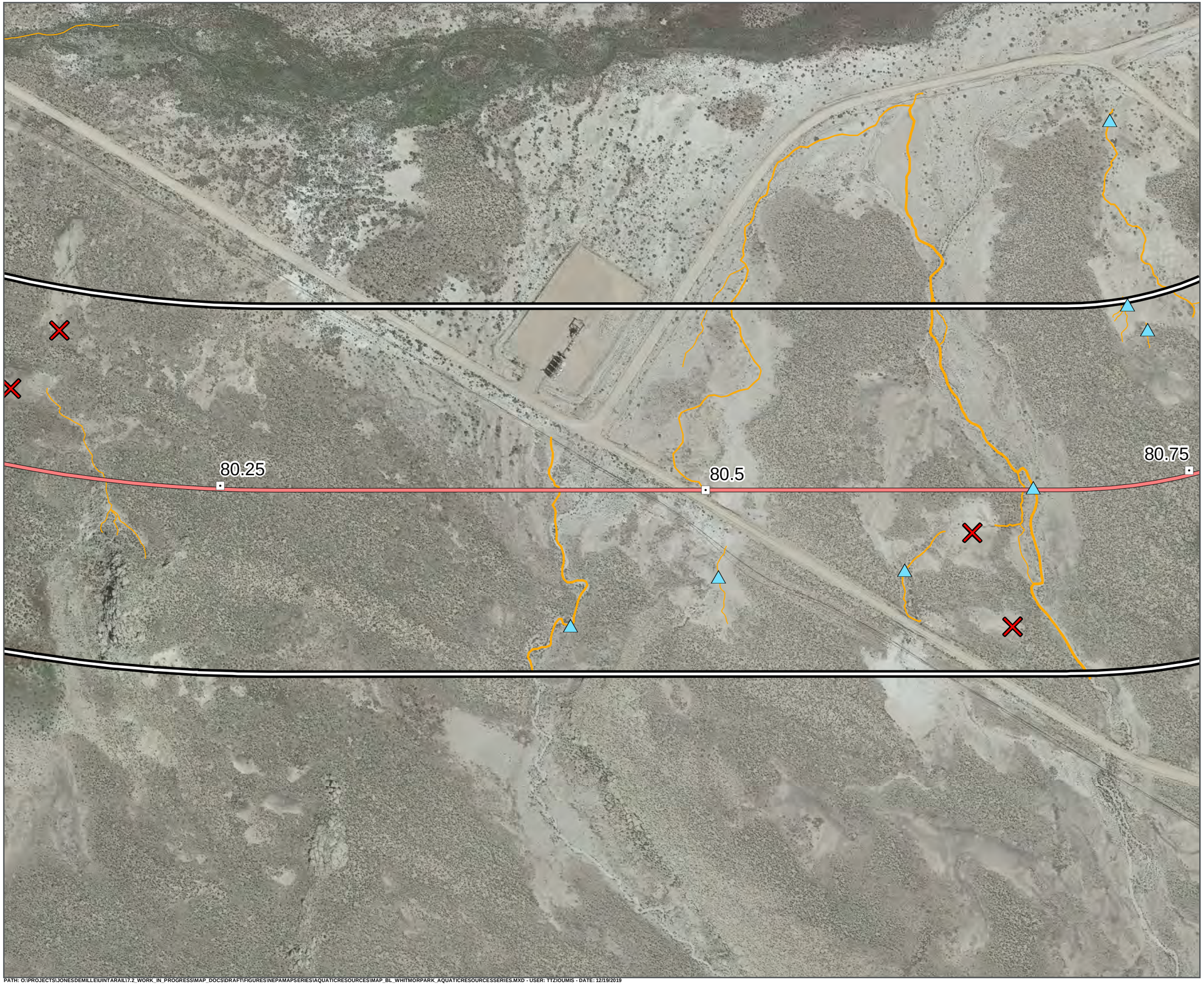
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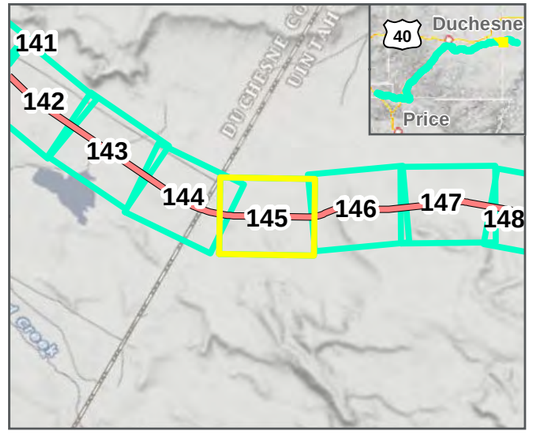
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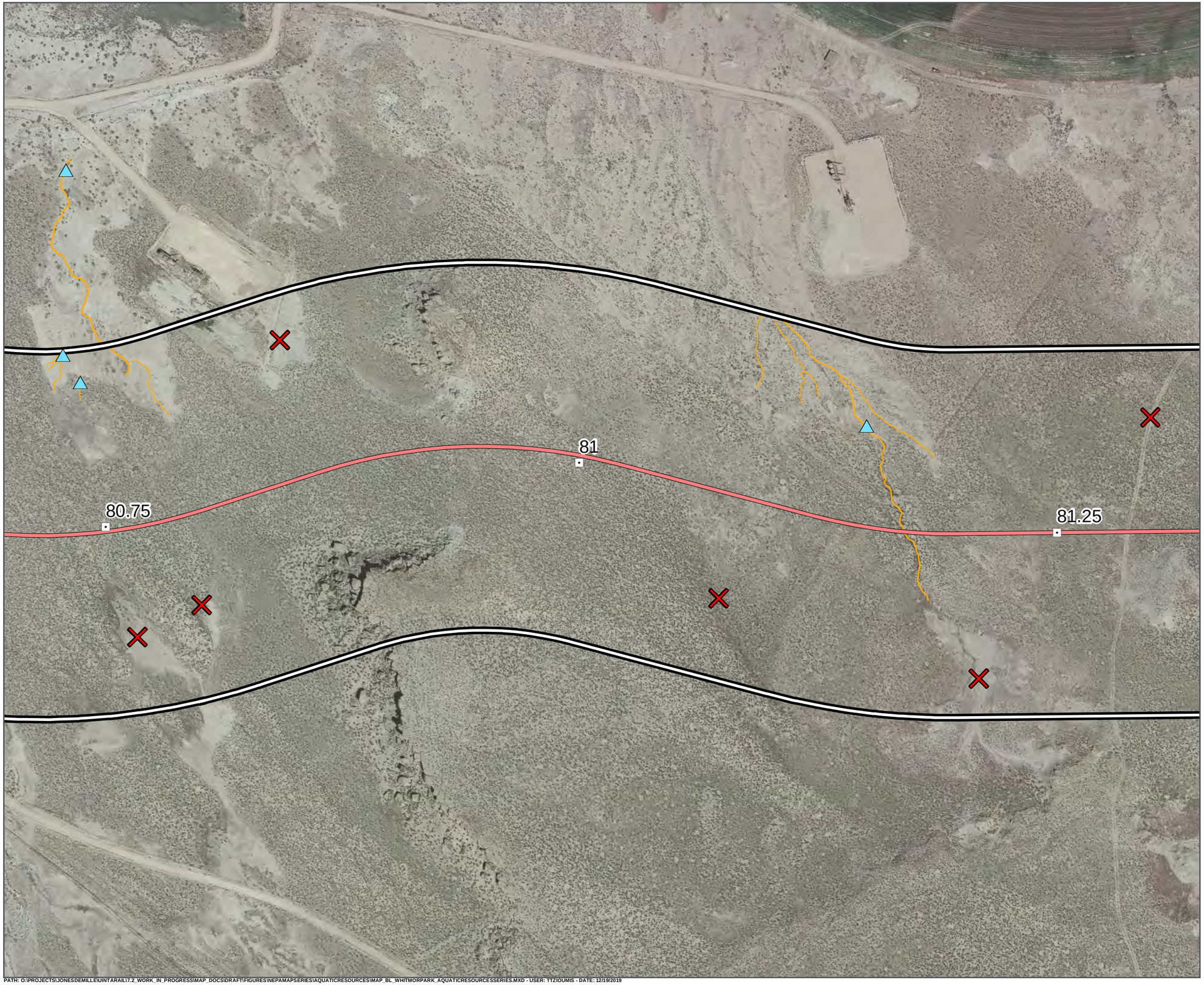
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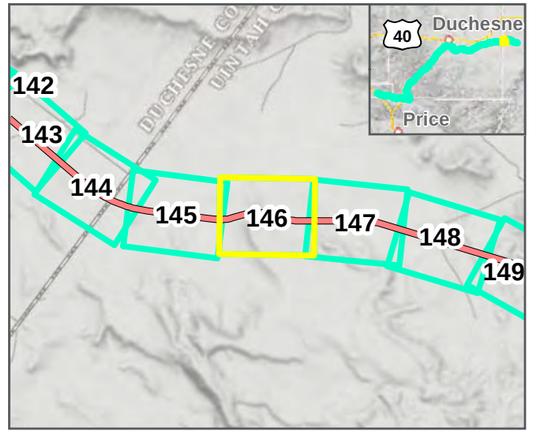
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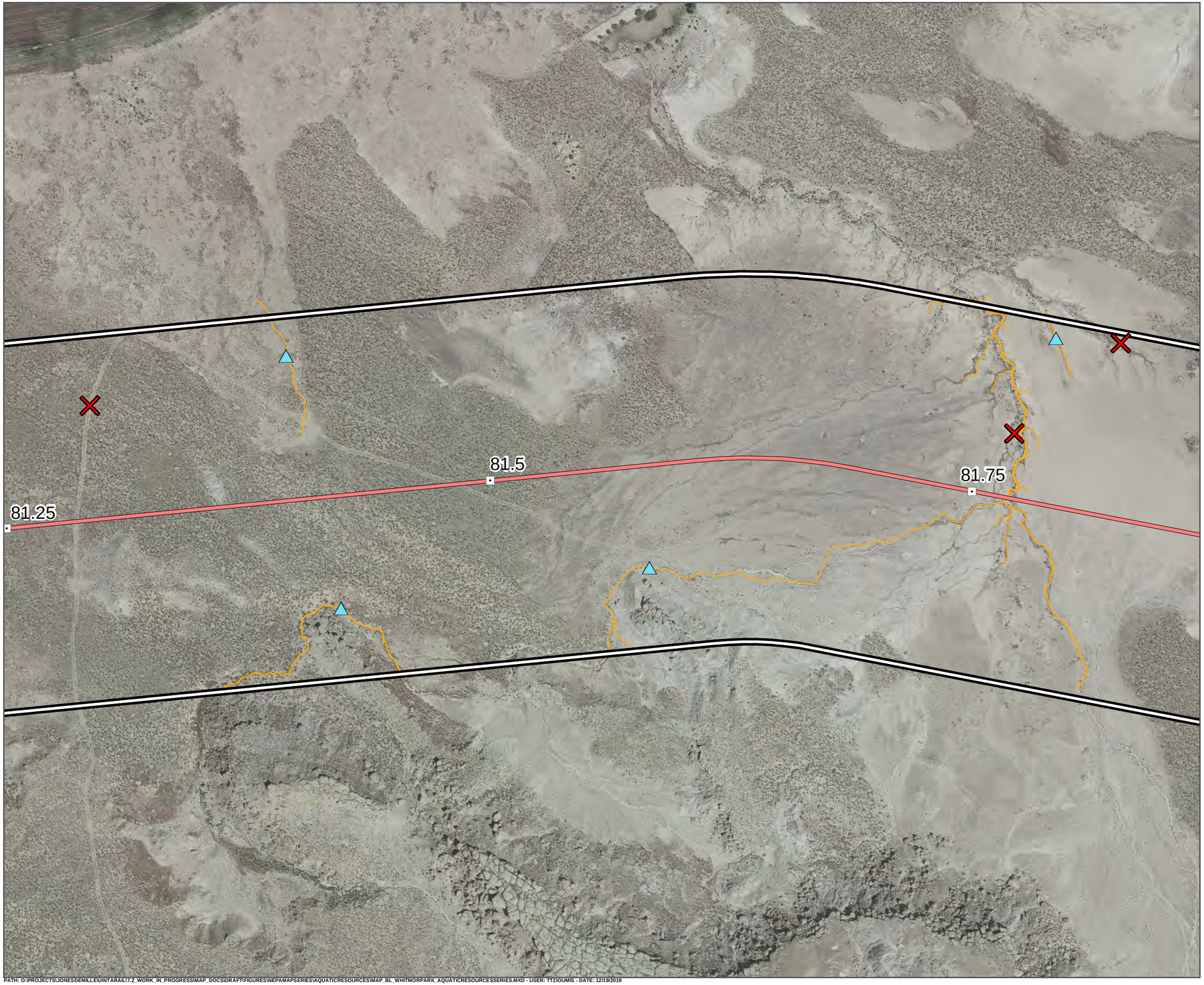
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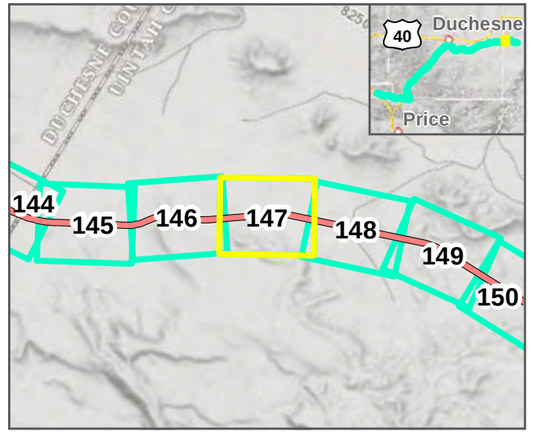
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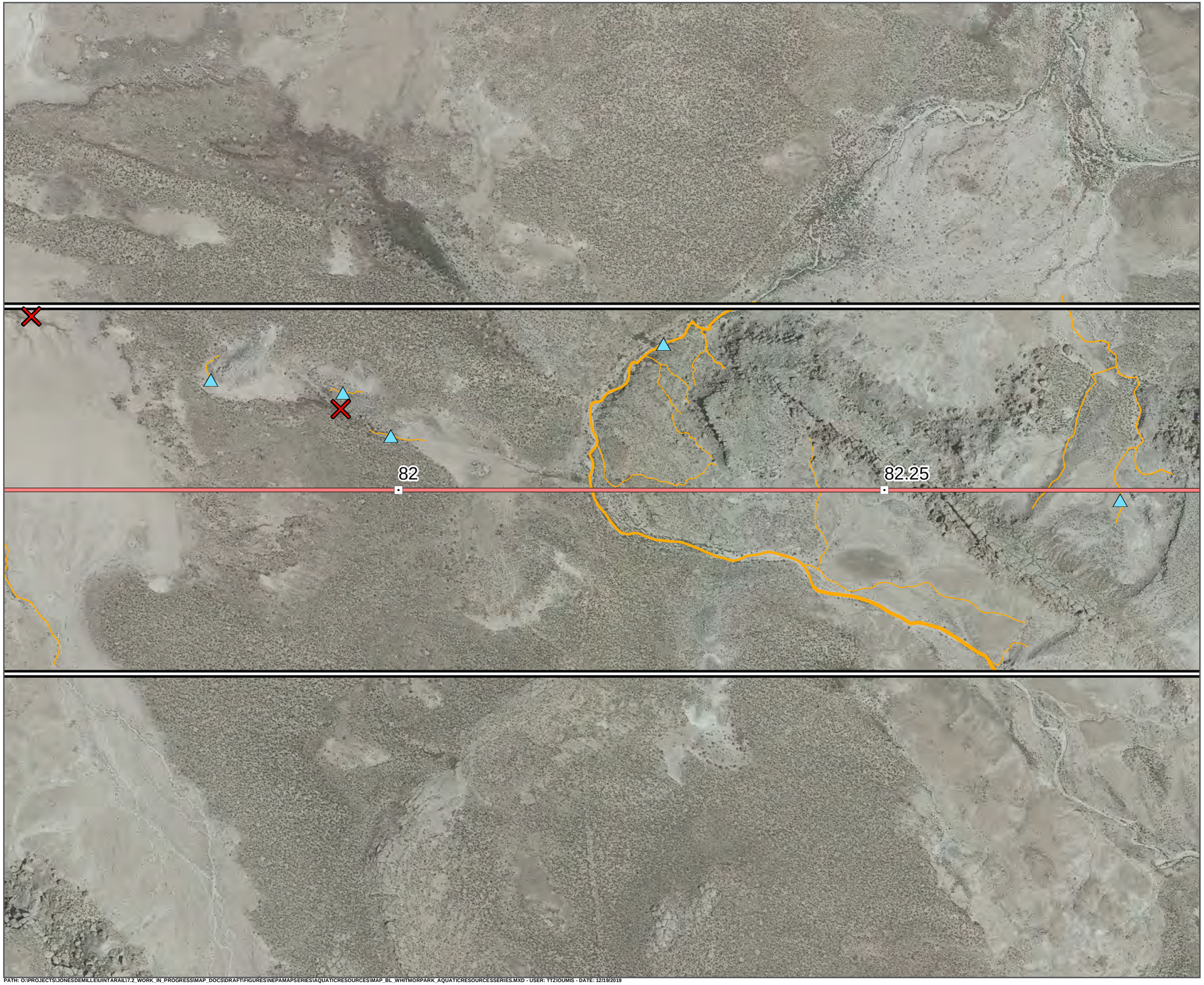
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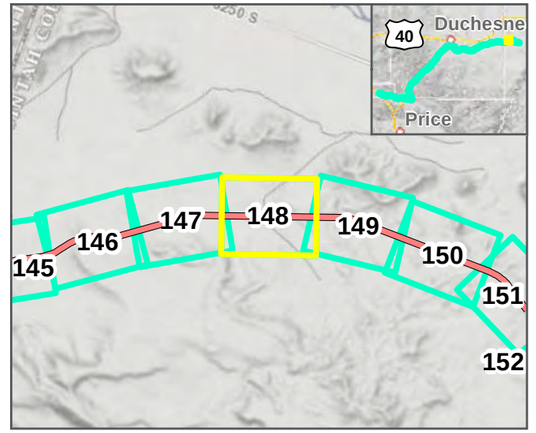
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- Map Extent (current view in yellow)

WHITMORE PARK ALTERNATIVE: 11/22/2019

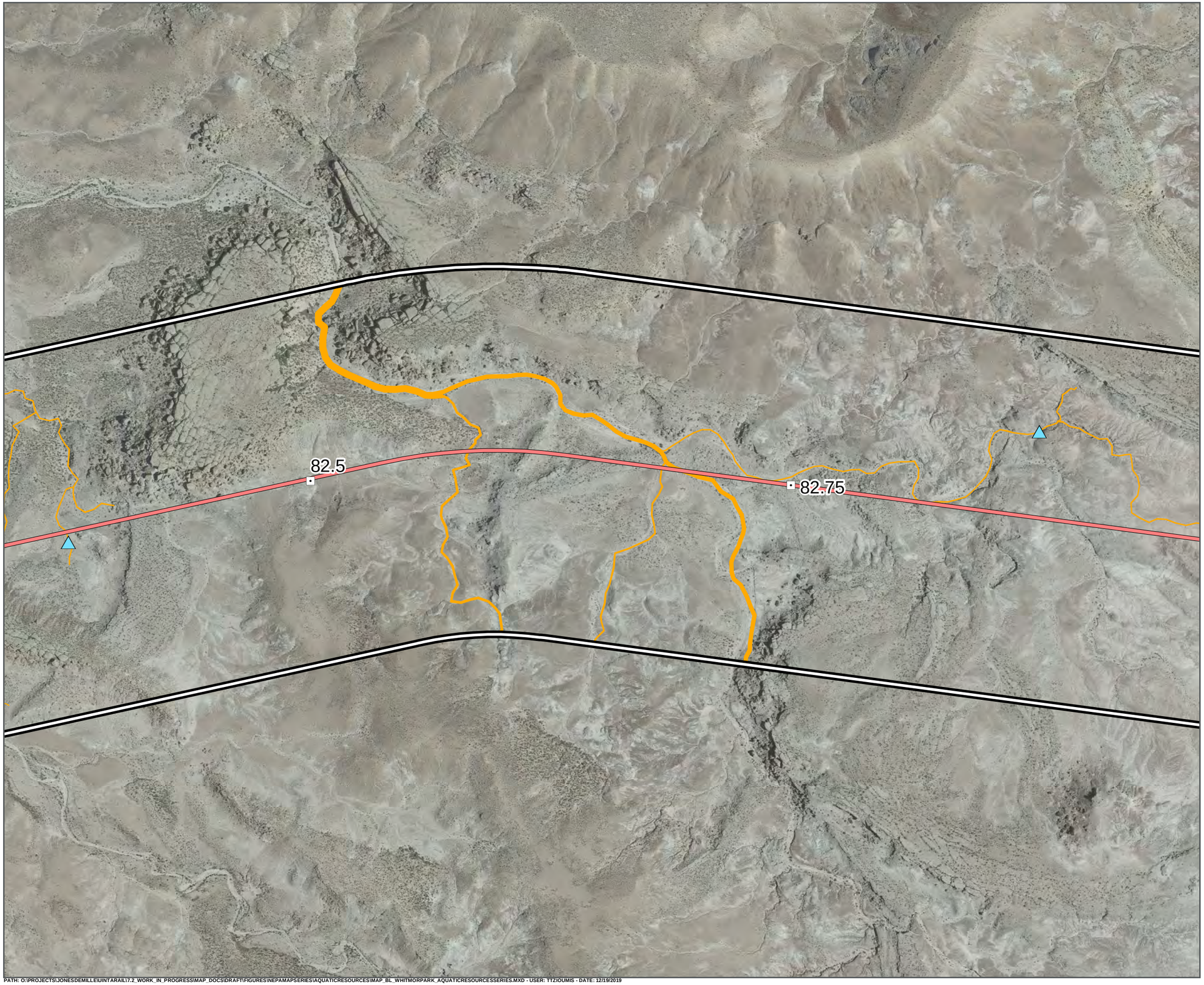
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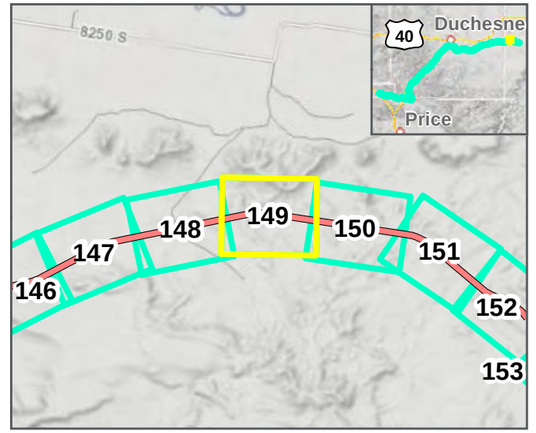
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1 inch = 250 Feet

DATA SOURCES:
HDR Field Work & Engineering 2019
Utah Google Imagery Basemap (2013-2015)
COODINATE SYSTEM:
Utah State Plane

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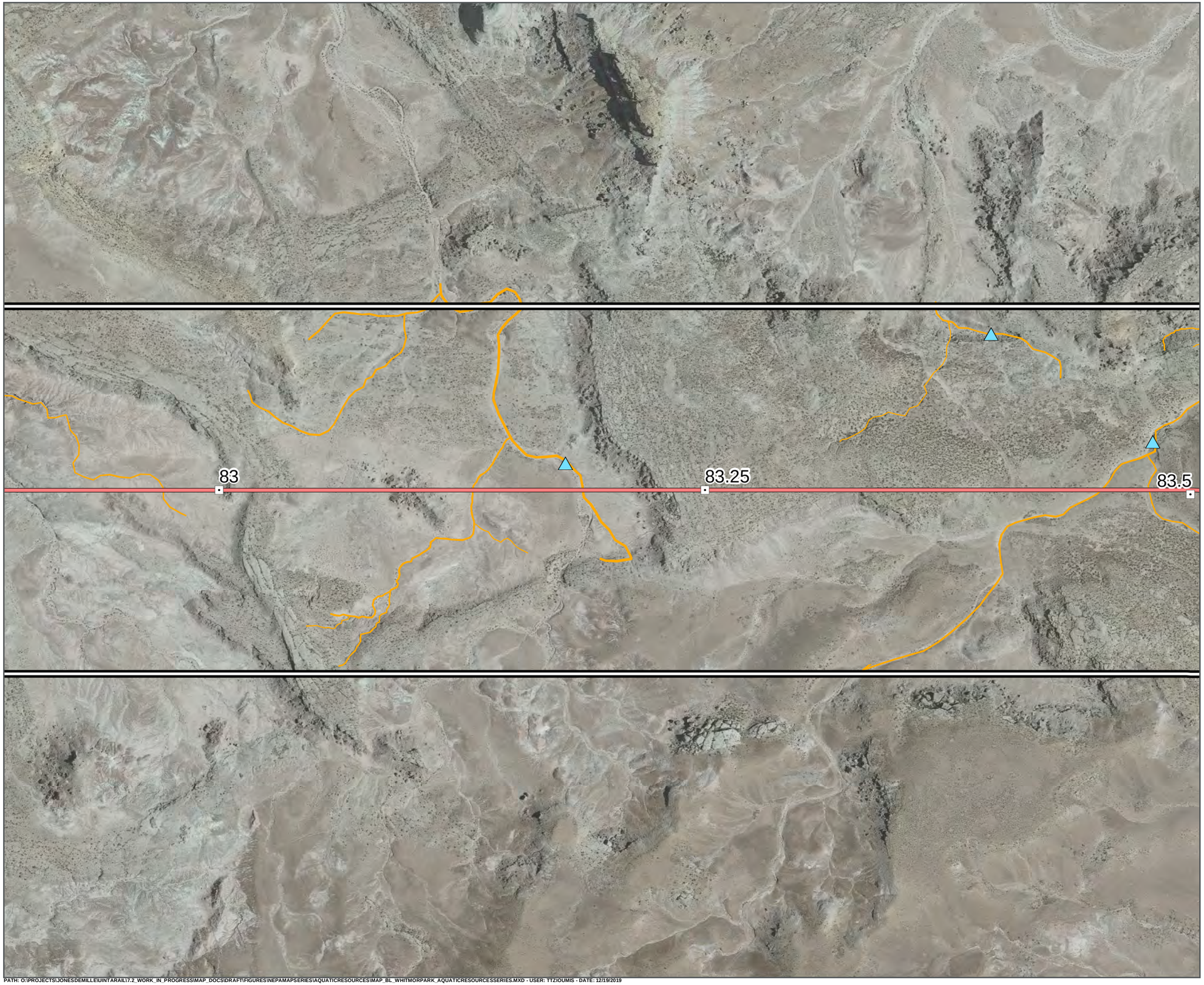
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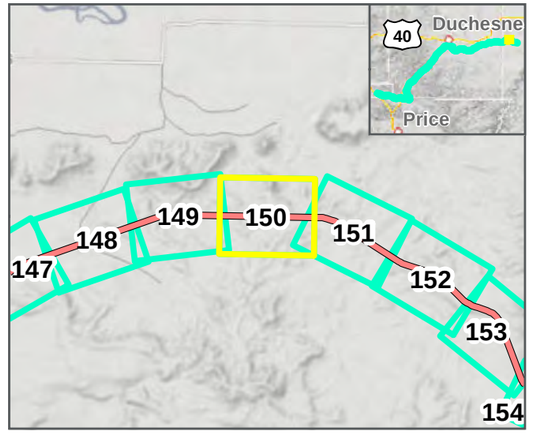
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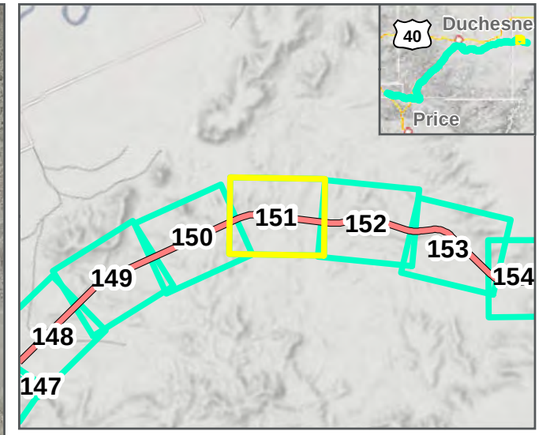
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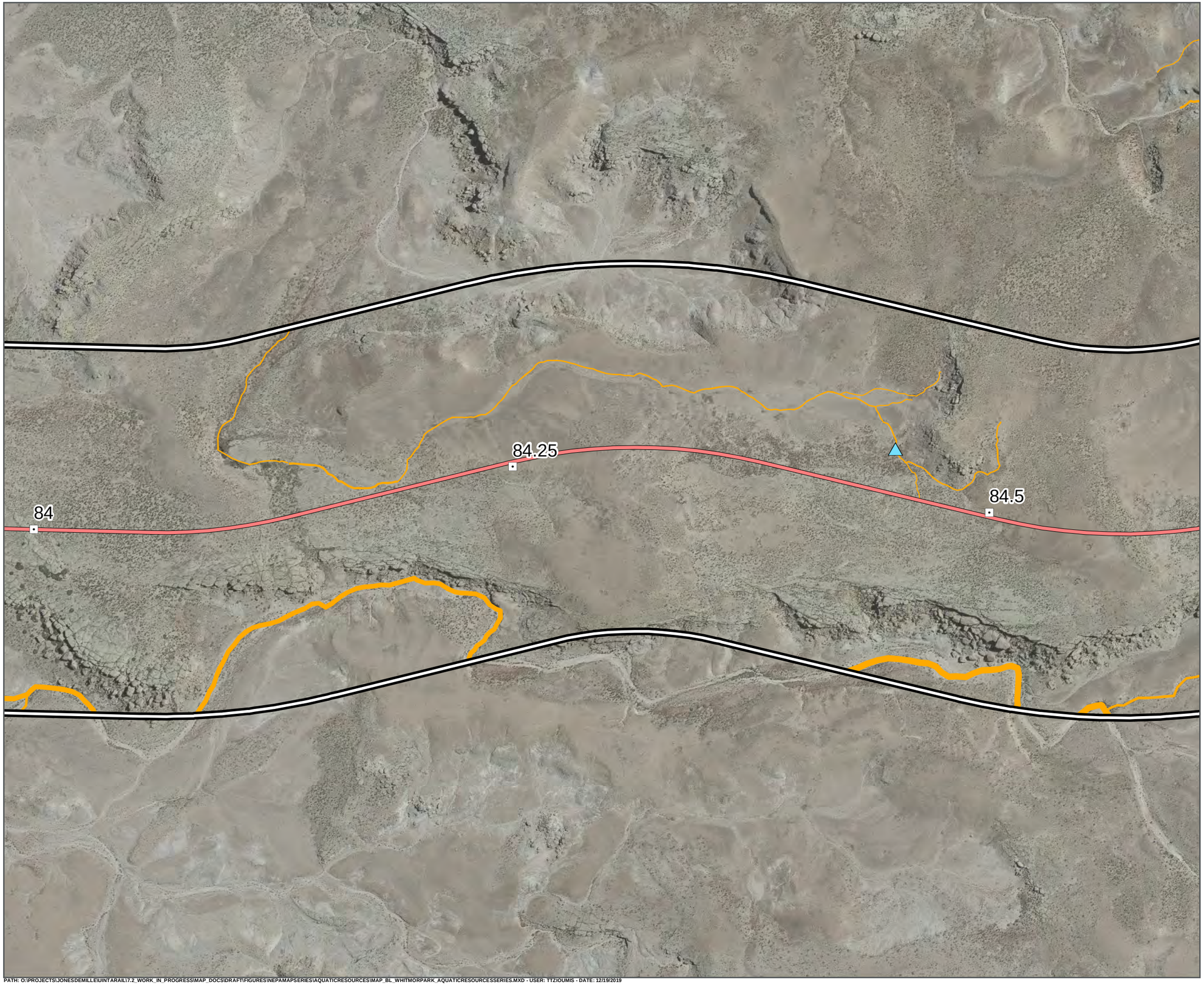
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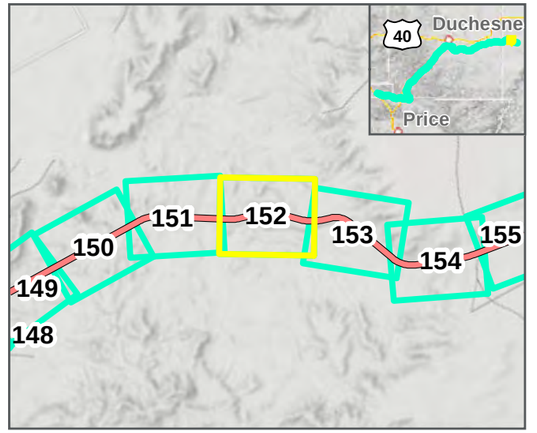
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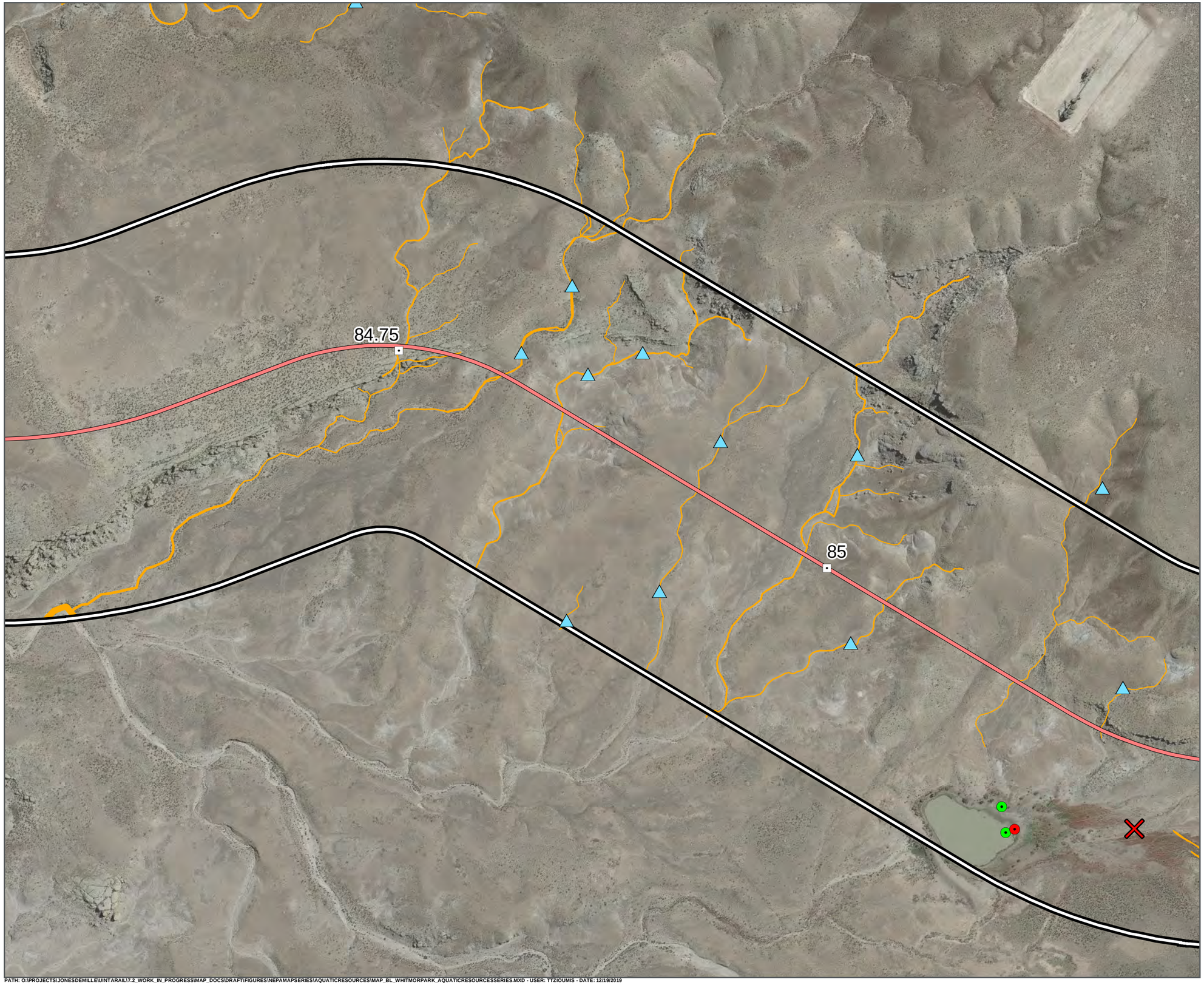
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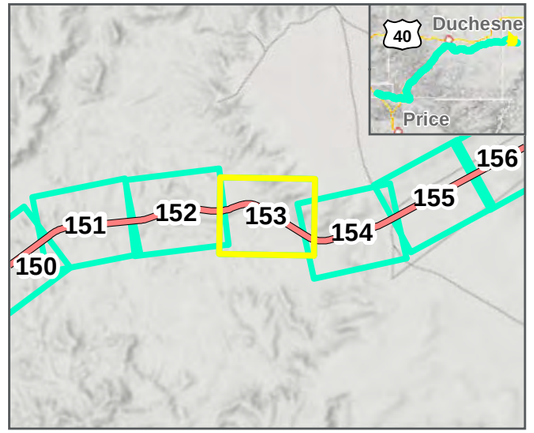
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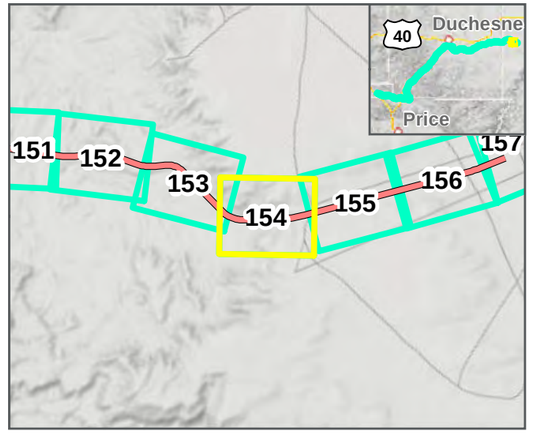
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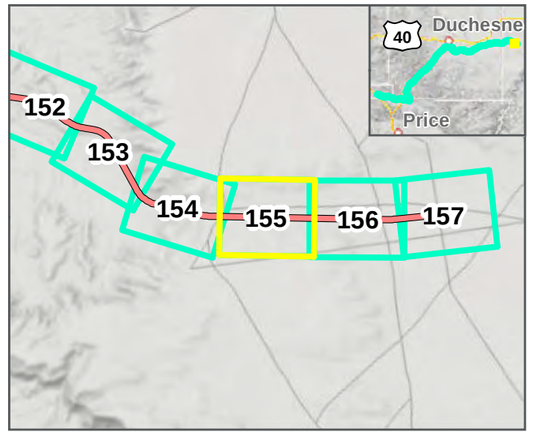
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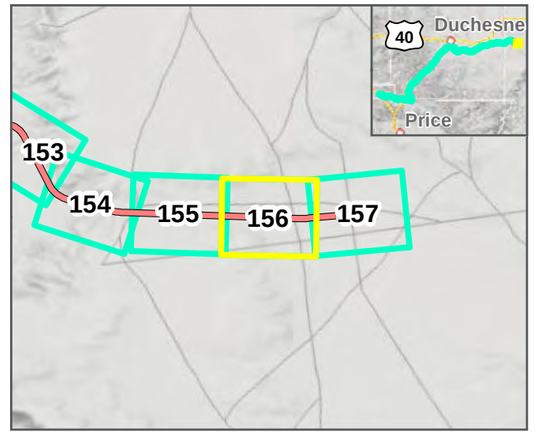
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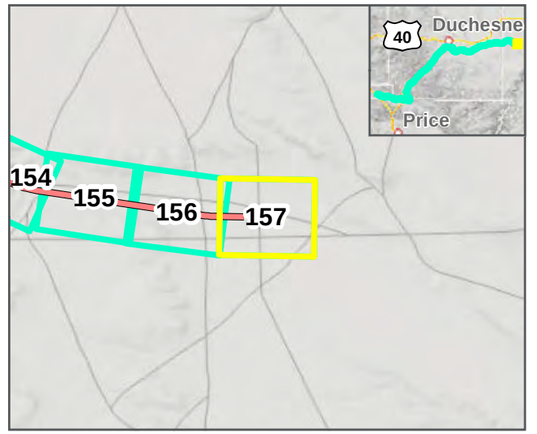
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APPENDIX D

List of Plant Species Observed

Appendix D. List of Plant Species Observed during Field Surveys

Scientific Name[a]	Common Name[b]	Arid West Wetland Status[c]	Western Mountains Wetland Status[c]	Native to Utah?[d]
Adoxaceae – Adoxa Family				
Sambucus racemosa	red elderberry	FACU	FACU	Yes
Amaranthaceae – Amaranth Family				
Atriplex canescens var. *canescens*	fourwing saltbush	UPL	UPL	Yes
Atriplex confertifolia	shadscale saltbush	UPL	UPL	Yes
Atriplex corrugata	mat saltbush	UPL	UPL	Yes
Atriplex gardneri	Gardner's saltbush	UPL	UPL	Yes
Bassia hyssopifolia	fivehorn smotherweed	FACU	FACU	No
Chenopodium album	lambsquarters	FACU	FACU	Both
Grayia spinosa	spiny hopsage	UPL	UPL	Yes
Halogeton glomeratus	saltlover	UPL	UPL	No
Krascheninnikovia lanata	winterfat	UPL	UPL	Yes
Monolepis nuttalliana	Nuttall's povertyweed	FAC	FAC	Yes
Salsola tragus	prickly Russian thistle	FACU	FACU	No
Zuckia brandegeei	siltbush	UPL	UPL	Yes
Amaryllidaceae – Amaryllis Family				
Allium textile	textile onion	UPL	UPL	Yes
Apiaceae – Carrot Family				
Cymopterus cf. *purpureus*	purple springparsley	UPL	UPL	Yes
Cymopterus purpurascens	widewing springparsley	UPL	UPL	Yes
Apocynaceae – Dogbane Family				
Asclepias latifolia	broadleaf milkweed	UPL	UPL	Yes
Asclepias speciosa	showy milkweed	FAC	FAC	Yes
Asparagaceae – Asparagus Family				
Triteleia grandiflora	largeflower triteleia	UPL	UPL	Yes
Yucca harrimaniae	Spanish bayonet	UPL	UPL	Yes
Asteraceae – Sunflower Family				
Achillea millefolium	common yarrow	FACU	FACU	Both
Ambrosia artemisiifolia	annual ragweed	FACU	FACU	Both
Antennaria dimorpha	low pussytoes	UPL	UPL	Yes
Antennaria parvifolia	small-leaf pussytoes	UPL	UPL	Yes
Arctium lappa	greater burdock	UPL	UPL	No

Scientific Name[a]	Common Name[b]	Arid West Wetland Status[c]	Western Mountains Wetland Status[c]	Native to Utah?[d]
Artemisia arbuscula	little sagebrush	UPL	UPL	Yes
Artemisia cana	silver sagebrush	FACU	FACU	Yes
Artemisia dracunculus	tarragon	UPL	UPL	Yes
Artemisia frigida	prairie sagewort	UPL	UPL	Yes
Artemisia ludoviciana var. *incompta*	white sagebrush	FACU	FACU	Yes
Artemisia nova	black sagebrush	UPL	UPL	Yes
Artemisia spinescens	bud sagebrush	UPL	UPL	Yes
Artemisia tridentata var. *tridentata*	basin big sagebrush	UPL	UPL	Yes
Carduus nutans	nodding plumeless thistle	FACU	UPL	No
Chaetopappa ericoides	rose heath	UPL	UPL	Yes
Chamaechaenactis scaposa	fullstem	UPL	UPL	Yes
Chrysothamnus viscidiflorus var. *lanceolatus*	yellow rabbitbrush	UPL	UPL	Yes
Chrysothamnus viscidiflorus var. *viscidiflorus*	yellow rabbitbrush	UPL	UPL	Yes
Cirsium arvense	Canada thistle	FACU	FAC	No
Cirsium cf. *clavatum*	fish lake thistle	UPL	UPL	Yes
Conyza canadensis	Canadian horseweed	UPL	UPL	Yes
Dieteria canescens var. *canescens*	hoary tansyaster	UPL	FAC	Yes
Ericameria nauseosa var. *salicifolia*	rubber rabbitbrush	UPL	UPL	Yes
Ericameria parryi var. *attenuata*	Parry's rabbitbrush	UPL	UPL	Yes
Erigeron engelmannii	Engelmann's fleabane	UPL	UPL	Yes
Gnaphalium palustre	western marsh cudweed	FACW	FACW	Yes
Gutierrezia sarothrae	broom snakeweed	UPL	UPL	Yes
Hymenopappus filifolius	fineleaf hymenopappus	UPL	UPL	Yes
Iva axillaris	povertyweed	FAC	FAC	Yes
Lactuca serriola	prickly lettuce	FACU	FACU	No
Lorandersonia linifolia	spearleaf rabbitbrush	FAC	FAC	Yes
Malacothrix torreyi	Torrey's desertdandelion	UPL	UPL	Yes
Mulgedium pulchellum	blue lettuce	UPL	UPL	Yes
Parthenium ligulatum	Colorado feverfew	UPL	UPL	Yes
Pyrrocoma lanceolata var. *lanceolata*	lanceleaf goldenweed	FAC	FAC	Yes
Solidago canadensis	Canada goldenrod	FACU	FACU	Yes
Symphyotrichum ascendens	western aster	FAC	FACU	Yes
Symphyotrichum bracteolatum	Eaton's aster	FAC	FAC	Yes
Symphyotrichum eatonii	Eaton's aster	UPL	UPL	Yes
Symphyotrichum spathulatum var. *spathulatum*	western mountain aster	FAC	FAC	Yes
Taraxacum officinale	common dandelion	FACU	FACU	Both
Tetradymia nuttallii	Nuttall's horsebrush	UPL	UPL	Yes

Scientific Name[a]	Common Name[b]	Arid West Wetland Status[c]	Western Mountains Wetland Status[c]	Native to Utah?[d]
Tetradymia spinosa	shortspine horsebrush	UPL	UPL	Yes
Tetraneuris acaulis var. *caespitosa*	caespitose four-nerve daisy	UPL	UPL	Yes
Thelesperma subnudum var. *subnudum*	Navajo tea	UPL	UPL	Yes
Townsendia mensana	table Townsend daisy	UPL	UPL	Yes
Townsendia strigosa	hairy Townsend daisy	UPL	UPL	Yes
Viguiera multiflora var. *nevadensis*	Nevada goldeneye	UPL	UPL	Yes
Xanthium strumarium	rough cocklebur	FAC	FAC	Yes
Berberidaceae – Barberry Family				
Berberis repens	creeping barberry	UPL	UPL	Yes
Betulaceae – Birch Family				
Alnus incana	gray alder	FACW	FACW	Yes
Boraginaceae – Borage Family				
Cryptantha flavoculata	roughseed cryptantha	UPL	UPL	Yes
Cryptantha gracilis	narrowstem cryptantha	UPL	UPL	Yes
Cryptantha kelseyana	Kelsey's cryptantha	UPL	UPL	Yes
Cryptantha sericea	silky cryptantha	UPL	UPL	Yes
Cynoglossum officinale	gypsyflower	FACU	FACU	No
Lappula occidentalis	flatspine stickseed	UPL	UPL	Yes
Mertensia lanceolata var. *nivalis*	prairie bluebells	UPL	UPL	Yes
Nama densum	leafy nama	UPL	UPL	Yes
Phacelia crenulata var. *corrugata*	cleftleaf wildheliotrope	UPL	UPL	Yes
Brassicaceae – Mustard Family				
Alyssum desertorum	desert madwort	UPL	UPL	No
Boechera pinetorum	Holboell rockcress	UPL	UPL	Yes
Capsella bursa-pastoris	shepherd's purse	FACU	FACU	No
Caulanthus crassicaulis	thickstem wild cabbage	UPL	UPL	Yes
Chorispora tenella	crossflower	UPL	UPL	No
Descurainia pinnata var. *nelsonii*	Nelson's tansymustard	UPL	UPL	Yes
Lepidium draba	whitetop	UPL	UPL	No
Lepidium latifolium	broadleaved pepperweed	FAC	FAC	No
Lepidium perfoliatum	clasping pepperweed	FACU	FACU	No
Lepidium virginicum	Virginia pepperweed	FACU	FACU	Yes
Physaria acutifolia var. *acutifolia*	sharpleaf twinpod	UPL	UPL	Yes
Physaria intermedia	mid bladderpod	UPL	UPL	Yes
Schoenocrambe linifolia	flaxleaf plainsmustard	UPL	UPL	Yes
Sisymbrium altissimum	tall tumblemustard	FACU	FACU	No
Sisymbrium irio	London rocket	UPL	UPL	No

Scientific Name[a]	Common Name[b]	Arid West Wetland Status[c]	Western Mountains Wetland Status[c]	Native to Utah?[d]
Stanleya viridiflora	green princesplume	UPL	UPL	Yes
Streptanthella longirostris	longbeak streptanthella	UPL	UPL	Yes
Streptanthus cordatus	heartleaf twistflower	UPL	UPL	Yes
Thelypodiopsis elegans	Westwater tumblemustard	UPL	UPL	Yes
Cactaceae – Cactus Family				
Echinocereus engelmannii	Engelmann's hedgehog cactus	UPL	UPL	Yes
Opuntia fragilis	brittle pricklypear	UPL	UPL	Yes
Opuntia polyacantha var. *polyacantha*	hairspine pricklypear	UPL	UPL	Yes
Pediocactus simpsonii	mountain ball cactus	UPL	UPL	Yes
Sclerocactus brevispinus	Pariette cactus	UPL	UPL	Yes
Caprifoliaceae – Honeysuckle Family				
Symphoricarpos occidentalis	western snowberry	FAC	FAC	Yes
Caryophyllaceae – Pink Family				
Eremogone eastwoodiae var. *eastwoodiae*	Eastwood's sandwort	UPL	UPL	Yes
Chenopodiaceae – Goosefoot Family				
Suaeda calceoliformis	Pursh seepweed	FACW	FACW	Yes
Cupressaceae – Cypress Family				
Juniperus communis	common juniper	FACU	UPL	Yes
Juniperus osteosperma	Utah juniper	UPL	UPL	Yes
Cyperaceae – Sedge Family				
Bolboschoenus cf. *fluviatilis*	river bulrush	UPL	UPL	Yes
Carex cf. *occidentalis*	western sedge	UPL	UPL	Yes
Carex nebrascensis	Nebraska sedge	OBL	OBL	Yes
Carex parryana	Parry's sedge	FAC	FACW	Yes
Carex utriculata	Northwest Territory sedge	OBL	OBL	Yes
Eleocharis palustris	common spikerush	OBL	OBL	Yes
Schoenoplectus acutus	hardstem bulrush	OBL	OBL	Yes
Schoenoplectus americanus	chairmaker's bulrush	OBL	OBL	Yes
Elaeagnaceae – Oleaster Family				
Elaeagnus angustifolia	Russian olive	FAC	FAC	No
Ephedraceae – Ephedra Family				
Ephedra torreyana	Torrey's jointfir	UPL	UPL	Yes
Ephedra viridis	mormon tea	UPL	UPL	Yes
Equisetaceae – Horsetail Family				
Equisetum arvense	field horsetail	FAC	FAC	Yes
Equisetum hyemale	scouringrush horsetail	FACW	FACW	Yes

Scientific Name[a]	Common Name[b]	Arid West Wetland Status[c]	Western Mountains Wetland Status[c]	Native to Utah?[d]
Equisetum laevigatum	smooth horsetail	FACW	FACW	Yes
Euphorbiaceae – Spurge Family				
Euphorbia cf. *brachycera*	horned spurge	UPL	UPL	Yes
Fabaceae – Legume Family				
Astragalus australis	Indian milkvetch	UPL	UPL	Yes
Astragalus bisulcatus var. *major*	twogrooved milkvetch	UPL	UPL	Yes
Astragalus cf. *duchesnensis*	Duchesne milkvetch	UPL	UPL	Yes
Astragalus cf. *megacarpus*	great bladdery milkvetch	UPL	UPL	Yes
Astragalus chamaeleuce	cicada milkvetch	UPL	UPL	Yes
Astragalus convallarius var. *convallarius*	lesser rushy milkvetch	UPL	UPL	Yes
Astragalus pubentissimus var. *peabodianus*	Green River milkvetch	UPL	UPL	Yes
Glycyrrhiza lepidota	American licorice	FAC	FAC	Yes
Hedysarum boreale var. *boreale*	Utah sweetvetch	UPL	UPL	Yes
Lupinus argenteus var. *argentatus*	silvery lupine	UPL	UPL	Yes
Melilotus officinalis	sweetclover	FACU	FACU	No
Oxytropis sericea	white locoweed	UPL	UPL	Yes
Gentianaceae – Gentian Family				
Gentiana affinis	pleated gentian	FACU	FACU	Yes
Gentiana parryi	Parry's gentian	FAC	FAC	Yes
Gentianella amarella	autumn dwarf gentian	UPL	UPL	Yes
Grossulariaceae – Gooseberry Family				
Ribes aureum	golden currant	FAC	FAC	Yes
Ribes cereum	wax currant	UPL	UPL	Yes
Iridaceae – Iris Family				
Iris missouriensis	Rocky Mountain iris	UPL	UPL	Yes
Sisyrinchium cf. *idahoense*	Idaho blue-eyed grass	FACW	FACW	Yes
Juncaceae – Rush Family				
Juncus balticus	mountain rush	FACW	FACW	Yes
Juncus bufonius	toad rush	FACW	FACW	Yes
Juncus longistylis	longstyle rush	FACW	FACW	Yes
Juncaginaceae – Arrow–Grass Family				
Triglochin maritima	seaside arrowgrass	OBL	OBL	Yes
Lamiaceae – Mint Family				
Mentha arvensis	wild mint	FACW	FACW	Yes
Liliaceae – Lily Family				
Calochortus nuttallii	sego lily	UPL	UPL	Yes

Scientific Name[a]	Common Name[b]	Arid West Wetland Status[c]	Western Mountains Wetland Status[c]	Native to Utah?[d]
Linaceae – Flax Family				
Linum perenne	blue flax	UPL	UPL	No
Loasaceae – Loasa Family				
Mentzelia albicaulis	whitestem blazingstar	UPL	UPL	Yes
Malvaceae – Mallow Family				
Sidalcea cf. *neomexicana*	salt spring checkerbloom	FACW	FACW	Yes
Sphaeralcea ambigua	desert globemallow	UPL	UPL	Yes
Sphaeralcea coccinea	scarlet globemallow	UPL	UPL	Yes
Nyctaginaceae – Four O'clock Family				
Abronia fragrans	snowball sand verbena	UPL	UPL	Yes
Onagraceae – Evening Primrose Family				
Chylismia scapoidea var. *scapoidea*	Paiute suncup	UPL	UPL	Yes
Epilobium glaberrimum	glaucus wilowherb	FACW	FACW	Yes
Oenothera caespitosa var. *marginata*	tufted evening primrose	UPL	UPL	Yes
Oenothera pallida	pale evening primrose	UPL	UPL	Yes
Orobanchaceae – Broomrape Family				
Castilleja chromosa	northwestern Indian paintbrush	UPL	UPL	Yes
Castilleja flava	yellow Indian paintbrush	UPL	UPL	Yes
Cordylanthus kingii var. *densiflorus*	King's bird-beak	UPL	UPL	Yes
Orthocarpus luteus	yellow owl's-clover	FACU	FACU	Yes
Orthocarpus tolmiei	Tolmie's owl's-clover	UPL	UPL	Yes
Pedicularis centranthera	dwarf lousewort	UPL	UPL	Yes
Pinaceae – Pine Family				
Picea pungens	blue spruce	FAC	FAC	Yes
Pinus edulis	twoneedle pinyon	UPL	UPL	Yes
Pseudotsuga menziesii	Douglas-fir	FACU	FACU	Yes
Plantaginaceae – Plantain Family				
Penstemon pachyphyllus var. *pachyphyllus*	thickleaf beardtongue	UPL	UPL	Yes
Plantago patagonica	woolly plantain	UPL	UPL	Yes
Poaceae – Grass Family				
Agropyron cristatum	crested wheatgrass	UPL	UPL	No
Agrostis gigantea	redtop	FACW	FAC	No
Agrostis stolonifera	creeping bentgrass	FACW	FAC	No
Alopecurus pratensis	meadow foxtail	FACW	FAC	No
Bouteloua gracilis	blue grama	UPL	UPL	Yes
Bromus inermis	smooth brome	FACU	UPL	Both

Scientific Name[a]	Common Name[b]	Arid West Wetland Status[c]	Western Mountains Wetland Status[c]	Native to Utah?[d]
Bromus tectorum	cheatgrass	UPL	UPL	No
Dactylis glomerata	orchardgrass	FACU	FACU	No
Diplachne fusca ssp. fascicularis	Malabar sprangletop	FACW	FACW	Yes
Distichlis spicata	saltgrass	FAC	FACW	Yes
Elymus elymoides	squirreltail	FACU	FACU	Yes
Elymus lanceolatus	thickspike wheatgrass	UPL	FACU	Yes
Eragrostis cf. *pectinacea*	tufted lovegrass	FAC	FAC	Yes
Eremopyrum triticeum	annual wheatgrass	UPL	UPL	No
Festuca cf. *ovina*	sheep fescue	FACU	UPL	No
Festuca pratensis	meadow fescue	FACU	FACU	No
Hilaria jamesii	James' galleta	UPL	UPL	Yes
Hordeum brachyantherum	meadow barley	FACW	FACW	Yes
Hordeum jubatum	foxtail barley	FAC	FAC	Yes
Hordeum pusillum	little barley	FACU	FACU	Yes
Leymus cinereus	basin wildrye	FAC	FAC	Yes
Phalaris arundinacea	reed canarygrass	FACW	FACW	Yes
Phleum pratense	timothy	FACU	FAC	No
Phragmites australis	common reed	FACW	FACW	Both
Poa annua	annual bluegrass	FAC	FAC	No
Poa bulbosa	bulbous bluegrass	FACU	FACU	No
Poa cf. *abrreviatta* var. *pattersonii*	Patterson's bluegrass	FACU	FACU	Yes
Poa fendleriana	muttongrass	UPL	UPL	Yes
Poa palustris	fowl bluegrass	FAC	FAC	Yes
Poa secunda	Sandberg bluegrass	FACU	FACU	Yes
Polypogon monspeliensis	annual rabbitsfoot grass	FACW	FACW	No
Pseudoroegneria spicata	bluebunch wheatgrass	UPL	UPL	Yes
Puccinellia cf. *nuttalliana*	Nuttall's alkaligrass	FACW	FACW	Yes
Setaria viridis	green bristlegrass	UPL	UPL	No
Sporobolus airoides	alkali sacaton	FAC	FAC	Yes
Stipa comata	needle and thread	UPL	UPL	Yes
Stipa hymenoides	Indian ricegrass	UPL	UPL	Yes
Stipa lettermanii	Letterman's needlegrass	UPL	UPL	Yes
Thinopyrum intermedium	intermediate wheatgrass	UPL	UPL	No
Polemoniaceae – Phlox Family				
Aliciella leptomeria	sand gilia	UPL	UPL	Yes
Eriastrum diffusum	miniature woollystar	UPL	UPL	Yes
Gilia inconspicua	shy gilia	UPL	UPL	Yes

Scientific Name[a]	Common Name[b]	Arid West Wetland Status[c]	Western Mountains Wetland Status[c]	Native to Utah?[d]
Ipomopsis congesta var. *congesta*	ballhead ipomopsis	UPL	UPL	Yes
Ipomopsis polycladon	manybranched ipomopsis	UPL	UPL	Yes
Phlox austromontana var. *austromontana*	mountain phlox	UPL	UPL	Yes
Phlox hoodii	spiny phlox	UPL	UPL	Yes
Phlox longifolia	longleaf phlox	UPL	UPL	Yes
Polygonaceae – Buckwheat Family				
Eriogonum alatum	winged buckwheat	UPL	UPL	Yes
Eriogonum batemanii var. *batemanii*	Bateman's buckwheat	UPL	UPL	Yes
Eriogonum brevicaule var. *laxifolium*	shortstem buckwheat	UPL	UPL	Yes
Eriogonum cernuum	nodding buckwheat	UPL	UPL	Yes
Eriogonum corymbosum var. *corymbosum*	crispleaf buckwheat	UPL	UPL	Yes
Eriogonum microthecum var. *simpsonii*	Simpson's buckwheat	UPL	UPL	Yes
Eriogonum ovalifolium	cushion buckwheat	FACU	FACU	Yes
Eriogonum shockleyi	Shockley's buckwheat	UPL	UPL	Yes
Eriogonum umbellatum var. *subaridum*	suplhur-flower buckwheat	UPL	UPL	Yes
Polygonum argyrocoleon	silversheath knotweed	FAC	FAC	No
Polygonum minimum	broadleaf knotweed	FACU	FACU	Yes
Rumex crispus	curly dock	FAC	FAC	No
Rumex occidentalis	western dock	FACW	FACW	Yes
Rumex stenophyllus	narrowleaf dock	FACW	FACW	No
Ranunculaceae – Buttercup Family				
Aquilegia cf. *flavescens*	yellow columbine	UPL	UPL	Yes
Clematis cf. *columbiana*	rock clematis	UPL	UPL	Yes
Ranunculus cf. *acris*	tall buttercup	FACW	FAC	Both
Ranunculus cymbalaria	alkali buttercup	OBL	OBL	Yes
Ranunculus testiculatus	curveseed butterwort	UPL	UPL	No
Rosaceae – Rose Family				
Amelanchier alnifolia	Saskatoon serviceberry	FACU	FACU	Yes
Amelanchier utahensis	Utah serviceberry	FACU	UPL	Yes
Cercocarpus ledifolius	curl-leaf mountain mahoganyq	UPL	UPL	Yes
Cercocarpus montanus	alderleaf mountain mahogany	UPL	UPL	Yes
Dasiphora fruticosa	shrubby cinquefoil	FAC	FAC	Yes
Geum macrophyllum	largeleaf avens	FACW	FAC	Yes
Potentilla cf. *rubricaulis*	RockyMountain cinquefoil	FACU	FACU	Yes
Potentilla gracilis var. *elmeri*	combleaf cinquefoil	FAC	FAC	Yes
Prunus virginiana	chokecherry	FAC	FACU	Yes
Rosa woodsii	Wood's rose	FACU	FACU	Yes

Scientific Name[a]	Common Name[b]	Arid West Wetland Status[c]	Western Mountains Wetland Status[c]	Native to Utah?[d]
Salicaceae – Willow Family				
Populus angustifolia	narrowleaf cottonwood	FACW	FACW	Yes
Populus fremontii	Fremont cottonwood	FAC	FAC	Yes
Salix bebbiana	Bebb willow	FACW	FACW	Yes
Salix cf. *laevigata*	red willow	FACW	FACW	Yes
Salix cf. *lucida*	shining willow	FACW	FACW	Yes
Salix exigua	narrowleaf willow	FACW	FACW	Yes
Sarcobataceae – Greasewood Family				
Sarcobatus vermiculatus	greasewood	FACU	FACU	Yes
Scrophulariaceae – Figwort Family				
Verbascum thapsus	common mullein	FACU	FACU	No
Solanaceae – Nightshade Family				
Lycium torreyi	Torrey wolfberry	FAC	FACU	Yes
Tamaricaceae – Tamarisk Family				
Tamarix cf. *parviflora*	smallflower tamarisk	FAC	FAC	No
Tamarix chinensis	five-stamen tamarisk	FAC	FAC	No
Typhaceae – Cattail Family				
Typha domingensis	southern cattail	OBL	OBL	Yes
Typha latifolia	broadleaf cattail	OBL	OBL	Yes
Urticaceae – Nettle Family				
Urtica dioica	stinging nettle	FAC	FAC	Both
Violaceae – Violet Family				
Viola nuttallii	Nuttall's violet	UPL	UPL	Yes

[a] cf.: cf. describes a specimen that is difficult to identify due to practical difficulties.

[b] Common-name conventions according to USDA NRCS Plants Database (https://plants.usda.gov).

[c] Indicator status as assigned for the *Arid West and Western Mountains, Valleys & Coast in the National Wetland Plant List* (Lichvar and others 2016): FAC = facultative; FACU = facultative upland; FACW = facultative wetland; UPL = upland plants (or not listed species assumed to be upland); OBL = obligate wetland.

[d] Native status according to USDA NRCS Plants Database (https://plants.usda.gov).

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APPENDIX E

NRCS Soil Resources

APPENDIX E-1

Soil Types and Associated Hydrologic Soil Groups, Hydric Ratings, and Acreage in Each Study Area

Appendix E-1. Soil Types and Associated Hydrologic Soil Groups, Hydric Ratings, and Acreage in Each Study Area

Soil Type	Hydrologic Soil Group[a]	Hydric Rating[b]	Study Area					
			Indian Canyon		Wells Draw		Whitmore Park	
			Acres	%	Acres	%	Acres	%
Aagard-Gilluly-McCadden complex, 10 to 70 percent slopes	C	0.0%	527.5	5.4%	611.6	4.9%	419.1	4.0%
Aagard-Nathale-McCadden complex, 5 to 50 percent slopes, very stony	C	0.0%	37.3	0.4%	11.6	0.1%	37.3	0.4%
Avintaquin, extremely stony-Floak-Paunsaugunt, very stony complex, 8 to 15 percent slopes	C	0.0%	8.3	0.1%	8.3	0.1%	8.3	0.1%
Badland-Rock outcrop complex, 1 to 100 percent slopes	D	0.0%	81.7	0.8%	32.6	0.3%	81.7	0.8%
Beje-Trag complex	D	0.0%	80.0	0.8%	80.3	0.6%	0.0	0.0%
Bigpack loam, 2 to 15 percent slopes	B	0.0%	0.0	0.0%	8.1	0.1%	0.0	0.0%
Blackston loam, 0 to 6 percent slopes	B	0.0%	26.5	0.3%	0.0	0.0%	26.5	0.3%
Boreham loam, 0 to 2 percent slopes	B	0.0%	67.1	0.7%	68.4	0.5%	67.1	0.6%
Boreham loam, 0 to 4 percent slopes	B	0.0%	327.7	3.4%	939.2	7.5%	327.7	3.1%
Breezy-Bunkwater-Hickerson complex, 1 to 6 percent slopes	C	0.0%	409.3	4.2%	0.0	0.0%	383.7	3.6%
Brycan loam, 3 to 20 percent slopes	B	0.0%	14.1	0.1%	14.1	0.1%	16.7	0.2%
Cadrina, extremely stony-Casmos-Rock outcrop complex, 2 to 40 percent slopes	D	0.0%	121.5	1.3%	174.4	1.4%	122.2	1.2%
Cadrina, extremely stony-Rock outcrop complex, 4 to 50 percent slopes	D	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Cadrina-Badland-Rock outcrop complex, 25 to 50 percent slopes	D	0.0%	0.0	0.0%	22.7	0.0%	0.0	0.0%
Cakehill sandy loam, 2 to 5 percent slopes	C	0.0%	0.0	0.0%	10.9	0.0%	0.0	0.0%
Cedarknoll-Tabyago-Whitesage association, 2 to 25 percent slopes	C	0.0%	0.0	0.0%	912.9	7.3%	0.0	0.0%
Cheeta-Rock outcrop complex, 30 to 80 percent slopes	D	0.0%	117.1	1.2%	149.9	1.2%	117.1	1.1%
Crib loam, 1 to 3 percent slopes	C	0.0%	8.6	0.1%	0.0	0.0%	8.6	0.1%
Crustown-Motto complex, 0 to 25 percent slopes	D	0.0%	245.5	2.5%	132.4	1.1%	245.5	2.3%
Crustown-Motto complex, 2 to 25 percent slopes	D	0.0%	119.7	1.2%	1.0	0.0%	119.7	1.1%
Frandsen-Gullied land complex	C	0.0%	0.0	0.0%	0.0	0.0%	269.6	2.5%

Soil Type	Hydrologic Soil Group[a]	Hydric Rating[b]	Study Area					
			Indian Canyon		Wells Draw		Whitmore Park	
			Acres	%	Acres	%	Acres	%
Gerst-Walknolls, very stony complex, 10 to 60 percent slopes	D	0.0%	0.0	0.0%	730.4	5.9%	0.0	0.0%
Gompers-Rock outcrop-Tabyago, extremely bouldery complex, 25 to 80 percent slopes	D	0.0%	68.6	0.7%	14.8	0.1%	68.6	0.6%
Gremo-Kyune-Rock outcrop complex, 10 to 60 percent slopes	C	0.0%	159.5	1.6%	159.4	1.3%	184.7	1.7%
Greybull-Utaline-Badland complex, 4 to 40 percent slopes	C	0.0%	202.5	2.1%	6.8	0.1%	202.5	1.9%
Greybull-Utaline-Badland complex, 8 to 50 percent slopes	C	3.0%	67.7	0.7%	126.6	1.0%	67.7	0.6%
Grunnell-Pariette-Persayo complex, 2 to 15 percent slopes	D	0.0%	354.9	3.7%	0.0	0.0%	284.9	2.7%
Howbert-Beje-Kyune complex, 4 to 40 percent slopes, very stony	B	0.0%	165.7	1.7%	165.7	1.3%	74.6	0.7%
Jenrid sandy loam, 0 to 2 percent slopes	B	0.0%	0.0	0.0%	50.8	0.4%	0.0	0.0%
Jenrid sandy loam, 0 to 4 percent slopes	B	0.0%	103.0	1.1%	50.0	0.4%	103.0	1.0%
Kaiar-Walknolls-Honlu complex, 2 to 15 percent slopes	B	0.0%	59.7	0.6%	0.0	0.0%	250.5	2.4%
Kamack, moderately deep-Paunsaugunt-Senchert complex, 25 to 70 percent slopes	C	0.0%	47.9	0.5%	0.0	0.0%	47.9	0.5%
Kilroy loam, 1 to 4 percent slopes	C	0.0%	0.0	0.0%	11.2	0.1%	0.0	0.0%
Kilroy loam, 1 to 8 percent slopes	C	0.0%	58.2	0.6%	72.1	0.6%	58.2	0.5%
Kyune, extremely stony-Tycreek-Clyl, extremely stony complex, 4 to 25 percent slopes	C	0.0%	178.7	1.8%	178.9	1.4%	188.3	1.8%
Kyune-Weed-Paunsaugunt complex, 10 to 60 percent slopes, very stony	C	0.0%	24.1	0.2%	24.2	0.2%	143.0	1.3%
Leebench sandy loam, 2 to 8 percent slopes	C	0.0%	2.9	0.0%	102.4	0.8%	2.9	0.0%
Leeko loam, 0 to 4 percent slopes	C	0.0%	1.2	0.0%	87.0	0.7%	1.2	0.0%
Leeko-Boreham complex, 0 to 4 percent slopes	D	0.0%	0.0	0.0%	103.2	0.8%	0.0	0.0%
Lostminer-McCadden-Bickmore complex, 4 to 40 percent slopes	C	0.0%	25.4	0.3%	19.5	0.2%	25.4	0.2%
Mikim loam, 3 to 5 percent slopes	C	0.0%	40.9	0.4%	26.4	0.2%	40.9	0.4%
Molen-Walknolls-Gerst complex, 3 to 20 percent slopes	D	0.0%	145.0	1.5%	0.0	0.0%	72.9	0.7%
Motto-Muff-Rock outcrop complex, 2 to 25 percent slopes	D	0.0%	259.1	2.7%	125.5	1.0%	259.1	2.4%

Soil Type	Hydrologic Soil Group[a]	Hydric Rating[b]	Study Area					
			Indian Canyon		Wells Draw		Whitmore Park	
			Acres	%	Acres	%	Acres	%
Motto-Rock outcrop complex, 2 to 25 percent slopes	D	0.0%	87.9	0.9%	156.8	1.2%	87.9	0.8%
Muff gravelly sandy loam, 2 to 8 percent slopes	D	0.0%	1.0	0.0%	19.8	0.2%	1.0	0.0%
Nakoy loamy fine sand, 1 to 5 percent slopes	A	0.0%	64.8	0.7%	64.8	0.5%	64.8	0.6%
No Digital Data Available	Not applicable	0.0%	1,181.7	12.2%	1,103.9	8.8%	1249.1	11.7%
Osote-Winspect complex, 2 to 20 percent slopes	C	0.0%	421.2	4.3%	454.5	3.6%	767.8	7.2%
Pariette gravelly sandy loam, 2 to 8 percent slopes	C	0.0%	111.2	1.1%	0.0	0.0%	111.2	1.0%
Pathead, very stony-Minnimaud-Saddlehorse, extremely bouldery association, 20 to 60 percent slopes	D	0.0%	0.9	0.0%	0.9	0.0%	0.0	0.0%
Pathead-Averett-Modo association, 40 to 70 percent slopes, very stony	C	0.0%	6.4	0.1%	6.4	0.1%	6.4	0.1%
Pathead-Paunsaugunt-Gompers complex, 40 to 80 percent slopes	D	0.0%	160.6	1.7%	0.0	0.0%	160.6	1.5%
Paunsaugunt, extremely stony-Helper-Rock outcrop complex, 10 to 50 percent slopes	D	0.0%	3.7	0.0%	3.7	0.0%	3.7	0.0%
Peatross, occasionally flooded-Cookcan, occasionally flooded-Osote complex, 0 to 15 percent slopes	C	20.0%	72.1	0.7%	72.0	0.6%	93.3	0.9%
Pherson-Hickerson complex, 1 to 8 percent slopes	C	0.0%	0.0	0.0%	146.7	1.2%	0.0	0.0%
Rabbitex silt loam, 15 to 50 percent slopes	A	0.0%	0.0	0.0%	0.0	0.0%	23.1	0.2%
Rabbitex-Sowers-Rangecreek complex, 5 to 40 percent slopes	C	0.0%	0.0	0.0%	581.8	4.7%	0.0	0.0%
Rangecreek, very stony-Gompers-Sowers complex, 35 to 80 percent slopes	D	0.0%	0.0	0.0%	424.0	3.4%	0.0	0.0%
Rencot very channery loam, 5 to 50 percent slopes	D	0.0%	0.5	0.0%	42.2	0.3%	0.5	0.0%
Rottulee family-Trag complex	C	0.0%	0.0	0.0%	0.0	0.0%	147.1	1.4%
Saddlehorse-Rock outcrop-Pathead complex, 40 to 80 percent slopes	C	0.0%	0.0	0.0%	222.6	1.8%	0.0	0.0%
Shotnick loamy sand, 0 to 4 percent slopes	A	0.0%	0.0	0.0%	6.3	0.1%	0.0	0.0%
Shotnick-Walkup complex, 0 to 2 percent slopes	A	0.0%	0.0	0.0%	57.7	0.5%	0.0	0.0%

Soil Type	Hydrologic Soil Group[a]	Hydric Rating[b]	Study Area					
			Indian Canyon		Wells Draw		Whitmore Park	
			Acres	%	Acres	%	Acres	%
Shupert-Dancehall, extremely bouldery complex, 1 to 15 percent slopes	C	0.0%	1234.7	12.7%	0.0	0.0%	1234.7	11.6%
Silas loam	C	5.0%	0.0	0.0%	0.0	0.0%	18.7	0.2%
Silas loam, 2 to 15 percent slopes	C	0.0%	72.5	0.7%	120.3	1.0%	26.9	0.3%
Skitzy-Strych complex, 2 to 20 percent slopes	C	0.0%	100.8	1.0%	0.0	0.0%	148.0	1.4%
Smithpond-Montwel-Badland complex, 4 to 15 percent slopes	A	0.0%	0.0	0.0%	267.0	2.1%	0.0	0.0%
Southtwins-Whetrock-Twinnorth complex, 25 to 60 percent slopes	C	0.0%	176.2	1.8%	0.0	0.0%	176.2	1.7%
Sowers-Rabbitex-Tyzut complex, 6 to 40 percent slopes	C	0.0%	0.0	0.0%	292.4	2.3%	0.0	0.0%
Splimo-Gerst complex, 3 to 20 percent slopes	D	0.0%	0.0	0.0%	11.4	0.1%	0.0	0.0%
Tipperary loamy fine sand, 1 to 8 percent slopes	A	0.0%	99.4	1.0%	70.3	0.6%	99.4	0.9%
Toddhill-Jagon-Cedarknoll complex, 2 to 8 percent slopes	D	0.0%	0.0	0.0%	10.7	0.1%	0.0	0.0%
Tosca-Paunsaugunt-Minnimaud complex, 20 to 55 percent slopes	B	0.0%	79.0	0.8%	343.5	2.8%	79.0	0.7%
Trag-Beje-Rottulee family complex	C	0.0%	449.1	4.6%	448.9	3.6%	707.4	6.7%
Trag-Beje-Senchert complex	C	0.0%	0.0	0.0%	0.0	0.0%	17.3	0.2%
Turzo clay loam, 0 to 4 percent slopes	C/D	0.0%	92.9	1.0%	18.2	0.1%	61.8	0.6%
Turzo loam, 0 to 4 percent slopes	C	0.0%	0.0	0.0%	4.9	0.0%	0.0	0.0%
Turzo-Umbo complex, 0 to 2 percent slopes	C	0.0%	133.0	1.4%	70.4	0.6%	133.1	1.3%
Tycreek, extremely stony-Beje, very stony-Senchert complex, 4 to 40 percent slopes	C	0.0%	391.6	4.0%	391.7	3.1%	132.4	1.2%
Tyzut-Rabbitex complex, 10 to 55 percent slopes	D	0.0%	57.8	0.6%	64.1	0.5%	57.8	0.5%
Uffens loam, 0 to 3 percent slopes	C	0.0%	40.1	0.4%	80.6	0.6%	40.1	0.4%
Umbo clay loam, 0 to 2 percent slopes	C	8.0%	0.0	0.0%	23.7	0.2%	0.0	0.0%
Utaline very gravelly sandy loam, 8 to 25 percent slopes	B	0.0%	29.6	0.3%	31.4	0.3%	29.6	0.3%
Walknolls extremely channery sandy loam, 4 to 25 percent slopes	D	0.0%	26.5	0.3%	196.0	1.6%	28.8	0.3%
Walknolls, extremely stony-Lanver-Honlu complex, 4 to 20 percent slopes	D	0.0%	212.3	2.2%	0.0	0.0%	289.8	2.7%
Walknolls-Cheeta-Honlu complex, 8 to 25 percent slopes	D	0.0%	0.0	0.0%	489.8	3.9%	0.0	0.0%

Soil Type	Hydrologic Soil Group[a]	Hydric Rating[b]	Study Area					
			Indian Canyon		Wells Draw		Whitmore Park	
			Acres	%	Acres	%	Acres	%
Walknolls-Gerst-Lanver complex, 5 to 60 percent slopes	D	0.0%	16.1	0.2%	0.0	0.0%	8.8	0.1%
Walknolls-Rock outcrop complex, 2 to 40 percent slopes	D	0.0%	0.0	0.0%	32.0	0.3%	0.0	0.0%
Walknolls-Uendal complex, 2 to 25 percent slopes	D	0.0%	0.0	0.0%	592.0	4.7%	0.0	0.0%
Water	Not applicable	0.0%	0.0	0.0%	6.4	0.1%	27.8	0.3%
Whetrock, extremely stony-Rock outcrop-Tyzut, rubbly complex, 50 to 80 percent slopes	C	0.0%	169.1	1.7%	0.0	0.0%	169.1	1.6%
Whitesage-Dancehall complex, 3 to 20 percent slopes	C	0.0%	0.0	0.0%	106.2	0.9%	0.0	0.0%
Wiggler-Badland-Helper complex, 40 to 80 percent slopes, very stony	D	0.0%	68.2	0.7%	205.8	1.6%	68.2	0.6%
Total			9,717.8	100%	12,475.1	100%	10,598.5	100%

Sources: NRCS 2019a, 2019b, 2019c

[a] Group A: Soils having a high infiltration; Group B: Soils having a moderate infiltration rate; Group C: Soils having a slow infiltration rate when thoroughly wet; Group D: Soils having a very slow infiltration rate. If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

[b] This rating indicates the percentage of a soil type that meets the criteria for hydric soils.

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APPENDIX E-2

Custom Soil Resource Report for the
Indian Canyon Alternative Study Area

United States Department of Agriculture

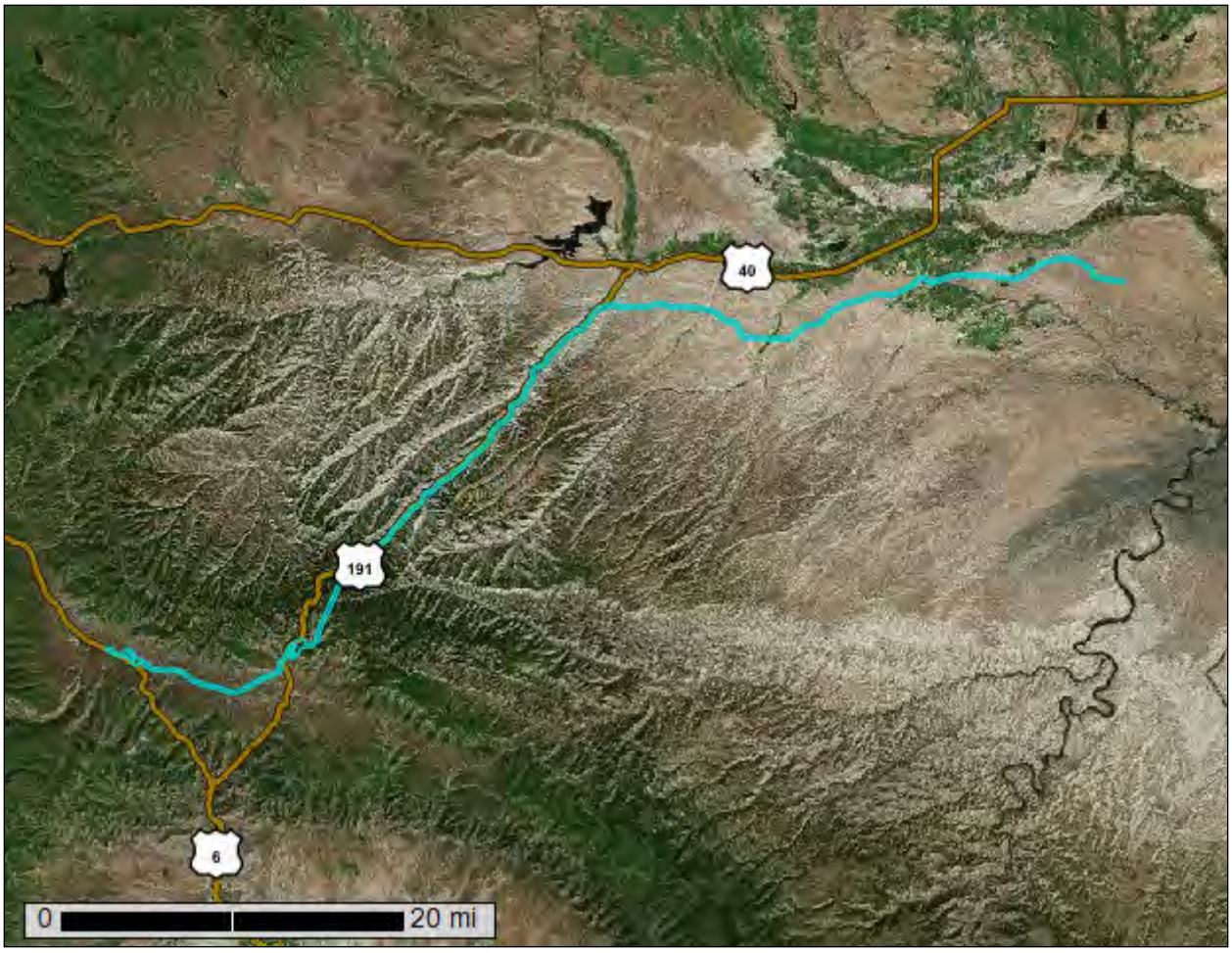
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Carbon Area, Utah, Parts of Carbon and Emery Counties; Duchesne Area, Utah, Parts of Duchesne, Utah, and Wasatch Counties; Uintah and Ouray Indian Reservation, Utah; and Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties

Indian Canyon Alternative



December 17, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

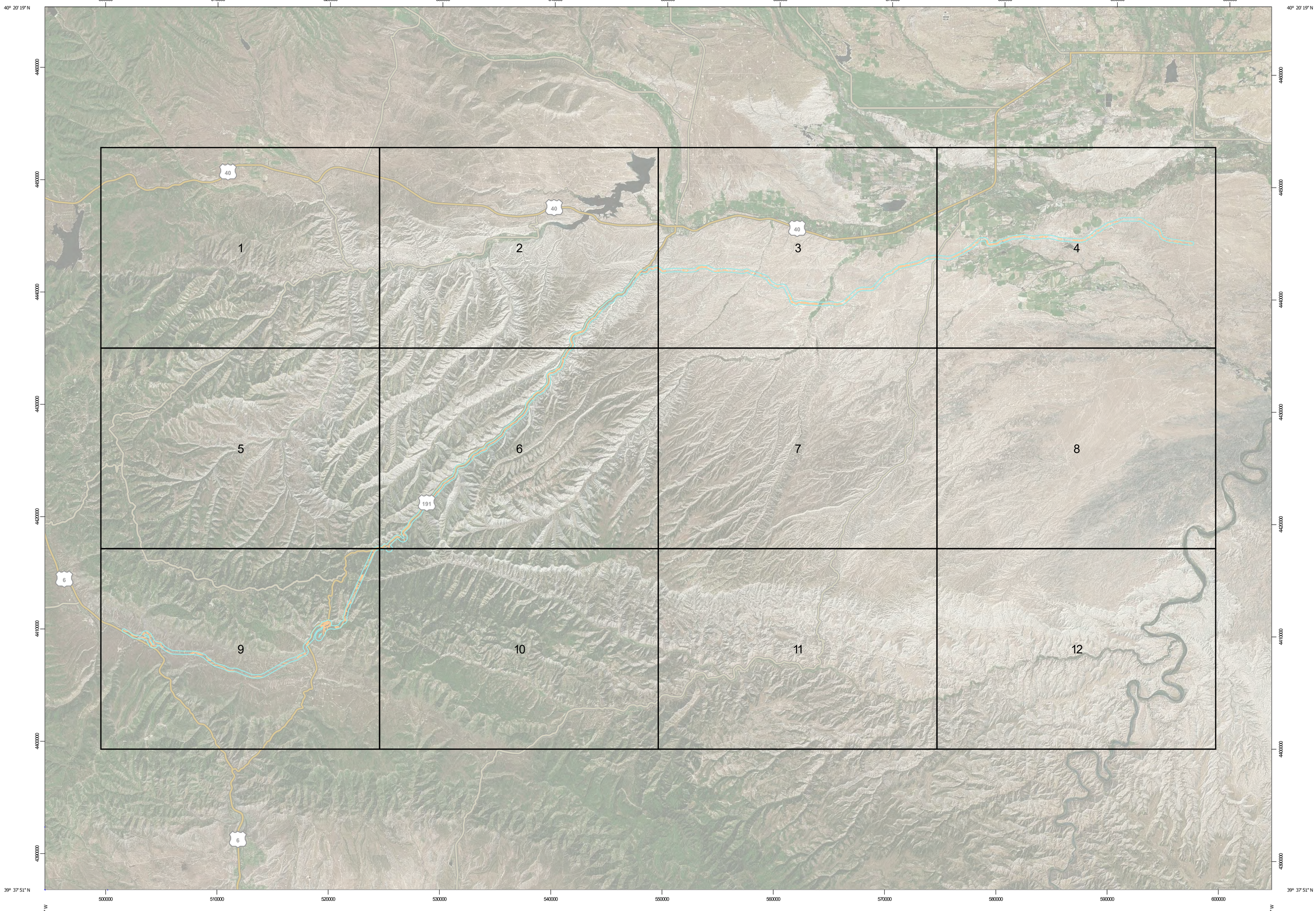
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map
Index Sheet



Map Scale: 1:220,000 if printed on C landscape (22" x 17") sheet.

N

Meters
0 3000 6000 12000 18000

Feet
0 10000 20000 40000 60000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84



Joins sheet 2

Joins sheet 5

Joins sheet 6

Map Scale: 1:50,000 if printed on C landscape (22" x 17") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84



Map Sheet Location

Custom Soil Resource Report
Soil Map
Map sheet 2 of 12



Map Scale: 1:50,000 if printed on C landscape (22" x 17") sheet.

Meters: 0 500 1000 2000 3000

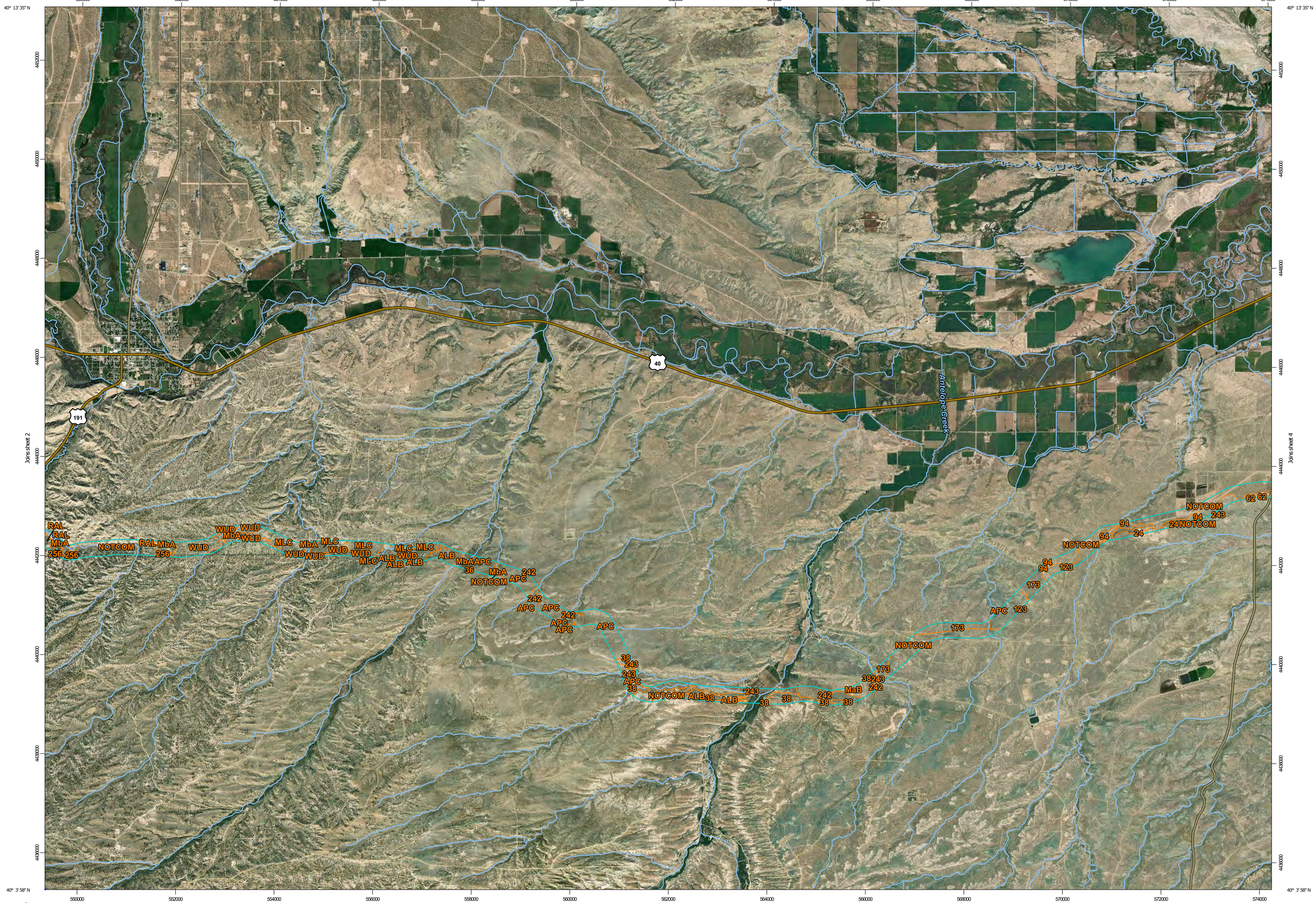
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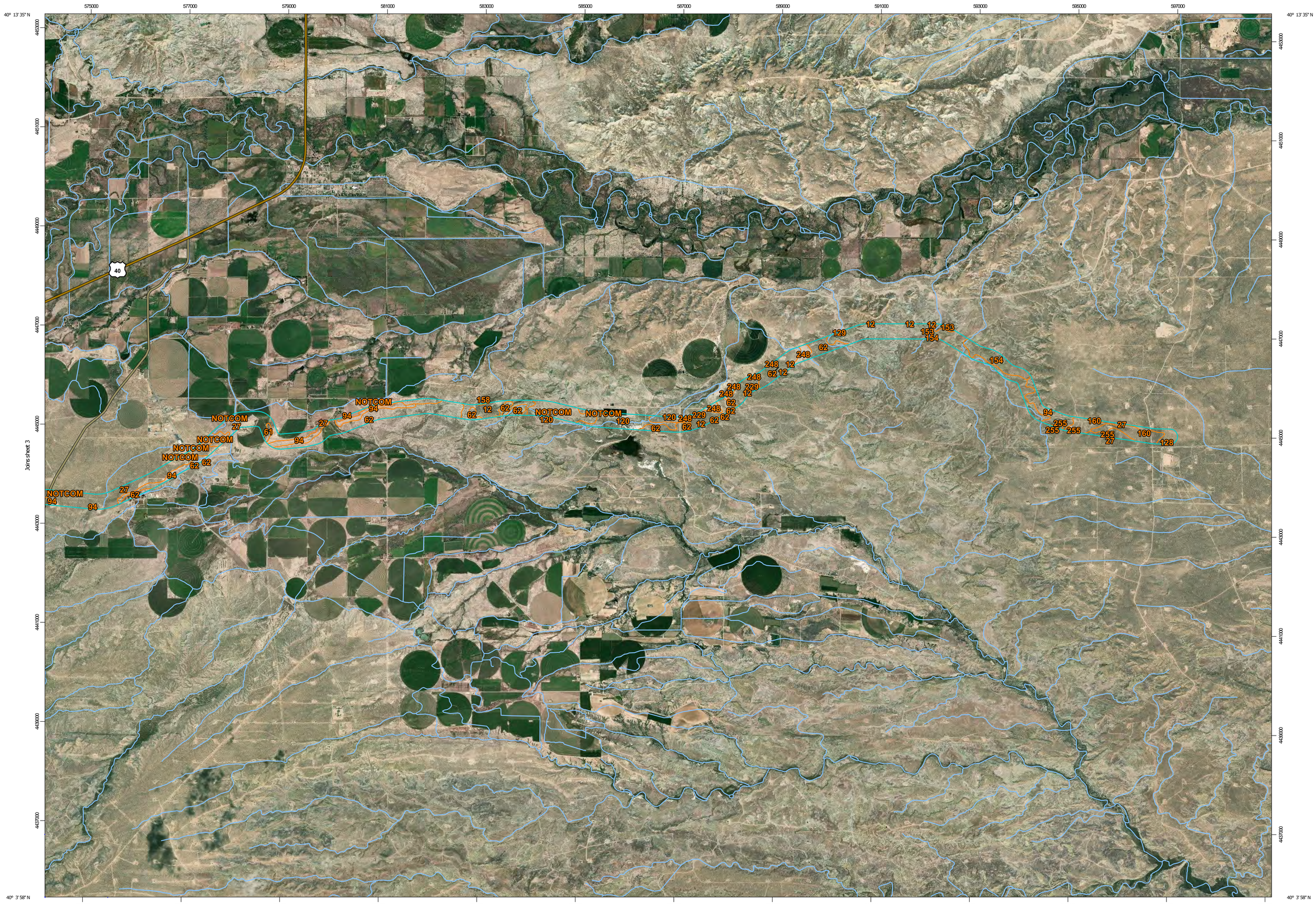
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Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location

Custom Soil Resource Report
Soil Map
Map sheet 3 of 12





Map Scale: 1:50,000 if printed on C landscape (22" x 17") sheet.

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location

Custom Soil Resource Report
Soil Map
Map sheet 5 of 12

Joins sheet 1

Joins sheet 2

Joins sheet 6

Joins sheet 9

Joins sheet 10

111° 0' 17" W

110° 42' 47" W

40° 3' 58" N

39° 54' 18" N

500000 502000 504000 506000 508000 510000 512000 514000 516000 518000 520000 522000 524000

4434000 4432000 4430000 4428000 4426000 4424000 4422000 4420000 4418000

Minnie Creek

Cottonwood Creek

West Fork Avintaquin Creek

Johnson Fork

QuG

Map Scale: 1:50,000 if printed on C landscape (22" x 17") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

5

Map Sheet Location

Custom Soil Resource Report
Soil Map
Map sheet 6 of 12

Joins sheet 1 | Joins sheet 2 | Joins sheet 3
Joins sheet 5 | Joins sheet 7
Joins sheet 9 | Joins sheet 10 | Joins sheet 11

110° 42' 47" W | 110° 25' 16" W
40° 3' 58" N | 39° 54' 18" N
525000 | 527000 | 529000 | 531000 | 533000 | 535000 | 537000 | 539000 | 541000 | 543000 | 545000 | 547000 | 549000
4434000 | 4430000 | 4426000 | 4422000 | 4418000

PKD VJH2 MbA NXE GOF PKD GOF VJH2 GOF NOTCOM PKD PKD VJH2 GOF GOF GOF NXE OPF GOF NXE GOF NXE OPF GOF OCE NXE GOF OPF OPF GOF OPF OPF 107_CC ANF125 GOF ANF125 GOF GOF ANF125 ANF125 GOF GOF GOF ANF125 QuG ANF125 QuG ANF125 QuG ANF125 QuG ANF125 QuG QuG QuG ANF220 QuG ANF220 ANF220 ANF220 QuG SPE QuG SPE ANF220 QuG SPE 107_CC QuG QuG SPE

Fivemile Creek | Cripple Creek | Sixmile Creek | Big Trough Creek | Sowers Creek | Sowers Creek

Map Scale: 1:50,000 if printed on C landscape (22" x 17") sheet.
Meters: 0 500 1000 2000 3000
Feet: 0 2000 4000 8000 12000
N
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location: 6

Custom Soil Resource Report
Soil Map
Map sheet 7 of 12

Joins sheet 3

Joins sheet 2 | Joins sheet 4 | Joins sheet 6 | Joins sheet 8 | Joins sheet 10 | Joins sheet 11 | Joins sheet 12

110° 25' 16" W | 110° 7' 45" W | 40° 3' 58" N | 39° 54' 18" N

550000 552000 554000 556000 558000 560000 562000 564000 566000 568000 570000 572000 574000

4434000 4432000 4430000 4428000 4426000 4424000 4422000 4420000 4418000



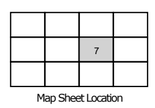
Map Scale: 1:50,000 if printed on C landscape (22" x 17") sheet.

Meters: 0 500 1000 2000 3000

Feet: 0 2000 4000 8000 12000

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84



Map Sheet Location

Custom Soil Resource Report
Soil Map
Map sheet 8 of 12

Joins sheet 4

Joins sheet 3

Joins sheet 7

Joins sheet 11

Joins sheet 12

110° 7' 45" W

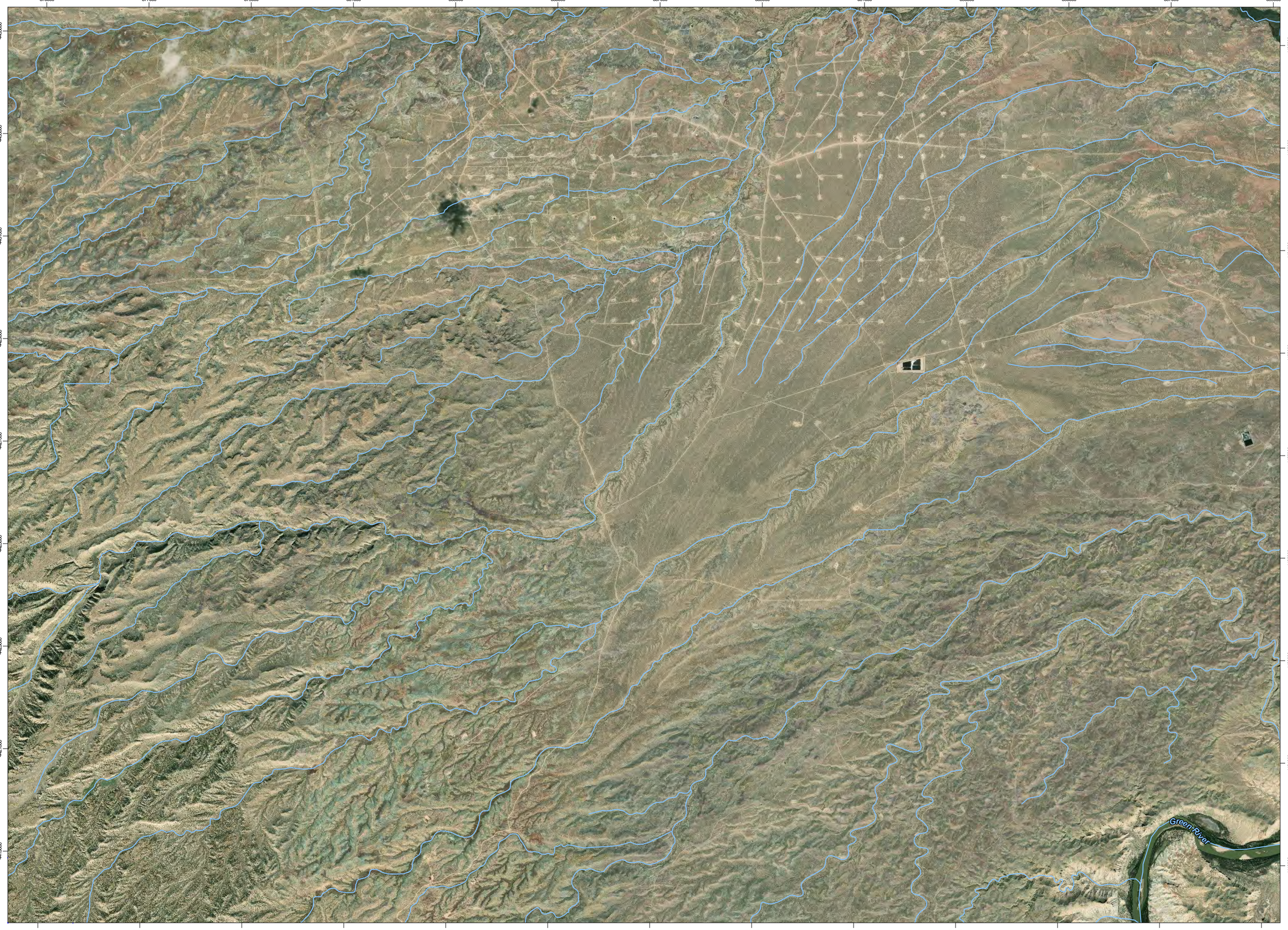
109° 50' 15" W

40° 3' 58" N

39° 54' 18" N

575000 577000 579000 581000 583000 585000 587000 589000 591000 593000 595000 597000 599000

4435000 4433000 4431000 4429000 4427000 4425000 4423000 4421000 4419000



Map Scale: 1:50,000 if printed on C landscape (22" x 17") sheet.

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location

Joins sheet 5
Joins sheet 6
Joins sheet 10

111° 0' 17" W
110° 42' 47" W
39° 54' 18" N
39° 44' 38" N

500000 502000 504000 506000 508000 510000 512000 514000 516000 518000 520000 522000 524000

4416000 4414000 4412000 4410000 4408000 4406000 4404000 4402000 4400000

Kyune Creek
Bear Creek
Right Fork Kyune Creek
Horse Creek
West Fork Willow Creek
Willow Creek
Dry Fork
Ford Creek
Price River
Willow Creek

6 191 7 116

DLC EMF DLC DRB EMF DLC EOC DSB DSB DSB EOC DSB DJE DRB DJE EMF DRB DKF DJE DKF DLC DJE EMF EMF EMF DLC EMF DLC EMF DLC NLE

107_CC SPE DOC MXE SPE SLE SLE MXE SLE KUA SLE MXE DOC MXE DOC SPE NOTCOM NOTCOM SPE NOTCOM NOTCOM NOTCOM NOTCOM NOTCOM NOTCOM KUA NOTCOM SPE NOTCOM LUE LUE SPE LUE ENE NOTCOM SPE ENE LUE LUE KUA EMF EMF NLE LUE KUA KUA EMF EMF NLE NLE

Map Scale: 1:50,000 if printed on C landscape (22" x 17") sheet.

N

0 500 1000 2000 3000 Meters

0 2000 4000 8000 12000 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

9

Map Sheet Location

Joins sheet 6
Joins sheet 5
Joins sheet 7
Joins sheet 9
Joins sheet 11



110° 42' 47" W
110° 25' 16" W
39° 54' 18" N
39° 44' 38" N
525000
527000
529000
531000
533000
535000
537000
539000
541000
543000
545000
547000
549000
4416000
4414000
4412000
4410000
4408000
4406000
4404000
4402000
4400000

Map Scale: 1:50,000 if printed on C landscape (22" x 17") sheet.
N
0 500 1000 2000 3000 Meters
0 2000 4000 8000 12000 Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location
10

Custom Soil Resource Report
Soil Map
Map sheet 11 of 12

Joins sheet 7
Joins sheet 6
Joins sheet 8
Joins sheet 10
Joins sheet 12

110° 25' 16" W
110° 7' 45" W
39° 54' 18" N
39° 44' 38" N
550000
552000
554000
556000
558000
560000
562000
564000
566000
568000
570000
572000
574000
4417000
4415000
4413000
4411000
4409000
4407000
4405000
4403000
4401000

Antelope Creek
Argyle Creek
Nine Mile Creek

Map Scale: 1:50,000 if printed on C landscape (22" x 17") sheet.

N

0 500 1000 2000 3000 Meters

0 2000 4000 8000 12000 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location

Custom Soil Resource Report
Soil Map
Map sheet 12 of 12

Joins sheet 8

Joins sheet 7

110° 7' 45" W

109° 50' 15" W

39° 54' 18" N

39° 44' 38" N

575000 577000 579000 581000 583000 585000 587000 589000 591000 593000 595000 597000 599000

4417000 4415000 4413000 4411000 4409000 4407000 4405000 4403000 4401000

Joins sheet 11

Nine Mile Creek

Green River

Map Scale: 1:50,000 if printed on C landscape (22" x 17") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location
12

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Carbon Area, Utah, Parts of Carbon and Emery Counties
Survey Area Data: Version 11, Sep 16, 2019

Soil Survey Area: Duchesne Area, Utah, Parts of Duchesne, Utah, and Wasatch Counties
Survey Area Data: Version 6, Sep 16, 2019

Soil Survey Area: Uintah and Ouray Indian Reservation, Utah
Survey Area Data: Version 3, Sep 16, 2019

Soil Survey Area: Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties
Survey Area Data: Version 14, Sep 16, 2019

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

MAP LEGEND

MAP INFORMATION

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7	Beje-Trag complex	80.0	0.8%
116	Trag-Beje-Rottulee family complex	449.1	4.6%
Subtotals for Soil Survey Area		**529.1**	**5.4%**
Totals for Area of Interest		**9,718.2**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12	Badland-Rock outcrop complex, 1 to 100 percent slopes	72.0	0.7%
24	Blackston loam, 0 to 6 percent slopes	26.5	0.3%
27	Boreham loam, 0 to 4 percent slopes	327.7	3.4%
36	Cadrina, extremely stony-Rock outcrop complex, 4 to 50 percent slopes	0.0	0.0%
38	Cadrina, extremely stony-Casmos-Rock outcrop complex, 2 to 40 percent slopes	121.5	1.3%
61	Crib loam, 1 to 3 percent slopes	8.6	0.1%
62	Crustown-Motto complex, 0 to 25 percent slopes	245.5	2.5%
94	Greybull-Utaline-Badland complex, 4 to 40 percent slopes	202.5	2.1%
107_CC	Shupert-Dancehall, extremely bouldery complex, 1 to 15 percent slopes	1,234.7	12.7%
120	Jenrid sandy loam, 0 to 4 percent slopes	103.0	1.1%
123	Kilroy loam, 1 to 8 percent slopes	58.2	0.6%
158	Muff gravelly sandy loam, 2 to 8 percent slopes	1.0	0.0%
173	Pariette gravelly sandy loam, 2 to 8 percent slopes	111.2	1.1%
242	Turzo clay loam, 0 to 4 percent slopes	92.9	1.0%
243	Turzo-Umbo complex, 0 to 2 percent slopes	133.0	1.4%
256	Walknolls extremely channery sandy loam, 4 to 25 percent slopes	26.5	0.3%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ALB	Kaiar-Walknolls-Honlu complex, 2 to 15 percent slopes	59.7	0.6%
ANF125	Southtwins-Whetrock-Twinnorth complex, 25 to 60 percent slopes	176.2	1.8%
ANF220	Kamack, moderately deep-Paunsaugunt-Senchert complex, 25 to 70 percent slopes	47.9	0.5%
APC	Grunnell-Pariette-Persayo complex, 2 to 15 percent slopes	354.9	3.7%
DJE	Avintaquin, extremely stony-Floak-Paunsaugunt, very stony complex, 8 to 15 percent slopes	8.3	0.1%
DKF	Paunsaugunt, extremely stony-Helper-Rock outcrop complex, 10 to 50 percent slopes	3.7	0.0%
DLC	Osote-Winspect complex, 2 to 20 percent slopes	421.2	4.3%
DOC	Lostminer-McCadden-Bickmore complex, 4 to 40 percent slopes	25.4	0.3%
DPG	Pathead, very stony-Minnimaud-Saddlehorse, extremely bouldery association, 20 to 60 percent slopes	0.9	0.0%
DRB	Peatross, occasionally flooded-Cookcan, occasionally flooded-Osote complex, 0 to 15 percent slopes	72.1	0.7%
DSB	Brycan loam, 3 to 20 percent slopes	14.1	0.1%
EMF	Gremo-Kyune-Rock outcrop complex, 10 to 60 percent slopes	159.5	1.6%
ENE	Kyune-Weed-Paunsaugunt complex, 10 to 60 percent slopes, very stony	24.1	0.2%
EOC	Kyune, extremely stony-Tycreek-Clyl, extremely stony complex, 4 to 25 percent slopes	178.7	1.8%
FYE2	Walknolls-Cheeta-Honlu complex, 8 to 25 percent slopes	0.0	0.0%
GOF	Gompers-Rock outcrop-Tabyago, extremely bouldery complex, 25 to 80 percent slopes	68.6	0.7%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KUA	Silas loam, 2 to 15 percent slopes	72.5	0.7%
LUE	Tycreek, extremely stony-Beje, very stony-Senchert complex, 4 to 40 percent slopes	391.6	4.0%
MaB	Mikim loam, 3 to 5 percent slopes	40.9	0.4%
MbA	Breezy-Bunkwater-Hickerson complex, 1 to 6 percent slopes	409.3	4.2%
MLC	Molen-Walknolls-Gerst complex, 3 to 20 percent slopes	145.0	1.5%
MXE	Tosca-Paunsaugunt-Minnimaud complex, 20 to 55 percent slopes	79.0	0.8%
NLE	Howbert-Beje-Kyune complex, 4 to 40 percent slopes, very stony	165.7	1.7%
NOTCOM	No Digital Data Available	572.3	5.9%
NXE	Tyzut-Rabbitex complex, 10 to 55 percent slopes	57.8	0.6%
OCE	Rencot very channery loam, 5 to 50 percent slopes	0.5	0.0%
OPF	Pathead-Paunsaugunt-Gompers complex, 40 to 80 percent slopes	160.6	1.7%
PKD	Skitzy-Strych complex, 2 to 20 percent slopes	100.8	1.0%
QuG	Wiggler-Badland-Helper complex, 40 to 80 percent slopes, very stony	68.2	0.7%
RAL	Cheeta-Rock outcrop complex, 30 to 80 percent slopes	117.1	1.2%
SLE	Aagard-Nathale-McCadden complex, 5 to 50 percent slopes, very stony	37.3	0.4%
SPE	Aagard-Gilluly-McCadden complex, 10 to 70 percent slopes	527.5	5.4%
TPG	Pathead-Averett-Modo association, 40 to 70 percent slopes, very stony	6.4	0.1%
VJH2	Whetrock, extremely stony-Rock outcrop-Tyzut, rubbly complex, 50 to 80 percent slopes	169.1	1.7%
WRD	Walknolls-Gerst-Lanver complex, 5 to 60 percent slopes	16.1	0.2%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
WUD	Walknolls, extremely stony-Lanver-Honlu complex, 4 to 20 percent slopes	212.3	2.2%
Subtotals for Soil Survey Area		**7,730.3**	**79.5%**
Totals for Area of Interest		**9,718.2**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available	609.4	6.3%
Subtotals for Soil Survey Area		**609.4**	**6.3%**
Totals for Area of Interest		**9,718.2**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12	Badland-Rock outcrop complex, 1 to 100 percent slopes	9.7	0.1%
27	Boreham loam, 0 to 2 percent slopes	67.1	0.7%
62	Crustown-Motto complex, 2 to 25 percent slopes	119.7	1.2%
94	Greybull-Utaline-Badland complex, 8 to 50 percent slopes	67.7	0.7%
128	Leebench sandy loam, 2 to 8 percent slopes	2.9	0.0%
129	Leeko loam, 0 to 4 percent slopes	1.2	0.0%
153	Motto-Muff-Rock outcrop complex, 2 to 25 percent slopes	259.1	2.7%
154	Motto-Rock outcrop complex, 2 to 25 percent slopes	87.9	0.9%
160	Nakoy loamy fine sand, 1 to 5 percent slopes	64.8	0.7%
229	Tipperary loamy fine sand, 1 to 8 percent slopes	99.4	1.0%
248	Uffens loam, 0 to 3 percent slopes	40.1	0.4%
255	Utaline very gravelly sandy loam, 8 to 25 percent slopes	29.6	0.3%
Subtotals for Soil Survey Area		**849.3**	**8.7%**
Totals for Area of Interest		**9,718.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas

shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Carbon Area, Utah, Parts of Carbon and Emery Counties

7—Beje-Trag complex

Map Unit Setting

National map unit symbol: jx6g
Elevation: 6,980 to 9,670 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 38 to 45 degrees F
Frost-free period: 60 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Beje and similar soils: 55 percent
Trag and similar soils: 20 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Beje

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 6 inches: loam
B2t - 6 to 14 inches: clay loam
R - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R047XA446UT)
Hydric soil rating: No

Description of Trag

Setting

Landform: Draws
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium and/or colluvium derived from sandstone and shale

Typical profile

A1 - 0 to 5 inches: clay loam
B1,B21t,B22t - 5 to 39 inches: clay loam
C - 39 to 60 inches: clay loam

Properties and qualities

Slope: 3 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Mountain loam (Salina wildrye) (R048AY409UT)
Hydric soil rating: No

Minor Components

Doney family

Percent of map unit: 8 percent

Senchert family

Percent of map unit: 8 percent

Trag

Percent of map unit: 5 percent

Silas

Percent of map unit: 2 percent

Rock outcrop

Percent of map unit: 2 percent
Landform: Mountain slopes, hillslopes
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Convex
Across-slope shape: Convex

116—Trag-Beje-Rottulee family complex

Map Unit Setting

National map unit symbol: jx42
Elevation: 7,180 to 7,380 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 38 to 45 degrees F
Frost-free period: 60 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Trag and similar soils: 40 percent
Beje and similar soils: 20 percent
Rottulee family and similar soils: 15 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trag

Setting

Landform: Valley floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium and/or colluvium derived from sandstone and shale

Typical profile

A1 - 0 to 5 inches: loam
B1,B21t,B22t - 5 to 39 inches: clay loam
C - 39 to 60 inches: clay loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Mountain loam (Salina wildrye) (R048AY409UT)
Hydric soil rating: No

Description of Beje

Setting

Landform: Benches, ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountainflank, crest, interfluve
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 6 inches: loam
B2t - 6 to 14 inches: clay loam
R - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R047XA446UT)
Hydric soil rating: No

Description of Rottulee Family

Setting

Landform: Valley sides
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Colluvium over residuum weathered from sandstone and shale

Typical profile

A1, B1 - 0 to 8 inches: loam
B2 - 8 to 15 inches: clay loam
B3 - 15 to 23 inches: gravelly silty clay loam
C1k - 23 to 34 inches: gravelly silt loam
R - 34 to 38 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Shrub) (R047XA460UT)
Hydric soil rating: No

Minor Components

Trag, stony surface

Percent of map unit: 10 percent

Doney family

Percent of map unit: 10 percent

Brycan

Percent of map unit: 2 percent

Silas

Percent of map unit: 2 percent

Falcon

Percent of map unit: 1 percent

Duchesne Area, Utah, Parts of Duchesne, Utah, and Wasatch Counties

12—Badland-Rock outcrop complex, 1 to 100 percent slopes

Map Unit Composition

Badland: 50 percent
Rock outcrop: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Badland

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

24—Blackston loam, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 1tzvn
Elevation: 4,660 to 5,710 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Blackston and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blackston

Setting

Landform: Fan remnants, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Convex, linear
Parent material: Alluvium derived from limestone, sandstone, shale and/or quartzite

Typical profile

Ap - 0 to 8 inches: loam
Bk1 - 8 to 19 inches: loam
Bk2 - 19 to 28 inches: gravelly loam

2Bk3 - 28 to 36 inches: extremely cobbly loam
3Bk4 - 36 to 44 inches: extremely cobbly sandy loam
3C - 44 to 60 inches: extremely cobbly loamy sand

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

27—Boreham loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 1vbcb
Elevation: 4,660 to 5,870 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Boreham and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boreham

Setting

Landform: Paleoterraces, fan remnants, strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave
Across-slope shape: Linear, convex
Parent material: Loamy alluvium over loamy-skeletal alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

Ap - 0 to 13 inches: loam

Bk1 - 13 to 26 inches: loam
Bk2 - 26 to 49 inches: loam
2Bk3 - 49 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

36—Cadrina, extremely stony-Rock outcrop complex, 4 to 50 percent slopes

Map Unit Setting

National map unit symbol: 1vbcf
Elevation: 4,590 to 6,560 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Cadrina, extremely stony, and similar soils: 65 percent
Rock outcrop: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cadrina, Extremely Stony

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 2 inches: extremely stony loam
Bk - 2 to 15 inches: extremely stony loam
R - 15 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 50 percent
Percent of area covered with surface fragments: 5.0 percent
Depth to restrictive feature: 5 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 7.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034BY118UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

38—Cadrina, extremely stony-Casmos-Rock outcrop complex, 2 to 40 percent slopes

Map Unit Setting

National map unit symbol: 1vbcg
Elevation: 4,590 to 6,360 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Cadrina, extremely stony, and similar soils: 40 percent
Casmos and similar soils: 30 percent
Rock outcrop: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cadrina, Extremely Stony

Setting

Landform: Hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 2 inches: extremely stony loam
Bk - 2 to 15 inches: extremely stony loam
R - 15 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Percent of area covered with surface fragments: 5.0 percent
Depth to restrictive feature: 5 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 7.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034BY118UT)
Hydric soil rating: No

Description of Casmos

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone, shale and/or siltstone

Typical profile

A - 0 to 2 inches: very channery loam
C - 2 to 6 inches: channery loam
R - 6 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 40 percent
Depth to restrictive feature: 5 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 0.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034BY118UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

61—Crib loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1v00g
Elevation: 5,050 to 6,890 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Crib and similar soils: 75 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crib

Setting

Landform: Strath terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium over glaciofluvial deposits derived from sandstone, limestone, shale, and quartzite

Typical profile

Ap - 0 to 11 inches: loam
Bk1 - 11 to 42 inches: clay loam
2Bk2 - 42 to 60 inches: extremely cobbly sandy clay loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 55 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034BY212UT)
Hydric soil rating: No

62—Crustown-Motto complex, 0 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1tzw4
Elevation: 4,660 to 5,510 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Crustown and similar soils: 50 percent
Motto and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crustown

Setting

Landform: Hills
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian deposits over residuum derived from calcareous sandstone

Typical profile

A - 0 to 5 inches: sand
C - 5 to 16 inches: loamy sand
Cr - 16 to 22 inches: bedrock
R - 22 to 60 inches: bedrock

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Sand (Fourwing Saltbush) (R034BY112UT)
Hydric soil rating: No

Description of Motto

Setting

Landform: Structural benches, hills
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Slope alluvium over residuum weathered from sandstone and shale

Typical profile

E - 0 to 2 inches: very flaggy loam
Btkn - 2 to 12 inches: clay loam
Bkn - 12 to 14 inches: clay loam
2C - 14 to 17 inches: extremely channery clay loam
2R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: 1 to 4 inches to natric; 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.07 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 60.0
Available water storage in profile: Very low (about 0.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034BY117UT)
Hydric soil rating: No

94—Greybull-Utaline-Badland complex, 4 to 40 percent slopes

Map Unit Setting

National map unit symbol: 1v01x
Elevation: 4,660 to 6,060 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Greybull and similar soils: 40 percent
Utaline and similar soils: 35 percent
Badland: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Greybull

Setting

Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from shale

Typical profile

A - 0 to 2 inches: very cobbly sandy loam
C - 2 to 35 inches: clay loam
Cr - 35 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 40 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Shallow Loam (Shadscale) (R034BY121UT)
Hydric soil rating: No

Description of Utaline

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

A - 0 to 3 inches: very gravelly sandy loam
Bw - 3 to 7 inches: very gravelly loam
Bk - 7 to 60 inches: very gravelly loam

Properties and qualities

Slope: 4 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

Description of Badland

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

107_CC—Shupert-Dancehall, extremely bouldery complex, 1 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2swwt
Elevation: 5,180 to 8,460 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Shupert and similar soils: 40 percent
Dancehall, extremely bouldery, and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shupert

Setting

Landform: Valley floors, canyons
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Parent material: Alluvium derived from sandstone and shale

Typical profile

A - 0 to 3 inches: gravelly loam
C1 - 3 to 9 inches: clay loam
2C2 - 9 to 60 inches: clay loam

Properties and qualities

Slope: 1 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 49 to 71 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Loamy Bottom (Basin Big Sagebrush/Basin Wildrye (R048AY007UT)
Hydric soil rating: No

Description of Dancehall, Extremely Bouldery

Setting

Landform: Valley floors, canyons
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone and shale

Typical profile

A - 0 to 6 inches: bouldery sandy loam
C1 - 6 to 11 inches: loam
C2 - 11 to 34 inches: very bouldery loam
C3 - 34 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 1 to 15 percent
Percent of area covered with surface fragments: 10.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: About 49 to 71 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Loamy Bottom (Basin Big Sagebrush/Basin Wildrye (R048AY007UT)
Hydric soil rating: No

120—Jenrid sandy loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 1vbbk
Elevation: 4,610 to 5,840 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Jenrid and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jenrid

Setting

Landform: Alluvial flats, fan remnants, drainageways
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Alluvium and/or eolian deposits derived from limestone, sandstone, and shale and/or quartzite

Typical profile

A - 0 to 2 inches: sandy loam
C1 - 2 to 21 inches: sandy loam
C2 - 21 to 41 inches: loam
C3 - 41 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent

Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups
Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Alkali Flat (Greasewood) (R034BY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)
Hydric soil rating: No

123—Kilroy loam, 1 to 8 percent slopes

Map Unit Setting
National map unit symbol: 1vbbl
Elevation: 4,660 to 5,810 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition
Kilroy and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kilroy

Setting
Landform: Fan remnants, strath terraces
Down-slope shape: Concave, linear
Across-slope shape: Convex, linear
Parent material: Alluvium derived from sandstone, shale, limestone, and quartzite

Typical profile
A - 0 to 4 inches: loam
Bw - 4 to 16 inches: clay loam
Bk - 16 to 41 inches: gravelly loam
2BCk - 41 to 60 inches: very gravelly loam

Properties and qualities
Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent

Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 7.2 inches)

Interpretive groups
Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

158—Muff gravelly sandy loam, 2 to 8 percent slopes

Map Unit Setting
National map unit symbol: 1vbbt
Elevation: 4,660 to 6,000 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition
Muff and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Muff

Setting
Landform: Strath terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium over residuum weathered from shale

Typical profile
A1 - 0 to 2 inches: gravelly sandy loam
A2 - 2 to 7 inches: sandy loam
Btn - 7 to 14 inches: sandy clay loam
C - 14 to 29 inches: clay loam
Cr - 29 to 60 inches: bedrock

Properties and qualities
Slope: 2 to 8 percent
Depth to restrictive feature: 5 to 8 inches to natric; 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.07 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent

Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 40.0
Available water storage in profile: Very low (about 0.7 inches)

Interpretive groups
Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034BY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

173—Pariette gravelly sandy loam, 2 to 8 percent slopes

Map Unit Setting
National map unit symbol: 1vbbx
Elevation: 4,660 to 5,900 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition
Pariette and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pariette

Setting
Landform: Fan remnants, strath terraces
Down-slope shape: Concave, linear
Across-slope shape: Convex, linear
Parent material: Alluvium and/or residuum weathered from sandstone and shale

Typical profile
A - 0 to 3 inches: gravelly sandy loam
Bk1 - 3 to 10 inches: gravelly sandy loam
Bk2 - 10 to 17 inches: cobbly loam
Bk3 - 17 to 22 inches: gravelly loam
Cr - 22 to 60 inches: bedrock

Properties and qualities
Slope: 2 to 8 percent
Depth to restrictive feature: 20 to 31 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 15.0
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups
Land capability classification (irrigated): 4c
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

242—Turzo clay loam, 0 to 4 percent slopes

Map Unit Setting
National map unit symbol: 1v063
Elevation: 4,590 to 6,070 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition
Turzo and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Turzo

Setting
Landform: Drainageways, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Linear, concave
Across-slope shape: Concave
Parent material: Alluvium derived from sedimentary rock

Typical profile
A - 0 to 2 inches: clay loam
Bw1 - 2 to 10 inches: clay loam
Bw2 - 10 to 22 inches: clay loam
C1 - 22 to 35 inches: clay loam
C2 - 35 to 50 inches: sandy clay loam
C3 - 50 to 60 inches: clay loam

Properties and qualities
Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.07 to 0.21 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 14.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: High (about 9.6 inches)

Interpretive groups
Land capability classification (irrigated): 8w
Land capability classification (nonirrigated): 8w
Hydrologic Soil Group: C/D
Ecological site: Alkali Flat (Greasewood) (R034BY006UT)
Hydric soil rating: No

243—Turzo-Umbo complex, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: 1v00z
Elevation: 4,590 to 5,610 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Turzo and similar soils: 65 percent
Umbo and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Turzo

Setting
Landform: Fan remnants, stream terraces, alluvial flats
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Alluvium derived from sandstone and shale and/or quartzite and/or limestone

Typical profile
A - 0 to 9 inches: clay loam
Bw - 9 to 32 inches: clay loam
C - 32 to 60 inches: loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

Description of Umbo

Setting

Landform: Alluvial flats
Landform position (three-dimensional): Base slope, tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from limestone, sandstone, and shale and/or quartzite

Typical profile

A - 0 to 10 inches: clay loam
C1 - 10 to 52 inches: clay loam
C2 - 52 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 42 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: High (about 11.1 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C

Ecological site: Wet Saline Meadow (Inland saltgrass) (R034BY024UT)
Hydric soil rating: No

256—Walknolls extremely channery sandy loam, 4 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1vbc7
Elevation: 5,540 to 7,380 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Walknolls and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walknolls

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from calcareous sandstone over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 2 inches: extremely channery sandy loam
Bk1 - 2 to 7 inches: very channery sandy loam
Bk2 - 7 to 14 inches: extremely channery sandy loam
R - 14 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 25 percent
Depth to restrictive feature: 4 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Other vegetative classification: Semidesert Shallow Loam (Utah Juniper-Pinyon) (034XY233UT_2)
Hydric soil rating: No

ALB—Kaiar-Walknolls-Honlu complex, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2dw58
Elevation: 5,630 to 6,880 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Kaiar and similar soils: 45 percent
Walknolls and similar soils: 30 percent
Honlu and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kaiar

Setting

Landform: Structural benches
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Slope alluvium from sandstone over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 4 inches: gravelly fine sandy loam
Bw - 4 to 10 inches: gravelly fine sandy loam
Bk1 - 10 to 15 inches: fine sandy loam
Bk2 - 15 to 21 inches: channery fine sandy loam
BCk - 21 to 28 inches: very channery fine sandy loam
R - 28 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.5 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): 4c
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Semidesert Sandy Loam (Fourwing Saltbush) (R034BY216UT)
Hydric soil rating: No

Description of Walknolls

Setting

Landform: Structural benches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium and/or residuum weathered from calcareous sandstone

Typical profile

A - 0 to 1 inches: gravelly sandy loam
Bk - 1 to 4 inches: gravelly loam
BCk - 4 to 11 inches: very gravelly loam
R - 11 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): 7c
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Hydric soil rating: No

Description of Honlu

Setting

Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium and/or slope alluvium derived from limestone, sandstone and/or shale

Typical profile

A - 0 to 2 inches: loam
Bk1 - 2 to 4 inches: loam
Bk2 - 4 to 8 inches: loam
Bk3 - 8 to 14 inches: clay loam
Bk4 - 14 to 51 inches: loam
BCk - 51 to 62 inches: gravelly loam
R - 62 to 66 inches: bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 59 to 62 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034BY212UT)
Hydric soil rating: No

ANF125—Southtwins-Whetrock-Twinnorth complex, 25 to 60 percent slopes

Map Unit Setting

National map unit symbol: 2wrfw
Elevation: 6,720 to 9,510 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Southtwins and similar soils: 35 percent
Whetrock and similar soils: 35 percent
Twinnorth and similar soils: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Southtwins

Setting

Landform: Hillslopes
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Slope alluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 6 inches: sandy loam
Bk1 - 6 to 11 inches: very channery loam
Bk2 - 11 to 21 inches: extremely channery loam
Cr - 21 to 25 inches: bedrock
R - 25 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 60 percent
Depth to restrictive feature: 20 to 30 inches to paralithic bedrock; 24 to 33 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Upland Shallow Loam (Two-Needle Pinyon / Utah Juniper) (R048AY322UT)
Hydric soil rating: No

Description of Whetrock

Setting

Landform: Hillslopes
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from sandstone and shale

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 5 inches: loam
ABk - 5 to 11 inches: loam
Bk1 - 11 to 20 inches: very channery loam

Bk2 - 20 to 26 inches: extremely flaggy loam
Cr - 26 to 38 inches: bedrock
R - 38 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 60 percent
Depth to restrictive feature: 20 to 32 inches to paralithic bedrock; 30 to 46 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Upland Shallow Stony Loam (Two-Needle Pinyon /Douglas Fir) (R048AY330UT)
Hydric soil rating: No

Description of Twinnorth

Setting

Landform: Hillslopes
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 1 inches: channery loam
CBk1 - 1 to 6 inches: channery loam
CBk2 - 6 to 12 inches: extremely channery loam
CBk3 - 12 to 18 inches: extremely channery sandy clay loam
Cr - 18 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 60 percent
Depth to restrictive feature: 4 to 20 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Upland Very Steep Loam (Salina Wildrye). (R048AY366UT)
Hydric soil rating: No

ANF220—Kamack, moderately deep-Paunsaugunt-Senchert complex, 25 to 70 percent slopes

Map Unit Setting

National map unit symbol: 2wrg0
Elevation: 7,540 to 9,510 feet
Mean annual precipitation: 24 to 28 inches
Mean annual air temperature: 38 to 43 degrees F
Frost-free period: 50 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Kamack, moderately deep, and similar soils: 35 percent
Paunsaugunt and similar soils: 30 percent
Senchert and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kamack, Moderately Deep

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium and/or slope alluvium derived over residuum weathered from sedimentary rock

Typical profile

Oi - 0 to 4 inches: slightly decomposed plant material
A1 - 4 to 6 inches: loam
A2 - 6 to 16 inches: channery loam
Bw - 16 to 23 inches: very channery clay loam
C - 23 to 31 inches: extremely channery clay loam
Cr - 31 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 70 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain very steep stony loam (Douglas fir) (F048AY475UT)
Hydric soil rating: No

Description of Paunsaugunt

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 6 inches: channery loam
A2 - 6 to 17 inches: extremely channery loam
R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 70 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Very Steep Stony Loam (Browse) (R048AY473UT)
Hydric soil rating: No

Description of Senchert

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: channery loam
Bt1 - 5 to 11 inches: channery loam
Bt2 - 11 to 19 inches: loam
Bt3 - 19 to 34 inches: extremely channery loam
R - 34 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 70 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: High Mountain Very Steep Loam (Aspen) (F048AY528UT)
Hydric soil rating: No

APC—Grunnell-Pariette-Persayo complex, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2lhjh
Elevation: 5,250 to 6,410 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Grunnell and similar soils: 45 percent
Pariette and similar soils: 30 percent
Persayo and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grunnell

Setting

Landform: Hills
Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from sandstone

Typical profile

A - 0 to 3 inches: channery sandy clay loam
AB - 3 to 6 inches: gravelly loam
Bk - 6 to 12 inches: silty clay loam
R - 12 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 47 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): 7c
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034BY118UT)
Hydric soil rating: No

Description of Pariette

Setting

Landform: Hills
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from shale or siltstone

Typical profile

A - 0 to 2 inches: gravelly fine sandy loam
Bw - 2 to 6 inches: sandy clay loam
Bk1 - 6 to 13 inches: loam
Bk2 - 13 to 27 inches: silty clay loam
Bk3 - 27 to 35 inches: clay loam
BCky - 35 to 39 inches: parachannery loam
Cr - 39 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 15 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 50 percent
Gypsum, maximum in profile: 4 percent
Salinity, maximum in profile: Nonsaline to slightly saline (1.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

Description of Persayo

Setting

Landform: Hills
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from shale and siltstone

Typical profile

A - 0 to 2 inches: channery loam
C - 2 to 4 inches: channery loam
Cr - 4 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 3 to 11 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 4 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D

Ecological site: Desert Shallow Loam (Black Sagebrush) (R034BY118UT)
Hydric soil rating: No

DJE—Avintaquin, extremely stony-Floak-Paunsaugunt, very stony complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1j86s
Elevation: 7,050 to 7,900 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Avintaquin, extremely stony, and similar soils: 50 percent
Floak and similar soils: 25 percent
Paunsaugunt, very stony, and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Avintaquin, Extremely Stony

Setting

Landform: Dip slopes, mountain slopes
Landform position (three-dimensional): Mountainbase
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from limestone

Typical profile

A - 0 to 7 inches: very channery loam
Bk1 - 7 to 17 inches: extremely channery clay loam
Bk2 - 17 to 29 inches: extremely channery clay loam
R - 29 to 60 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 3.0 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 50 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Browse) (R048AY451UT)
Hydric soil rating: No

Description of Floak

Setting
Landform: Dip slopes
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Slope alluvium over residuum weathered from limestone

Typical profile
A - 0 to 6 inches: loam
Bt - 6 to 14 inches: cobbly loam
Btk - 14 to 18 inches: cobbly loam
Bk - 18 to 26 inches: very cobbly loam
R - 26 to 60 inches: bedrock

Properties and qualities
Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 45 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Oak) (R048AY415UT)
Hydric soil rating: No

Description of Paunsaugunt, Very Stony

Setting
Landform: Dip slopes
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone over colluvium derived from limestone

Typical profile
A1 - 0 to 1 inches: extremely flaggy silt loam

A2 - 1 to 4 inches: very flaggy silt loam
ABk - 4 to 8 inches: very flaggy silt loam
R - 8 to 60 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 4 to 10 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 5.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R048AY436UT)
Hydric soil rating: No

DKF—Paunsaugunt, extremely stony-Helper-Rock outcrop complex, 10 to 50 percent slopes

Map Unit Setting

National map unit symbol: 1lqs9
Elevation: 7,180 to 7,940 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Paunsaugunt, extremely stony, and similar soils: 40 percent
Helper and similar soils: 25 percent
Rock outcrop: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paunsaugunt, Extremely Stony

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sandstone over colluvium derived from limestone

Typical profile

A1 - 0 to 2 inches: very cobbly fine sandy loam
A2 - 2 to 6 inches: very cobbly loam
Ak - 6 to 12 inches: very cobbly loam
BCk - 12 to 17 inches: very cobbly loam
R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 50 percent
Percent of area covered with surface fragments: 8.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 60 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Very Steep Stony Loam (Browse) (R048AY473UT)
Hydric soil rating: No

Description of Helper

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium over residuum weathered from limestone, sandstone, and shale

Typical profile

A - 0 to 4 inches: very gravelly loam
Bw - 4 to 12 inches: gravelly loam
BCk - 12 to 23 inches: very parachannery loam
Cr - 23 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.2 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

DLC—Osote-Winspect complex, 2 to 20 percent slopes

Map Unit Setting

National map unit symbol: 1lny9
Elevation: 7,050 to 8,760 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Osote and similar soils: 55 percent
Winspect and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Osote

Setting

Landform: Drainageways, alluvial fans

Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave
Across-slope shape: Concave, convex
Parent material: Alluvium derived from sandstone and shale

Typical profile

A - 0 to 8 inches: clay loam
Bw - 8 to 15 inches: silty clay loam
Bk1 - 15 to 31 inches: silty clay loam
Bk2 - 31 to 49 inches: silty clay loam
Bk3 - 49 to 62 inches: silty clay loam

Properties and qualities

Slope: 2 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Winspect

Setting

Landform: Fan remnants
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone and shale

Typical profile

A1 - 0 to 2 inches: channery loam
A2 - 2 to 7 inches: channery clay loam
Bk1 - 7 to 19 inches: very channery clay loam
Bk2 - 19 to 42 inches: very channery clay loam
Bk3 - 42 to 54 inches: extremely channery clay loam
Bk4 - 54 to 60 inches: very channery clay loam

Properties and qualities

Slope: 2 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained

Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Moderate (about 6.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

DOC—Lostminer-McCadden-Bickmore complex, 4 to 40 percent slopes

Map Unit Setting
National map unit symbol: 1jrts
Elevation: 7,020 to 9,940 feet
Mean annual precipitation: 25 to 28 inches
Mean annual air temperature: 38 to 42 degrees F
Frost-free period: 50 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition
Lostminer and similar soils: 60 percent
Mccadden and similar soils: 20 percent
Bickmore and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lostminer

Setting
Landform: Mountain slopes
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Concave
Parent material: Slope alluvium derived from limestone and shale over residuum weathered from limestone and shale

Typical profile
A - 0 to 6 inches: loam
Bt - 6 to 16 inches: clay loam
Btk - 16 to 19 inches: very channery clay loam

BCk - 19 to 22 inches: parachannery silty clay loam
Cr - 22 to 26 inches: bedrock
R - 26 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 20 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock; 26 to 60 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Mountain Big Sagebrush) (R047XA516UT)
Hydric soil rating: No

Description of Mccadden

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from limestone, sandstone, and shale

Typical profile

A - 0 to 5 inches: gravelly silt loam
AB - 5 to 13 inches: very cobbly loam
BCk - 13 to 16 inches: extremely cobbly loam
R - 16 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 40 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 16 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0

Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: High Mountain Gravelly Loam (Mountain Big Sagebrush) (R048AY518UT)
Hydric soil rating: No

Description of Bickmore

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from limestone and shale

Typical profile

A1 - 0 to 4 inches: clay loam
A2 - 4 to 16 inches: clay loam
Bt1 - 16 to 25 inches: very channery clay loam
Bt2 - 25 to 32 inches: extremely flaggy clay loam
Btk - 32 to 39 inches: extremely flaggy clay loam
R - 39 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 40 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: High Mountain Stony Loam (Douglas Fir) (F048AY523UT)
Hydric soil rating: No

DPG—Pathead, very stony-Minnimaud-Saddlehorse, extremely bouldery association, 20 to 60 percent slopes

Map Unit Setting

National map unit symbol: 1lpzv
Elevation: 6,860 to 9,150 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Pathead, very stony, and similar soils: 55 percent
Minnimaud and similar soils: 20 percent
Saddlehorse, extremely bouldery, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pathead, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Concave, convex
Parent material: Colluvium and/or slope alluvium derived from sandstone and shale over residuum weathered from shale and siltstone

Typical profile

A - 0 to 4 inches: very channery clay loam
Bw - 4 to 12 inches: very channery clay loam
BCk - 12 to 25 inches: extremely channery clay loam
R - 25 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 60 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.21 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 14 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Minnimaud

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Convex
Across-slope shape: Concave, convex
Parent material: Slope alluvium derived from shale over colluvium derived from sandstone over residuum weathered from sandstone

Typical profile

A - 0 to 3 inches: flaggy clay loam
Bk1 - 3 to 9 inches: clay loam
Bk2 - 9 to 15 inches: clay loam
Bk3 - 15 to 33 inches: clay loam
2Bk4 - 33 to 46 inches: very channery clay loam
3Bk5 - 46 to 57 inches: extremely parachannery clay loam
Cr - 57 to 69 inches: bedrock
R - 69 to 80 inches: bedrock

Properties and qualities

Slope: 20 to 50 percent
Depth to restrictive feature: 39 to 59 inches to paralithic bedrock; 59 to 79 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Browse) (R048AY451UT)
Hydric soil rating: No

Description of Saddlehorse, Extremely Bouldery

Setting

Landform: Mountainsides
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Convex
Across-slope shape: Concave
Parent material: Colluvium derived from sandstone and/or slope alluvium derived from shale over residuum weathered from sandstone and shale

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A1 - 1 to 4 inches: stony silty clay loam
A2 - 4 to 10 inches: silty clay loam
Bk1 - 10 to 16 inches: channery silty clay loam
Bk2 - 16 to 27 inches: very channery clay loam
BCk1 - 27 to 31 inches: channery clay loam
BCk2 - 31 to 39 inches: very channery loam
Cr - 39 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 60 percent
Percent of area covered with surface fragments: 10.0 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Very Steep Stony Loam (Browse) (R048AY473UT)
Hydric soil rating: No

DRB—Peatross, occasionally flooded-Cookcan, occasionally flooded-Osote complex, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1lpch
Elevation: 6,530 to 7,840 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Peatross, occasionally flooded, and similar soils: 40 percent
Cookcan, occasionally flooded, and similar soils: 20 percent
Osote and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Peatross, Occasionally Flooded

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sedimentary rock

Typical profile

A - 0 to 6 inches: fine sandy loam
CB - 6 to 12 inches: fine sandy loam
Ab - 12 to 15 inches: loam
Bwb1 - 15 to 23 inches: loam
Bwb2 - 23 to 32 inches: silt loam
C1 - 32 to 38 inches: silty clay loam
C2 - 38 to 47 inches: silty clay loam
2C3 - 47 to 60 inches: very gravelly fine sandy loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 20 to 40 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C
Ecological site: Semiwet Fresh Streambank (R048AY006UT)
Hydric soil rating: No

Description of Cookcan, Occasionally Flooded

Setting

Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

Ak - 0 to 9 inches: clay loam
Bk - 9 to 11 inches: silty clay loam
2Bkg - 11 to 28 inches: fine sandy loam
2CBg - 28 to 34 inches: sandy loam
3Cg1 - 34 to 45 inches: very gravelly loamy sand
3Cg2 - 45 to 60 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 6 to 20 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline (0.2 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 8w
Land capability classification (nonirrigated): 8w
Hydrologic Soil Group: C/D
Ecological site: Wet Fresh Meadow (Willow-Sedge) (R048AY008UT)
Hydric soil rating: Yes

Description of Osote

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex

Parent material: Alluvium derived from sandstone and shale

Typical profile

A1 - 0 to 4 inches: loam
A2 - 4 to 10 inches: loam
Bk1 - 10 to 31 inches: loam
Bk2 - 31 to 42 inches: silt loam
Bk3 - 42 to 72 inches: silty clay loam

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.2 to 1.5 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

DSB—Brycan loam, 3 to 20 percent slopes

Map Unit Setting

National map unit symbol: 1jxwk
Elevation: 6,100 to 8,630 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Brycan and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brycan

Setting

Landform: Stream terraces, drainageways

Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Alluvium derived from limestone, sandstone, and shale

Typical profile

A - 0 to 7 inches: loam
ABk1 - 7 to 22 inches: loam
ABk2 - 22 to 30 inches: loam
Btk - 30 to 40 inches: loam
2Bk - 40 to 48 inches: gravelly very fine sandy loam
2Bkb - 48 to 60 inches: loam

Properties and qualities

Slope: 3 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: Mountain Loamy Bottom (Basin Wildrye) (R048AY410UT)
Hydric soil rating: No

EMF—Gremo-Kyune-Rock outcrop complex, 10 to 60 percent slopes

Map Unit Setting

National map unit symbol: 1jxzv
Elevation: 7,050 to 8,630 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Gremo and similar soils: 55 percent
Kyune and similar soils: 20 percent
Rock outcrop: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gremo

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and slope alluvium derived from sedimentary rock over residuum weathered from shale and siltstone

Typical profile

A - 0 to 6 inches: gravelly clay loam
Bk - 6 to 16 inches: silty clay loam
BCk - 16 to 20 inches: channery clay loam
C - 20 to 24 inches: very parachannery clay loam
Cr - 24 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 60 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Kyune

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from shale

Typical profile

A - 0 to 8 inches: loam
Bk1 - 8 to 11 inches: clay loam

Bk2 - 11 to 18 inches: gravelly loam
Bk3 - 18 to 27 inches: silt loam
BCk - 27 to 30 inches: very parachannery very fine sandy loam
Cr - 30 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 60 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (1.0 to 2.5 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

ENE—Kyune-Weed-Paunsaugunt complex, 10 to 60 percent slopes, very stony

Map Unit Setting

National map unit symbol: 1jtzz
Elevation: 7,450 to 9,220 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Kyune, very stony, and similar soils: 45 percent
Weed, very stony, and similar soils: 25 percent

Paunsaugunt, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kyune, Very Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from limestone, sandstone, and shale over residuum weathered from shale

Typical profile

A - 0 to 7 inches: cobbly clay loam
Bk - 7 to 9 inches: clay loam
BCk - 9 to 24 inches: paragravelly clay loam
Cr - 24 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 50 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 38 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Weed, Very Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock

Typical profile

A - 0 to 6 inches: cobbly loam

Bw - 6 to 11 inches: loam
Bt1 - 11 to 17 inches: loam
Bt2 - 17 to 27 inches: clay loam
Btk1 - 27 to 33 inches: paragravelly clay loam
Btk2 - 33 to 39 inches: paragravelly clay loam
BCtk - 39 to 50 inches: very paragravelly clay loam
BCk - 50 to 61 inches: extremely paragravelly loam
Cr - 61 to 71 inches: bedrock

Properties and qualities

Slope: 10 to 25 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 59 to 69 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Paunsaugunt, Very Stony

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from limestone or calcareous sandstone

Typical profile

A - 0 to 7 inches: extremely stony loam
Ak - 7 to 9 inches: extremely stony loam
R - 9 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 60 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 6 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.2 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R048AY436UT)
Hydric soil rating: No

EOC—Kyune, extremely stony-Tycreek-Clyl, extremely stony complex, 4 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1lqm9
Elevation: 7,050 to 8,200 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Kyune, extremely stony, and similar soils: 45 percent
Tycreek and similar soils: 25 percent
Clyl, extremely stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kyune, Extremely Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from limestone, sandstone, and shale over residuum weathered from shale

Typical profile

A - 0 to 10 inches: gravelly loam

Bk1 - 10 to 13 inches: gravelly silty clay loam
Bk2 - 13 to 32 inches: gravelly silty clay loam
BCk - 32 to 35 inches: very paragravelly silty clay loam
Cr - 35 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 25 percent
Percent of area covered with surface fragments: 3.0 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Tycreek

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Slope alluvium derived from limestone and sandstone and/or colluvium derived from limestone, sandstone, and shale

Typical profile

A - 0 to 9 inches: loam
Bt - 9 to 18 inches: clay loam
Btk1 - 18 to 35 inches: clay loam
Btk2 - 35 to 41 inches: clay loam
Bk - 41 to 61 inches: gravelly clay loam
BCk - 61 to 72 inches: parachannery silty clay loam

Properties and qualities

Slope: 4 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.07 to 0.21 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Clyl, Extremely Stony

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock

Typical profile

A1 - 0 to 4 inches: very cobbly fine sandy loam
A2 - 4 to 11 inches: very stony fine sandy loam
Bk1 - 11 to 21 inches: very cobbly loam
Bk2 - 21 to 44 inches: very stony loam
Bk3 - 44 to 60 inches: very stony loam

Properties and qualities

Slope: 4 to 25 percent
Percent of area covered with surface fragments: 5.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 50 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (1.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Mountain Stony Loam (Mountain Big Sagebrush) (R048AY448UT)
Hydric soil rating: No

FYE2—Walknolls-Cheeta-Honlu complex, 8 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2kkyx
Elevation: 5,770 to 7,180 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Walknolls and similar soils: 50 percent
Cheeta and similar soils: 20 percent
Honlu and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walknolls

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from calcareous sandstone

Typical profile

A - 0 to 2 inches: very gravelly sandy loam
Bk1 - 2 to 4 inches: gravelly loam
Bk2 - 4 to 9 inches: very gravelly sandy loam
R - 9 to 60 inches: bedrock

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: 7 to 11 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Hydric soil rating: No

Description of Cheeta

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone and shale

Typical profile

A - 0 to 2 inches: gravelly sandy loam
Bk - 2 to 3 inches: gravelly sandy loam
BCk - 3 to 6 inches: very gravelly sandy clay loam
R - 6 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 2 to 8 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Hydric soil rating: No

Description of Honlu

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock

Typical profile

A - 0 to 2 inches: loam
Bk1 - 2 to 4 inches: loam
Bk2 - 4 to 8 inches: loam
Bk3 - 8 to 14 inches: clay loam
Bk4 - 14 to 51 inches: loam
BCk - 51 to 62 inches: gravelly loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034BY212UT)
Hydric soil rating: No

GOF—Gompers-Rock outcrop-Tabyago, extremely bouldery complex, 25 to 80 percent slopes

Map Unit Setting

National map unit symbol: 2mx7m
Elevation: 6,400 to 8,530 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Gompers and similar soils: 50 percent
Rock outcrop: 30 percent
Tabyago, extremely bouldery, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gompers

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 3 inches: very channery loam
C - 3 to 8 inches: very channery loam
R - 8 to 60 inches: bedrock

Properties and qualities

Slope: 40 to 80 percent
Depth to restrictive feature: 5 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Upland Very Steep Shallow Loam (Pinyon-Utah Juniper) (R048AY342UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Tabyago, Extremely Bouldery

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Slope alluvium and/or colluvium derived from sandstone and shale

Typical profile

A1 - 0 to 4 inches: extremely bouldery sandy loam
A2 - 4 to 10 inches: very channery sandy loam
Bk1 - 10 to 21 inches: very stony sandy loam
Bk2 - 21 to 33 inches: extremely stony loam
R - 33 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 65 percent
Percent of area covered with surface fragments: 10.0 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: B
Ecological site: Upland Very Steep Loam (Salina Wildrye). (R048AY366UT)
Hydric soil rating: No

KUA—Silas loam, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1hnkz
Elevation: 6,860 to 9,050 feet
Mean annual precipitation: 24 to 28 inches
Mean annual air temperature: 38 to 42 degrees F
Frost-free period: 50 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition

Silas and similar soils: 80 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Silas

Setting

Landform: Drainageways

Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sedimentary rock

Typical profile

A1 - 0 to 8 inches: loam
A2 - 8 to 21 inches: loam
CB - 21 to 26 inches: gravelly fine sandy loam
Ab - 26 to 35 inches: loam
CBb - 35 to 60 inches: gravelly loam

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: About 20 to 30 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline (0.0 to 0.5 mmhos/cm)
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Wet Fresh Meadow (Willow-Sedge) (R048AY008UT)
Hydric soil rating: No

LUE—Tycreek, extremely stony-Beje, very stony-Senchert complex, 4 to 40 percent slopes

Map Unit Setting

National map unit symbol: 1hnl3
Elevation: 7,180 to 9,320 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 38 to 43 degrees F
Frost-free period: 60 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Tycreek, extremely stony, and similar soils: 45 percent
Senchert and similar soils: 15 percent
Beje, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tycreek, Extremely Stony

Setting

Landform: Mountain slopes

Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from limestone, sandstone, and shale

Typical profile

A1 - 0 to 4 inches: cobbly fine sandy loam
A2 - 4 to 11 inches: cobbly fine sandy loam
Bt1 - 11 to 15 inches: fine sandy loam
Bt2 - 15 to 24 inches: cobbly loam
Btk - 24 to 35 inches: sandy clay loam
Bk - 35 to 46 inches: loam
BCk - 46 to 64 inches: parachannery loam
Cr - 64 to 68 inches: bedrock

Properties and qualities

Slope: 4 to 40 percent
Percent of area covered with surface fragments: 5.1 percent
Depth to restrictive feature: 59 to 72 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Beje, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 8 inches: gravelly fine sandy loam
Bt1 - 8 to 14 inches: gravelly clay loam
Bt2 - 14 to 17 inches: cobbly clay loam
R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 20 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R048AY436UT)
Hydric soil rating: No

Description of Senchert

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Concave, convex
Across-slope shape: Concave, convex
Parent material: Slope alluvium and/or colluvium derived from sandstone and shale over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 12 inches: loam
Bt1 - 12 to 22 inches: loam
Bt2 - 22 to 33 inches: clay loam
Btk - 33 to 34 inches: clay loam
R - 34 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 15 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 4 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Aspen) (F048AY506UT)
Hydric soil rating: No

MaB—Mikim loam, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1v5x2
Elevation: 5,180 to 6,720 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Mikim and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mikim

Setting

Landform: Drainageways, alluvial fans
Down-slope shape: Concave
Across-slope shape: Linear, convex
Parent material: Slope alluvium derived from limestone, sandstone, and shale and/or quartzite

Typical profile

Ap - 0 to 10 inches: loam
AC - 10 to 17 inches: loam
C1 - 17 to 26 inches: sandy clay loam
C2 - 26 to 32 inches: clay loam
C3 - 32 to 39 inches: sandy clay loam
C4 - 39 to 54 inches: clay loam
C5 - 54 to 60 inches: clay loam

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034BY212UT)
Hydric soil rating: No

MbA—Breezy-Bunkwater-Hickerson complex, 1 to 6 percent slopes

Map Unit Setting

National map unit symbol: 1v5x4
Elevation: 5,180 to 7,510 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Breezy and similar soils: 40 percent
Bunkwater and similar soils: 25 percent
Hickerson and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Breezy

Setting

Landform: Fan remnants, stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium derived from limestone, sandstone, and shale and/or quartzite

Typical profile

A - 0 to 2 inches: sandy clay loam
Bwn1 - 2 to 5 inches: sandy clay loam
Bwn2 - 5 to 14 inches: loam
Bwn3 - 14 to 20 inches: loam
Bk1 - 20 to 27 inches: loam
Bk2 - 27 to 37 inches: loam
Bk3 - 37 to 65 inches: sandy clay loam

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 14 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Semidesert Alkali Loam (Black Greasewood/Wyoming Big Sagebrush (R034BY213UT)
Hydric soil rating: No

Description of Bunkwater

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium and/or eolian deposits derived from limestone, sandstone, and shale and/or quartzite

Typical profile

A - 0 to 2 inches: loam
Bt - 2 to 11 inches: silty clay loam
Btnk - 11 to 20 inches: silty clay loam
Bkn - 20 to 34 inches: silt loam
Bk1 - 34 to 49 inches: loam
Bk2 - 49 to 56 inches: sandy clay loam
2Bk - 56 to 67 inches: sandy loam

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: 4 to 15 inches to natric
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.07 to 0.21 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0

Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): 7c
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Semidesert Alkali Loam (Black Greasewood/Wyoming Big Sagebrush (R034BY213UT)
Hydric soil rating: No

Description of Hickerson

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

Ap - 0 to 5 inches: loam
Bw1 - 5 to 17 inches: loam
Bw2 - 17 to 26 inches: clay loam
Bk1 - 26 to 39 inches: silty clay loam
Bk2 - 39 to 44 inches: fine sandy loam
Ab - 44 to 45 inches: silt loam
CB - 45 to 56 inches: sandy loam
C - 56 to 67 inches: fine sandy loam

Properties and qualities

Slope: 1 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 42 to 60 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 34 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Loamy Bottom (Basin Big Sagebrush) (R034BY009UT)
Hydric soil rating: No

MLC—Molen-Walknolls-Gerst complex, 3 to 20 percent slopes

Map Unit Setting

National map unit symbol: 2kwjl
Elevation: 5,250 to 6,560 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Molen and similar soils: 45 percent
Walknolls and similar soils: 25 percent
Gerst and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Molen

Setting

Landform: Erosion remnants, structural benches
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Eolian sands and/or slope alluvium derived from sedimentary rock over residuum weathered from sandstone and shale

Typical profile

A - 0 to 3 inches: gravelly fine sandy loam
Bw - 3 to 9 inches: fine sandy loam
Bk1 - 9 to 12 inches: loam
Bk2 - 12 to 23 inches: loam
2Bky - 23 to 34 inches: clay loam
2R - 34 to 60 inches: bedrock

Properties and qualities

Slope: 3 to 10 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 45 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to slightly saline (1.0 to 6.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034BY212UT)
Hydric soil rating: No

Description of Walknolls

Setting

Landform: Structural benches, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Slope alluvium and colluvium over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 2 inches: gravelly loamy sand
Bk - 2 to 3 inches: gravelly sandy loam
BCk - 3 to 9 inches: extremely channery sandy loam
R - 9 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 20 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Black Sagebrush) (R034BY227UT)
Hydric soil rating: No

Description of Gerst

Setting

Landform: Hills on structural benches
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex

Parent material: Slope alluvium and/or colluvium derived from sandstone and shale over residuum weathered from shale

Typical profile

A - 0 to 3 inches: loam
CBk - 3 to 9 inches: cobbly loam
C - 9 to 17 inches: very parachannery loam
Cr - 17 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 20 percent
Depth to restrictive feature: 6 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Hydric soil rating: No

MXE—Tosca-Paunsaugunt-Minnimaud complex, 20 to 55 percent slopes

Map Unit Setting

National map unit symbol: 2lb3r
Elevation: 6,560 to 9,020 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Tosca and similar soils: 35 percent
Paunsaugunt and similar soils: 30 percent
Minnimaud and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tosca

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sandstone and shale over residuum weathered from sandstone and shale

Typical profile

Oe - 0 to 0 inches: moderately decomposed plant material
A - 0 to 7 inches: channery loam
Bk1 - 7 to 19 inches: very channery loam
Bk2 - 19 to 26 inches: very channery loam
Bk3 - 26 to 32 inches: channery loam
Bk4 - 32 to 44 inches: extremely channery fine sandy loam
R - 44 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 55 percent
Depth to restrictive feature: 39 to 46 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Mountain Stony Loam (Douglas Fir) (F048AY452UT)
Hydric soil rating: No

Description of Paunsaugunt

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sedimentary rock

Typical profile

A - 0 to 7 inches: very channery loam
Bk - 7 to 10 inches: very channery fine sandy loam
R - 10 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 55 percent
Depth to restrictive feature: 9 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Stony Loam (Douglas Fir) (F048AY452UT)
Hydric soil rating: No

Description of Minnimaud

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from interbedded sedimentary rock over residuum weathered from interbedded sedimentary rock

Typical profile

A1 - 0 to 6 inches: channery loam
A2 - 6 to 11 inches: gravelly loam
Bk1 - 11 to 24 inches: gravelly clay loam
Bk2 - 24 to 44 inches: paragravelly loam
Cr - 44 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 55 percent
Depth to restrictive feature: 39 to 59 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 42 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Browse) (R048AY451UT)
Hydric soil rating: No

NLE—Howbert-Beje-Kyune complex, 4 to 40 percent slopes, very stony

Map Unit Setting

National map unit symbol: 1kyy0
Elevation: 6,920 to 8,760 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Howbert, very stony, and similar soils: 50 percent
Beje, very stony, and similar soils: 20 percent
Kyune, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Howbert, Very Stony

Setting

Landform: Valley floors
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Slope alluvium derived from limestone, sandstone, and shale

Typical profile

A - 0 to 2 inches: sandy loam
Bt - 2 to 5 inches: loam
Btk - 5 to 11 inches: loam
Bk1 - 11 to 23 inches: loam
Bk2 - 23 to 30 inches: loam
Bk3 - 30 to 48 inches: loam
Bk4 - 48 to 60 inches: gravelly loam

Properties and qualities

Slope: 4 to 10 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Beje, Very Stony

Setting

Landform: Ridges
Landform position (three-dimensional): Crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from sandstone and shale

Typical profile

A - 0 to 2 inches: loam
Bt1 - 2 to 5 inches: clay loam
Bt2 - 5 to 11 inches: clay loam
Btk - 11 to 14 inches: sandy clay loam
R - 14 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 15 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Salinity, maximum in profile: Nonsaline (0.2 to 1.5 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R048AY436UT)
Hydric soil rating: No

Description of Kyune, Very Stony

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from limestone, sandstone, and shale over residuum weathered from shale

Typical profile

A - 0 to 2 inches: stony sandy loam
Bw - 2 to 11 inches: loam
Bk1 - 11 to 19 inches: sandy clay loam
Bk2 - 19 to 26 inches: clay loam
Cr - 26 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 40 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Browse) (R048AY451UT)
Hydric soil rating: No

NOTCOM—No Digital Data Available

Map Unit Composition

Notcom: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Notcom

Properties and qualities

NXE—Tyzut-Rabbitex complex, 10 to 55 percent slopes

Map Unit Setting

National map unit symbol: 2ncm1
Elevation: 6,000 to 8,530 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Tyzut and similar soils: 70 percent
Rabbitex and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tyzut

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from sedimentary rock

Typical profile

A - 0 to 7 inches: channery loam
Bk - 7 to 15 inches: very flaggy loam
R - 15 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 55 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Upland Shallow Stony Loam (Two-Needle Pinyon /Douglas Fir) (F048AY330UT)
Hydric soil rating: No

Description of Rabbitex

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from sedimentary rock

Typical profile

A - 0 to 4 inches: channery fine sandy loam
ABk - 4 to 9 inches: loam
Bk1 - 9 to 21 inches: loam
Bk2 - 21 to 32 inches: channery clay loam
BCk - 32 to 41 inches: very channery clay loam
R - 41 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 40 percent
Depth to restrictive feature: 39 to 59 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 58 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Upland Stony Loam (Pinyon-Utah Juniper) (R048AY331UT)
Hydric soil rating: No

OCE—Rencot very channery loam, 5 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2mx9k
Elevation: 5,710 to 8,880 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Rencot and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rencot

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from sandstone and shale

Typical profile

A - 0 to 2 inches: very channery loam
Bk1 - 2 to 4 inches: very gravelly loam
Bk2 - 4 to 7 inches: very channery loam
Bk3 - 7 to 18 inches: extremely channery loam
R - 18 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 50 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D
Ecological site: Upland Shallow Stony Loam (Two-Needle Pinyon /Douglas Fir) (F048AY330UT)
Hydric soil rating: No

OPF—Pathead-Paunsaugunt-Gompers complex, 40 to 80 percent slopes

Map Unit Setting

National map unit symbol: 2mxbk
Elevation: 6,100 to 9,320 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 45 degrees F
Frost-free period: 70 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Pathead and similar soils: 30 percent
Paunsaugunt and similar soils: 30 percent
Gompers and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pathead

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone and shale

Typical profile

A - 0 to 5 inches: very channery loam
Bw - 5 to 12 inches: channery loam
BCk - 12 to 21 inches: extremely channery fine sandy loam
R - 21 to 60 inches: bedrock

Properties and qualities

Slope: 50 to 80 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 14 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: C
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Paunsaugunt

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from limestone and sandstone

Typical profile

A1 - 0 to 2 inches: channery loam
A2 - 2 to 7 inches: very flaggy loam
Ak - 7 to 14 inches: extremely flaggy loam
R - 14 to 60 inches: bedrock

Properties and qualities

Slope: 40 to 70 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 14 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mixed Conifer) (R048AY443UT)
Hydric soil rating: No

Description of Gompers

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium derived from sedimentary rock

Typical profile

A1 - 0 to 2 inches: very channery sandy loam

A2 - 2 to 6 inches: very channery sandy loam
C - 6 to 14 inches: extremely flaggy sandy loam
R - 14 to 60 inches: bedrock

Properties and qualities

Slope: 50 to 75 percent
Depth to restrictive feature: 4 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Upland Shallow Stony Loam (Two-Needle Pinyon /Douglas Fir) (F048AY330UT)
Hydric soil rating: No

PKD—Skitzy-Strych complex, 2 to 20 percent slopes

Map Unit Setting

National map unit symbol: 1v5yn
Elevation: 4,620 to 8,170 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Skitzy and similar soils: 45 percent
Strych and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Skitzy

Setting

Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Mixed alluvium derived from sandstone and shale

Typical profile

A - 0 to 2 inches: very channery fine sandy loam
Bw - 2 to 5 inches: channery loam
Bkn - 5 to 15 inches: very channery loam
Bky - 15 to 36 inches: very channery fine sandy loam
Bk - 36 to 60 inches: very channery loam

Properties and qualities

Slope: 2 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 6.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Alkali Flat (Greasewood) (R034BY006UT)
Hydric soil rating: No

Description of Strych

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Mixed alluvium derived from sandstone and shale

Typical profile

A - 0 to 2 inches: very channery sandy loam
Bw - 2 to 6 inches: channery fine sandy loam
Bk1 - 6 to 15 inches: extremely channery sandy loam
Bk2 - 15 to 32 inches: very channery loam
Bky - 32 to 60 inches: very channery sandy loam
BCky - 60 to 79 inches: very channery fine sandy loam

Properties and qualities

Slope: 2 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent

Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.5 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Semidesert Gravelly Loam (Wyoming Big Sagebrush) (R034BY205UT)
Hydric soil rating: No

QuG—Wiggler-Badland-Helper complex, 40 to 80 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2pw09
Elevation: 6,720 to 9,740 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Wiggler, very stony, and similar soils: 45 percent
Helper, very stony, and similar soils: 20 percent
Badland: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wiggler, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium over residuum weathered from shale

Typical profile

A - 0 to 1 inches: very channery loam
Bw - 1 to 5 inches: parachannery clay loam
C - 5 to 8 inches: very parachannery loam
Cr - 8 to 60 inches: bedrock

Properties and qualities

Slope: 50 to 80 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 4 to 20 inches to paralithic bedrock
Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Helper, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from shale over residuum weathered from shale

Typical profile

A - 0 to 6 inches: channery loam
Bk - 6 to 13 inches: channery clay loam
BCk - 13 to 24 inches: very parachannery loam
Cr - 24 to 60 inches: bedrock

Properties and qualities

Slope: 40 to 70 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 17 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain very steep stony loam (Douglas fir) (F048AY475UT)
Hydric soil rating: No

Description of Badland

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

RAL—Cheeta-Rock outcrop complex, 30 to 80 percent slopes

Map Unit Setting

National map unit symbol: 2knjz
Elevation: 5,580 to 7,220 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Cheeta and similar soils: 55 percent
Rock outcrop: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cheeta

Setting

Landform: Valley sides, mountain slopes
Landform position (three-dimensional): Center third of mountainflank, rise
Down-slope shape: Linear, convex
Across-slope shape: Concave, convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 2 inches: very channery loam
C - 2 to 6 inches: extremely channery loam
R - 6 to 60 inches: bedrock

Properties and qualities

Slope: 30 to 80 percent
Depth to restrictive feature: 5 to 13 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Semidesert Very Steep Shallow Loam (Utah Juniper-Pinyon) (R034BY259UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

SLE—Aagard-Nathale-McCadden complex, 5 to 50 percent slopes, very stony

Map Unit Setting
National map unit symbol: 1jvzk
Elevation: 7,150 to 9,410 feet
Mean annual precipitation: 25 to 28 inches
Mean annual air temperature: 38 to 42 degrees F
Frost-free period: 50 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition
Aagard, very stony, and similar soils: 40 percent
Nathale, very stony, and similar soils: 25 percent
Mccadden, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aagard, Very Stony

Setting
Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Slope alluvium and/or colluvium derived from sedimentary rock over residuum weathered from limestone and shale

Typical profile
A1 - 0 to 4 inches: loam
A2 - 4 to 12 inches: loam
Bt1 - 12 to 17 inches: loam

Bt2 - 17 to 25 inches: cobbly clay loam
Btk - 25 to 31 inches: cobbly loam
Bk - 31 to 42 inches: gravelly loam
BCk - 42 to 65 inches: silty clay loam

Properties and qualities

Slope: 5 to 30 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Aspen) (F047XA508UT)
Hydric soil rating: No

Description of Nathale, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Concave
Parent material: Colluvium and/or slope alluvium derived from limestone, sandstone, and shale over residuum weathered from limestone and sandstone

Typical profile

A - 0 to 5 inches: channery loam
Bt - 5 to 8 inches: gravelly clay loam
Btk1 - 8 to 13 inches: gravelly clay loam
Btk2 - 13 to 21 inches: very channery clay loam
Bk - 21 to 25 inches: gravelly silty clay loam
BCk - 25 to 34 inches: very paragravelly clay loam
R - 34 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 50 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Mountain Big Sagebrush) (R047XA516UT)
Hydric soil rating: No

Description of Mccadden, Very Stony

Setting

Landform: Mountains
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from limestone, sandstone, and shale

Typical profile

A - 0 to 8 inches: very cobbly loam
Bk - 8 to 16 inches: very cobbly loam
R - 16 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 45 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.2 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: High Mountain Stony Clay (Slender Wheatgrass) (R047XA528UT)
Hydric soil rating: No

SPE—Aagard-Gilluly-McCadden complex, 10 to 70 percent slopes

Map Unit Setting

National map unit symbol: 1l9jz
Elevation: 6,300 to 10,500 feet
Mean annual precipitation: 24 to 28 inches
Mean annual air temperature: 38 to 42 degrees F
Frost-free period: 50 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition

Aagard and similar soils: 45 percent
Gilluly and similar soils: 30 percent
Mccadden and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aagard

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Slope alluvium and/or colluvium derived from sedimentary rock over residuum weathered from limestone and shale

Typical profile

A1 - 0 to 5 inches: loam
A2 - 5 to 14 inches: loam
Bt1 - 14 to 29 inches: clay loam
Bt2 - 29 to 35 inches: cobbly clay loam
Btk - 35 to 39 inches: gravelly loam
Bk - 39 to 45 inches: very gravelly loam
BCk1 - 45 to 54 inches: gravelly loam
BCk2 - 54 to 68 inches: gravelly silty clay loam
R - 68 to 72 inches: bedrock

Properties and qualities

Slope: 10 to 35 percent
Depth to restrictive feature: 59 to 76 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Aspen) (F048AY506UT)
Hydric soil rating: No

Description of Gilluly

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from sedimentary rock

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 5 inches: loam
Bt1 - 5 to 12 inches: clay loam
Bt2 - 12 to 18 inches: clay loam
Btk - 18 to 24 inches: cobbly clay loam
Bk - 24 to 29 inches: extremely cobbly clay loam
R - 29 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 70 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Douglas-fir) (F048AY509UT)
Hydric soil rating: No

Description of Mccadden

Setting

Landform: Mountains
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from limestone, sandstone, and shale

Typical profile

A - 0 to 5 inches: gravelly silt loam
AB - 5 to 13 inches: very cobbly loam
BCk - 13 to 16 inches: extremely cobbly loam
R - 16 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 45 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 16 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: High Mountain Gravelly Loam (Mountain Big Sagebrush) (R048AY518UT)
Hydric soil rating: No

TPG—Pathead-Averett-Modo association, 40 to 70 percent slopes, very stony

Map Unit Setting

National map unit symbol: 1jvxs
Elevation: 6,300 to 8,430 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F

Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Pathead, very stony, and similar soils: 40 percent
Averett, extremely stony, and similar soils: 30 percent
Modo, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pathead, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone and shale

Typical profile

A - 0 to 5 inches: very flaggy loam
Bw - 5 to 10 inches: very cobbly loam
BCk1 - 10 to 19 inches: very cobbly clay loam
BCk2 - 19 to 24 inches: cobbly clay loam
BCk3 - 24 to 30 inches: very channery loam
R - 30 to 60 inches: bedrock

Properties and qualities

Slope: 50 to 70 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 14 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Averett, Extremely Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave

Across-slope shape: Concave
Parent material: Colluvium and/or residuum weathered from sandstone and shale

Typical profile

A - 0 to 3 inches: very stony fine sandy loam
AB - 3 to 10 inches: stony loam
Bt - 10 to 19 inches: stony clay loam
Btk - 19 to 30 inches: very cobbly sandy clay loam
Bk - 30 to 44 inches: gravelly clay loam
BCk - 44 to 61 inches: very gravelly fine sandy loam
R - 61 to 65 inches: bedrock

Properties and qualities

Slope: 50 to 70 percent
Percent of area covered with surface fragments: 12.0 percent
Depth to restrictive feature: 60 to 96 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Browse) (R048AY451UT)
Hydric soil rating: No

Description of Modo, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 2 inches: very flaggy fine sandy loam
Bw - 2 to 8 inches: gravelly loam
R - 8 to 60 inches: bedrock

Properties and qualities

Slope: 40 to 70 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 4 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Very low (about 1.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Very Steep Stony Loam (Browse) (R048AY473UT)
Hydric soil rating: No

VJH2—Whetrock, extremely stony-Rock outcrop-Tyzut, rubbly complex, 50 to 80 percent slopes

Map Unit Setting

National map unit symbol: 2p26b
Elevation: 6,000 to 8,530 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Whetrock, extremely stony, and similar soils: 40 percent
Rock outcrop: 25 percent
Tyzut, rubbly, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Whetrock, Extremely Stony

Setting

Landform: Mountains
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 4 inches: very channery loam
A2 - 4 to 12 inches: channery loam
Bk1 - 12 to 20 inches: very channery loam

Bk2 - 20 to 28 inches: extremely channery sandy clay loam
Cr - 28 to 60 inches: bedrock

Properties and qualities

Slope: 50 to 80 percent
Percent of area covered with surface fragments: 12.0 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 45 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: C
Ecological site: Upland Very Steep Stony Loam (Pinyon-Utah Juniper) (R048AY344UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Tyzut, Rubbly

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and colluvium over residuum weathered from limestone, sandstone, and shale

Typical profile

A - 0 to 5 inches: extremely flaggy sandy loam
Bk1 - 5 to 13 inches: extremely channery loam
Bk2 - 13 to 19 inches: extremely channery sandy loam
R - 19 to 60 inches: bedrock

Properties and qualities

Slope: 50 to 80 percent
Percent of area covered with surface fragments: 25.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Upland Very Steep Shallow Loam (Pinyon-Utah Juniper) (R048AY342UT)
Hydric soil rating: No

WRD—Walknolls-Gerst-Lanver complex, 5 to 60 percent slopes

Map Unit Setting
National map unit symbol: 2mxb2
Elevation: 5,410 to 6,200 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition
Walknolls and similar soils: 40 percent
Gerst and similar soils: 35 percent
Lanver and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walknolls

Setting
Landform: Hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from calcareous sandstone

Typical profile
A - 0 to 3 inches: very channery fine sandy loam
Bk - 3 to 10 inches: extremely channery fine sandy loam

R - 10 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 35 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 0.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Black Sagebrush) (R034BY227UT)
Hydric soil rating: No

Description of Gerst

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from sedimentary rock over residuum weathered from shale

Typical profile

A - 0 to 2 inches: very channery loam
BC - 2 to 7 inches: parachannery loam
C - 7 to 10 inches: very parachannery clay loam
Cr - 10 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 60 percent
Depth to restrictive feature: 6 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Black Sagebrush) (R034BY227UT)
Hydric soil rating: No

Description of Lanver

Setting
Landform: Hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Eolian deposits and/or slope alluvium derived from sedimentary rock over residuum weathered from sandstone and shale

Typical profile
A - 0 to 4 inches: very channery fine sandy loam
Bk - 4 to 8 inches: channery loam
Bkn1 - 8 to 13 inches: very channery loam
Bkn2 - 13 to 15 inches: very channery fine sandy loam
Bky - 15 to 26 inches: extremely flaggy fine sandy loam
R - 26 to 60 inches: bedrock

Properties and qualities
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 45 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 15.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 14.0
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Semidesert Gravelly Sandy Loam (Wyoming Big Sagebrush) (R034BY206UT)
Hydric soil rating: No

WUD—Walknolls, extremely stony-Lanver-Honlu complex, 4 to 20 percent slopes

Map Unit Setting

National map unit symbol: 2dw54
Elevation: 5,770 to 7,050 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Walknolls, extremely stony, and similar soils: 45 percent
Lanver and similar soils: 20 percent
Honlu and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walknolls, Extremely Stony

Setting

Landform: Hills on structural benches
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Slope alluvium and/or residuum weathered from calcareous sandstone

Typical profile

A - 0 to 2 inches: very gravelly sandy loam
Bk1 - 2 to 5 inches: very gravelly fine sandy loam
Bk2 - 5 to 9 inches: extremely gravelly fine sandy loam
Bk3 - 9 to 14 inches: extremely gravelly sandy loam
R - 14 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 20 percent
Percent of area covered with surface fragments: 5.0 percent
Depth to restrictive feature: 4 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 0.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Hydric soil rating: No

Description of Lanver

Setting

Landform: Escarpments
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium derived from sandstone over residuum weathered from sandstone

Typical profile

A - 0 to 5 inches: very channery fine sandy loam
Bk1 - 5 to 16 inches: channery loam
Bk2 - 16 to 24 inches: very channery loam
Bkn - 24 to 32 inches: very channery loam
Bkny - 32 to 35 inches: very channery fine sandy loam
R - 35 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 20 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.21 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 30 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 12.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 40.0
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Semidesert Gravelly Sandy Loam (Wyoming Big Sagebrush) (R034BY206UT)
Hydric soil rating: No

Description of Honlu

Setting

Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex

Parent material: Slope alluvium derived from limestone, sandstone, and shale and/or quartzite

Typical profile

A - 0 to 3 inches: gravelly loam
Bw - 3 to 4 inches: gravelly loam
Bk1 - 4 to 12 inches: gravelly loam
Bk2 - 12 to 17 inches: loam
Bk3 - 17 to 28 inches: loam
BCk1 - 28 to 39 inches: gravelly loam
BCk2 - 39 to 60 inches: gravelly loam

Properties and qualities

Slope: 4 to 10 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034BY212UT)
Hydric soil rating: No

Uintah and Ouray Indian Reservation, Utah

NOTCOM—No Digital Data Available

Map Unit Composition

Notcom: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Notcom

Properties and qualities

Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties

12—Badland-Rock outcrop complex, 1 to 100 percent slopes

Map Unit Composition

Badland: 50 percent
Rock outcrop: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Badland

Setting

Landform: Hills, ridges, erosion remnants
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

C - 0 to 2 inches: clay
Cr - 2 to 12 inches: bedrock

Properties and qualities

Slope: 1 to 75 percent
Depth to restrictive feature: 0 to 6 inches to paralithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 20.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0
Available water storage in profile: Very low (about 0.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Erosion remnants, ledges, cliffs, escarpments
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

H1 - 0 to 60 inches: bedrock

Properties and qualities

Slope: 1 to 100 percent
Depth to restrictive feature: 0 to 4 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)

Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Montwel

Percent of map unit: 5 percent
Hydric soil rating: No

Walknolls, very channery sandy loam

Percent of map unit: 5 percent
Ecological site: Semidesert Shallow Loam (Black Sagebrush) (R034XY227UT)
Hydric soil rating: No

Cadrina, extremely channery loam

Percent of map unit: 5 percent
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)
Hydric soil rating: No

27—Boreham loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: jz22
Elevation: 4,800 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Boreham and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boreham

Setting

Landform: Strath terraces, fan remnants
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave
Across-slope shape: Linear, convex
Parent material: Loamy alluvium over loamy-skeletal alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

Ap - 0 to 13 inches: loam
Bk1 - 13 to 26 inches: loam

Bk2 - 26 to 49 inches: loam
2Bk3 - 49 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): 2c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

Minor Components

Blackston

Percent of map unit: 8 percent
Hydric soil rating: No

Crib

Percent of map unit: 7 percent
Hydric soil rating: No

62—Crustown-Motto complex, 2 to 25 percent slopes

Map Unit Setting

National map unit symbol: jz3v
Elevation: 4,700 to 5,700 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Crustown and similar soils: 50 percent
Motto and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crustown

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian deposits over residuum derived from calcareous sandstone

Typical profile

A - 0 to 5 inches: sand
C - 5 to 16 inches: loamy sand
Cr - 16 to 22 inches: bedrock
R - 22 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Sand (Fourwing Saltbush) (R034XY112UT)
Other vegetative classification: Desert Sand (Fourwing Saltbush) (034XY112UT_1)
Hydric soil rating: No

Description of Motto

Setting

Landform: Hills, structural benches
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Slope alluvium over residuum derived from shale and sandstone

Typical profile

E - 0 to 2 inches: very flaggy loam
Btkn - 2 to 12 inches: clay loam
Bk - 12 to 14 inches: clay loam
2C - 14 to 17 inches: extremely channery clay loam
2R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 60.0
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)
Other vegetative classification: Desert Shallow Clay (Mat Saltbush) (034XY117UT_1)
Hydric soil rating: No

Minor Components

Cadrina, extremely stony loam

Percent of map unit: 8 percent
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034XY118UT)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 7 percent
Hydric soil rating: No

94—Greybull-Utaline-Badland complex, 8 to 50 percent slopes

Map Unit Setting

National map unit symbol: jz4z
Elevation: 4,700 to 5,500 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Greybull and similar soils: 40 percent

Utaline and similar soils: 35 percent
Badland: 10 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Greybull

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and colluvium over residuum derived from shale

Typical profile

A - 0 to 2 inches: very cobbly sandy loam
C - 2 to 35 inches: clay loam
Cr - 35 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 50 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)
Hydric soil rating: No

Description of Utaline

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

A - 0 to 3 inches: very gravelly sandy loam
Bw - 3 to 7 inches: very gravelly loam
Bk - 7 to 60 inches: very gravelly loam

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

Description of Badland

Setting

Landform: Ridges, erosion remnants, hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

C - 0 to 2 inches: clay
Cr - 2 to 12 inches: bedrock

Properties and qualities

Slope: 8 to 50 percent
Depth to restrictive feature: 0 to 2 inches to paralithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 20.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0
Available water storage in profile: Very low (about 0.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Motto
Percent of map unit: 4 percent
Hydric soil rating: No

Muff
Percent of map unit: 4 percent
Hydric soil rating: No

Leebench
Percent of map unit: 4 percent
Hydric soil rating: No

Endoaquolls
Percent of map unit: 3 percent
Landform: Scarps
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Wet Fresh Streambank (Willow) (R034XY021UT)
Hydric soil rating: Yes

128—Leebench sandy loam, 2 to 8 percent slopes

Map Unit Setting
National map unit symbol: jyx0
Elevation: 4,590 to 5,400 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition
Leebench and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Leebench

Setting
Landform: Fan remnants, strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Convex, linear
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile
E - 0 to 2 inches: sandy loam

Btn - 2 to 9 inches: clay loam
Btkn - 9 to 21 inches: clay loam
2Bkn1 - 21 to 36 inches: very gravelly loam
2Bkn2 - 36 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 1 to 2 inches to natric
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.07 to 0.21 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 13.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: Very low (about 0.2 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: C
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034BY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Minor Components

Shotnick

Percent of map unit: 5 percent
Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034BY115UT)
Hydric soil rating: No

Ohtog

Percent of map unit: 5 percent
Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Loamy Bottom (Basin Big Sagebrush) (R034BY009UT)
Hydric soil rating: No

Blackston

Percent of map unit: 5 percent
Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

129—Leeko loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: jyx1
Elevation: 4,800 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Leeko and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Leeko

Setting

Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

E - 0 to 2 inches: loam
Btn - 2 to 7 inches: clay loam
Btkn - 7 to 16 inches: clay loam
Bk - 16 to 56 inches: clay loam
2Bky - 56 to 60 inches: very cobbly clay loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 40.0
Available water storage in profile: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Minor Components

Shotnick
Percent of map unit: 4 percent
Hydric soil rating: No

Blackston
Percent of map unit: 4 percent
Hydric soil rating: No

Nakoy
Percent of map unit: 4 percent
Hydric soil rating: No

Muff, gravelly sandy loam
Percent of map unit: 3 percent
Hydric soil rating: No

153—Motto-Muff-Rock outcrop complex, 2 to 25 percent slopes

Map Unit Setting
National map unit symbol: jyxx
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition
Motto and similar soils: 40 percent
Muff and similar soils: 35 percent
Rock outcrop: 10 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Motto

Setting
Landform: Hills, structural benches
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Slope alluvium over residuum derived from shale and sandstone

Typical profile

E - 0 to 2 inches: very flaggy loam
Btkn - 2 to 12 inches: clay loam
Bk - 12 to 14 inches: clay loam
2C - 14 to 17 inches: extremely channery clay loam
2R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 60.0
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)
Other vegetative classification: Desert Shallow Clay (Mat Saltbush) (034XY117UT_1)
Hydric soil rating: No

Description of Muff

Setting

Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium over residuum derived from shale

Typical profile

A1 - 0 to 2 inches: gravelly sandy loam
A2 - 2 to 7 inches: sandy loam
Btn - 7 to 14 inches: sandy clay loam
C - 14 to 29 inches: clay loam
Cr - 29 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 40.0
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Ledges, cliffs, escarpments, erosion remnants
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

H1 - 0 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Cadrina, extremely channery loam

Percent of map unit: 3 percent
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)
Hydric soil rating: No

Badland

Percent of map unit: 3 percent
Hydric soil rating: No

Uffens, sandy loam

Percent of map unit: 3 percent
Ecological site: Alkali Flat (Greasewood) (R034XY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)

Hydric soil rating: No

Crustown

Percent of map unit: 2 percent
Hydric soil rating: No

Montwel, clay loam

Percent of map unit: 2 percent
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)
Hydric soil rating: No

Jenrid

Percent of map unit: 2 percent
Hydric soil rating: No

154—Motto-Rock outcrop complex, 2 to 25 percent slopes

Map Unit Setting

National map unit symbol: jyxy
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Motto and similar soils: 75 percent
Rock outcrop: 10 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Motto

Setting

Landform: Hills, structural benches
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Slope alluvium over residuum derived from shale and sandstone

Typical profile

E - 0 to 2 inches: very flaggy loam
Btkn - 2 to 12 inches: clay loam
Bk - 12 to 14 inches: clay loam
2C - 14 to 17 inches: extremely channery clay loam
2R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 60.0
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)
Other vegetative classification: Desert Shallow Clay (Mat Saltbush) (034XY117UT_1)
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Escarpments, erosion remnants, ledges, cliffs
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

H1 - 0 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Crustown

Percent of map unit: 3 percent
Hydric soil rating: No

Cadrina, extremely stony loam

Percent of map unit: 3 percent
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034XY118UT)
Hydric soil rating: No

Cakehill
Percent of map unit: 3 percent
Hydric soil rating: No

Uffens, loam
Percent of map unit: 3 percent
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Badland
Percent of map unit: 3 percent
Hydric soil rating: No

160—Nakoy loamy fine sand, 1 to 5 percent slopes

Map Unit Setting
National map unit symbol: jyy5
Elevation: 4,700 to 5,300 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Nakoy and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nakoy

Setting
Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Eolian deposits over alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile
A - 0 to 14 inches: loamy fine sand
Bw - 14 to 25 inches: sandy loam
Bk - 25 to 72 inches: sandy loam
BCk - 72 to 80 inches: sandy loam

Properties and qualities
Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034XY115UT)
Hydric soil rating: No

Minor Components

Hiko springs

Percent of map unit: 8 percent
Hydric soil rating: No

Tipperary

Percent of map unit: 7 percent
Hydric soil rating: No

229—Tipperary loamy fine sand, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: jz0m
Elevation: 4,700 to 5,800 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Tipperary and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tipperary

Setting

Landform: Structural benches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from sandstone

Typical profile

A - 0 to 4 inches: loamy fine sand
C - 4 to 60 inches: loamy fine sand

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Desert Sand (Fourwing Saltbush) (R034XY112UT)
Other vegetative classification: Desert Sand (Fourwing Saltbush) (034XY112UT_1)
Hydric soil rating: No

Minor Components

Ohtog

Percent of map unit: 7 percent
Hydric soil rating: No

Utaline

Percent of map unit: 7 percent
Hydric soil rating: No

Nakoy

Percent of map unit: 1 percent

248—Uffens loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: jz19
Elevation: 4,700 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Uffens and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Uffens

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone, limestone, and shale

Typical profile

E - 0 to 1 inches: loam
Btn - 1 to 15 inches: clay loam
BCy1 - 15 to 27 inches: clay loam
BCy2 - 27 to 47 inches: loam
Btnyb - 47 to 65 inches: clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 50.0
Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Minor Components

Hanksville, silty clay loam

Percent of map unit: 8 percent
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)
Other vegetative classification: Desert Shallow Clay (Mat Saltbush) (034XY117UT_1)
Hydric soil rating: No

Turzo, clay loam

Percent of map unit: 7 percent
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

255—Utaline very gravelly sandy loam, 8 to 25 percent slopes

Map Unit Setting

National map unit symbol: jz1k
Elevation: 4,700 to 5,700 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Utaline and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Utaline

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

A - 0 to 3 inches: very gravelly sandy loam
Bw - 3 to 7 inches: very gravelly loam
Bk - 7 to 60 inches: very gravelly loam

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

Minor Components

Hiko springs

Percent of map unit: 5 percent
Hydric soil rating: No

Greybull, clay loam

Percent of map unit: 5 percent
Hydric soil rating: No

Nolava

Percent of map unit: 5 percent
Hydric soil rating: No

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APPENDIX E-3

Custom Soil Resource Report for the
Wells Draw Alternative Study Area

United States Department of Agriculture

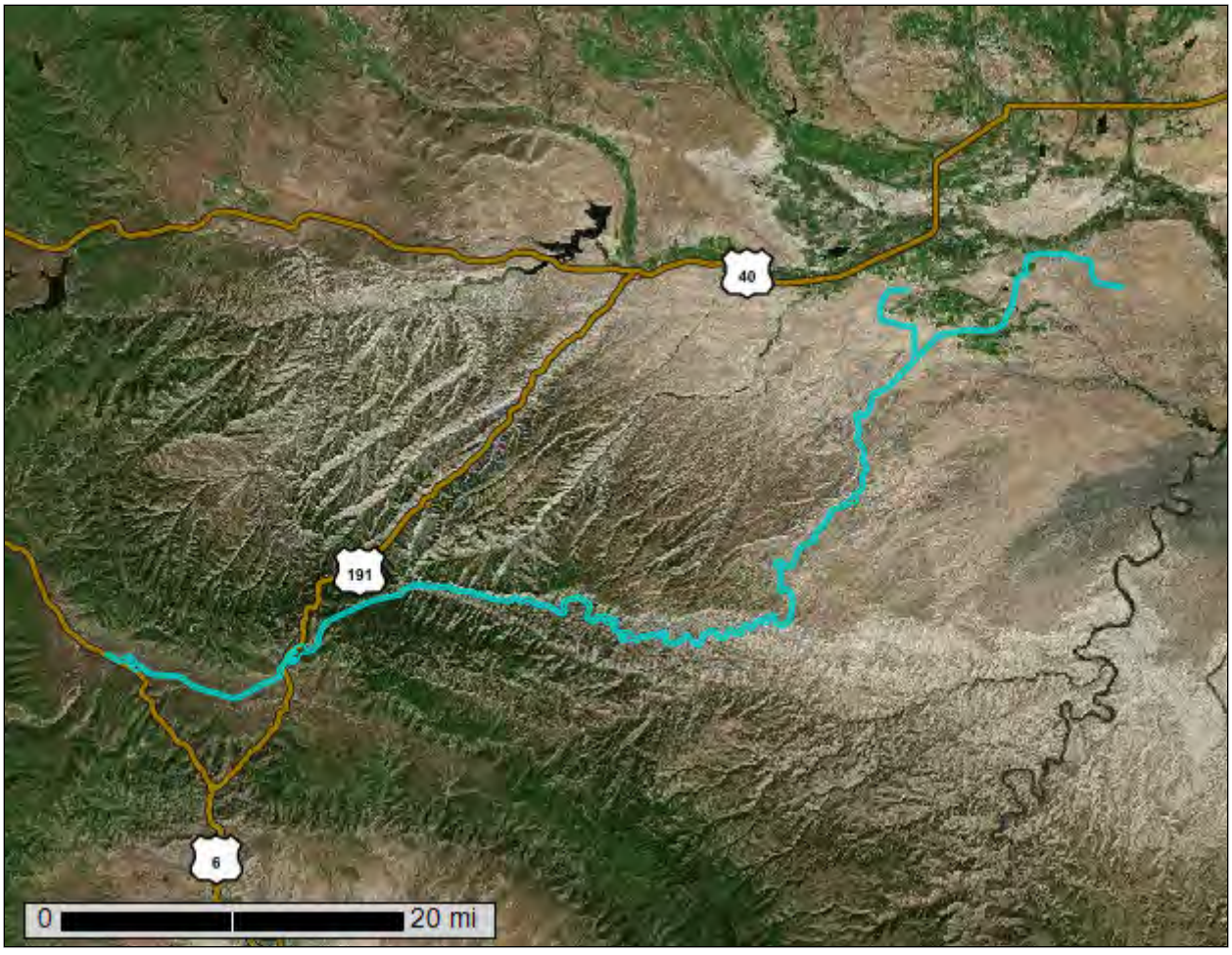
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Carbon Area, Utah, Parts of Carbon and Emery Counties; Duchesne Area, Utah, Parts of Duchesne, Utah, and Wasatch Counties; and Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties

Wells Draw Alternative



December 17, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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TFB—Toddhill-Jagon-Cedarknoll complex, 2 to 8 percent slopes.....128
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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

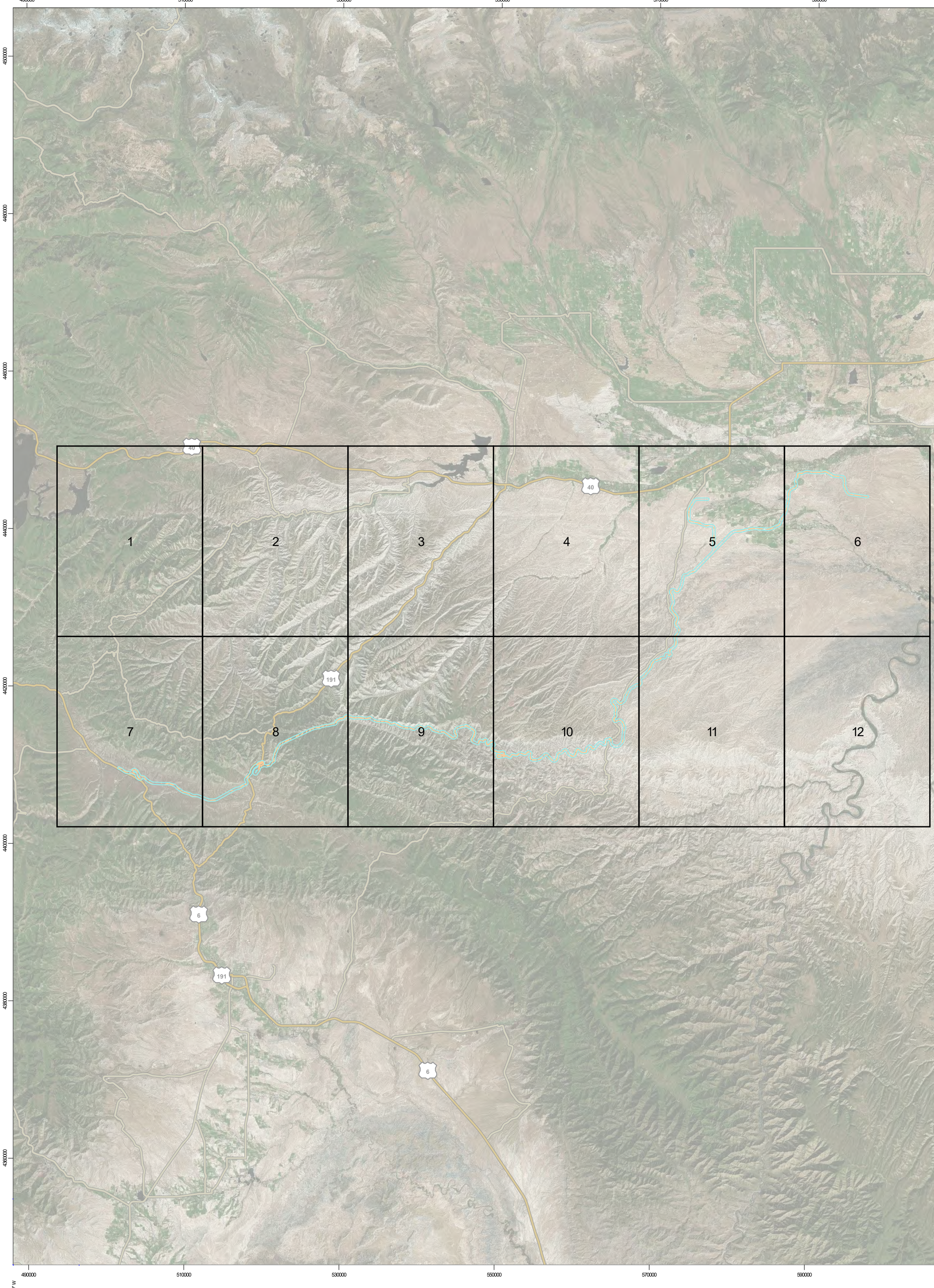
Custom Soil Resource Report
Soil Map
Index Sheet

111° 8' 19" W — 109° 42' 13" W

40° 42' 20" N — 39° 16' 3" N

490000 510000 530000 550000 570000 590000 610000

4500000 4480000 4460000 4440000 4420000 4400000 4380000 4360000



Map Scale: 1:330,000 if printed on C portrait (17" x 22") sheet.

N

Meters: 0 4500 9000 18000 27000

Feet: 0 15000 30000 60000 90000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

111° 4' 24" W
110° 51' 21" W
40° 12' 28" N
39° 59' 25" N
494000
497000
500000
503000
506000
509000
512000
4449000
4446000
4443000
4440000
4437000
4434000
4431000
4428000

Deep Creek
Soldier Creek
Willow Creek
Right Fork White River
Minnie Creek

Joins sheet 2
Joins sheet 7
Joins sheet 8

Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.
Meters
0 500 1000 2000 3000
Feet
0 2000 4000 8000 12000
N
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location

Custom Soil Resource Report
Soil Map
Map sheet 2 of 12

110° 51' 21" W
110° 38' 19" W
40° 12' 28" N
39° 59' 25" N
514000
517000
520000
523000
526000
529000
4449000
4446000
4443000
4440000
4437000
4434000
4431000
4428000
Red Creek
Minnie Creek
40
Joins sheet 1
Joins sheet 3
Joins sheet 7
Joins sheet 8
Joins sheet 9

Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.
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Meters
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Feet
0 2000 4000 8000 12000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location

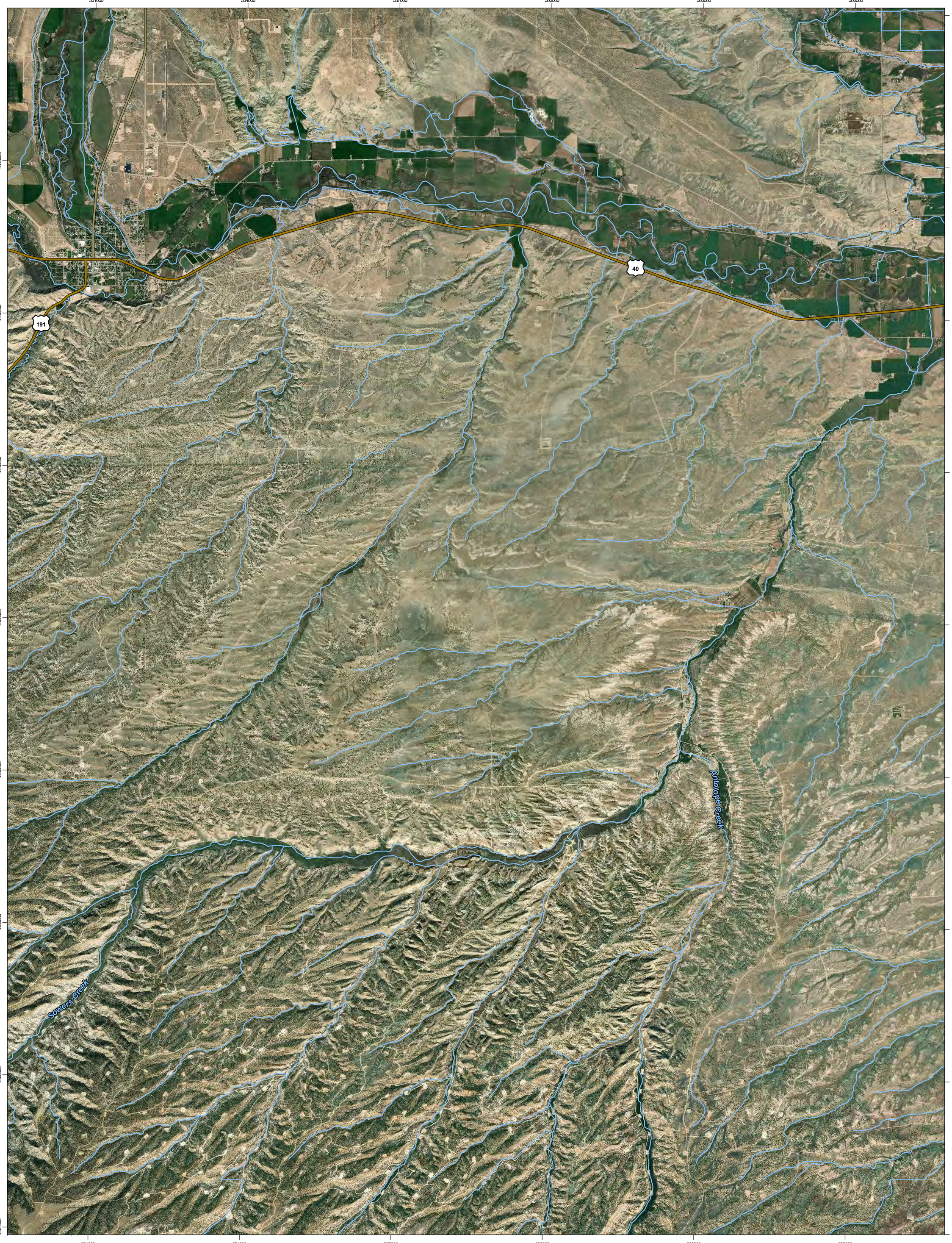
Custom Soil Resource Report
Soil Map
Map sheet 3 of 12

110° 38' 19" W
110° 25' 16" W
40° 12' 28" N
39° 59' 25" N
531000
534000
537000
540000
543000
546000
549000
4449000
4446000
4443000
4440000
4437000
4434000
4431000
4428000
Strawberry River
Cripple Creek
40
191
Joins sheet 2
Joins sheet 4
Joins sheet 8
Joins sheet 9
Joins sheet 10

Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.
N
Meters
0 500 1000 2000 3000
Feet
0 2000 4000 8000 12000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location
3

110° 25' 16" W
110° 12' 13" W
40° 12' 28" N
39° 59' 25" N
551000
554000
557000
560000
563000
566000
4451000
4448000
4445000
4442000
4439000
4436000
4433000
4430000
4427000



Joins sheet 3
Joins sheet 5
Joins sheet 9
Joins sheet 10
Joins sheet 11

Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.
Meters
0 500 1000 2000 3000
Feet
0 2000 4000 8000 12000
N
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location
4

110° 12' 13" W
109° 59' 11" W
40° 12' 28" N
39° 59' 25" N
568000
571000
574000
577000
580000
583000
586000
4451000
4448000
4445000
4442000
4439000
4436000
4433000
4430000
4427000

40
NOTCOM
27
94
62
123
243
MaB
38
154
130
120
285
12
179
RAL
142
264
266
Joins sheet 4
Joins sheet 6
Joins sheet 10
Joins sheet 11
Joins sheet 12

Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.
Meters
0 500 1000 2000 3000
Feet
0 2000 4000 8000 12000
N
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location
5


109° 59' 11" W
109° 46' 8" W
40° 12' 28" N
587000
590000
593000
596000
599000
602000
4450000
4447000
4444000
4441000
4438000
4435000
4432000
4429000
251
129
242
209
41
229
129
12
243
205
209
229
229
37
153
128
154
153
128
229
153
128
128
94
128
154
153
94
27
153
160
27
255
255
255
255
160
27
128
94
123
158
248
123
128
248
248
128
248
248
120
NOTCOM
120
NOTCOM
120
62
62
12
285
62
242
154
229
39° 59' 25" N
Green River
Joins sheet 5
Joins sheet 11
Joins sheet 12
Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.
N
Meters
0 500 1000 2000 3000
Feet
0 2000 4000 8000 12000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84
6
Map Sheet Location

Joins sheet 1

111° 4' 24" W

110° 51' 21" W

Joins sheet 2

494000 497000 500000 503000 506000 509000 512000

39° 59' 25" N

4425000 4422000 4419000 4416000 4413000 4410000 4407000 4404000

Joins sheet 8

39° 46' 19" N

West Fork Avintaquin Creek
Johnson Fork
Right Fork White River
Tabbyune Creek
Kyune Creek
Bear Creek
Right Fork Kyune Creek
Horse Creek
Ford Creek
Price River
Price River
6
7
116

DLC DLC DRB EMF DLC EOC DSB DSB EMF DRB DLC EMF DSB EOC EMF DRB DRB DJE DJE DKF DKF DLC DJE EMF EMF EMF DLC EMF DLC DLC EMF DLC NLE

Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.

N

0 500 1000 2000 3000 Meters

0 2000 4000 8000 12000 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

7

Map Sheet Location

Custom Soil Resource Report
Soil Map
Map sheet 8 of 12

Joins sheet 1
Joins sheet 2
Joins sheet 3
Joins sheet 7
Joins sheet 9

110° 51' 21" W
110° 49' 58" W
110° 38' 19" W
39° 59' 25" N
39° 46' 19" N
514000
517000
520000
523000
526000
529000
4425000
4422000
4419000
4416000
4413000
4410000
4407000
4404000

Sixmile Creek
Willow Creek
West Fork Willow Creek
Minnie Maud Creek
Dry Fork
191
198
116
7

NOTCOM
KUA
SPE
MXE
DLC
QuG
DOC
SLE
DPG
LUE
ENE
EMF
NLE

Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.
Meters: 0 500 1000 2000 3000
Feet: 0 2000 4000 8000 12000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location
8

Joins sheet 2
Joins sheet 3
Joins sheet 4
Joins sheet 8
Joins sheet 10

110° 38' 19" W
110° 25' 16" W
39° 59' 25" N
39° 46' 19" N
531000
534000
537000
540000
543000
546000
549000
4425000
4422000
4419000
4416000
4413000
4410000
4407000
4404000

191
Big Trough Creek
Sowers Creek
Sowers Creek
Argyle Creek

NOTCOM 198 QuG QaD QaG CPD DLC DOC MXE JZE2 GOF OCE

Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location
9

Custom Soil Resource Report
Soil Map
Map sheet 10 of 12

Joins sheet 3
Joins sheet 4
Joins sheet 5
Joins sheet 9
Joins sheet 11

110° 25' 16" W
110° 12' 13" W
39° 59' 25" N
39° 46' 19" N
550000
553000
556000
559000
562000
565000
568000
4425000
4422000
4419000
4416000
4413000
4410000
4407000
4404000

Antelope Creek
Argyle Creek
Nine Mile Creek

Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.

N

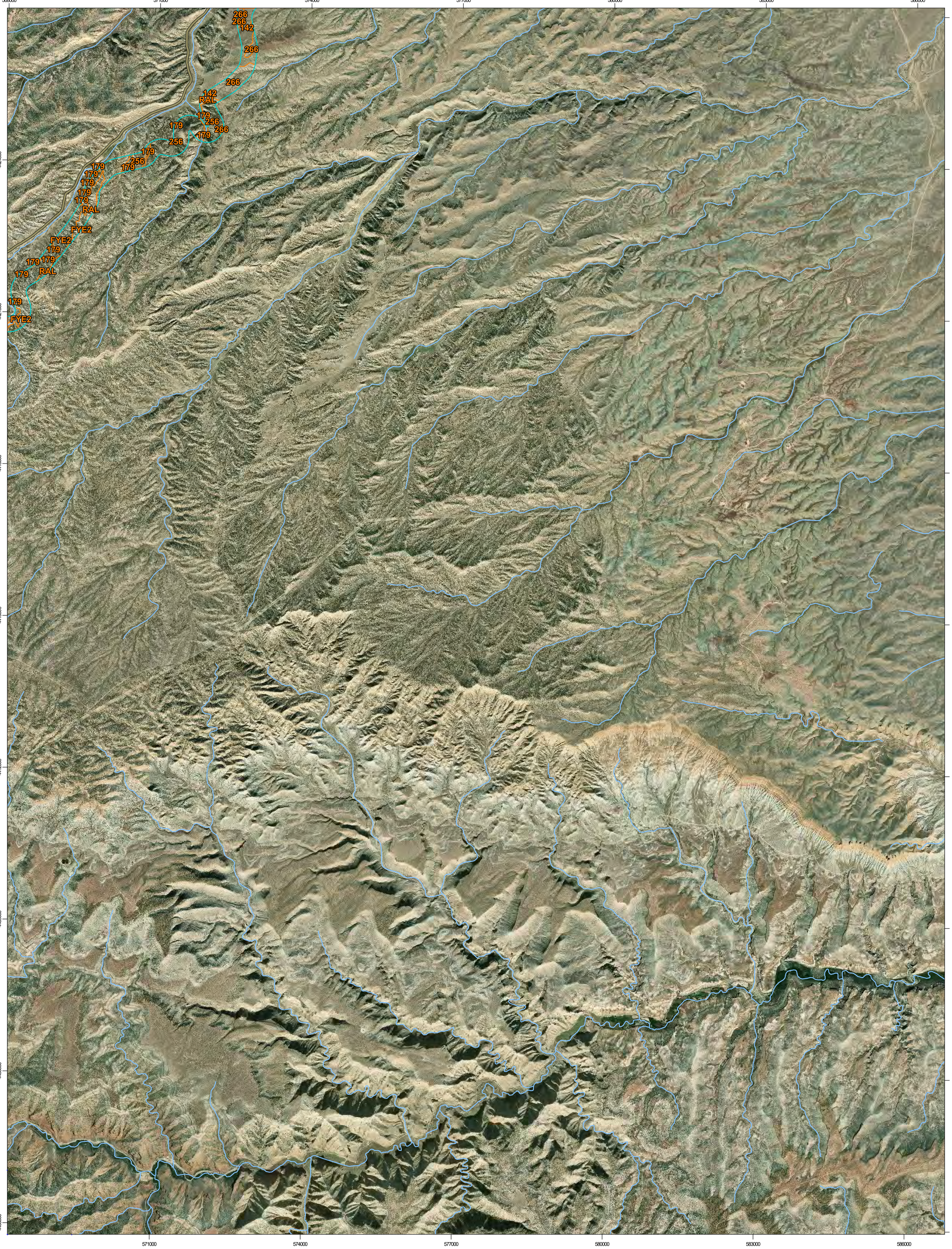
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Feet
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Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location
10

Joins sheet 4
Joins sheet 5
Joins sheet 6
Joins sheet 10
Joins sheet 12



Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location

Custom Soil Resource Report
Soil Map
Map sheet 12 of 12

Joins sheet 6

Joins sheet 5

109° 59' 11" W

109° 46' 8" W

587000 590000 593000 596000 599000 602000 605000

39° 59' 25" N

4427000 4424000 4421000 4418000 4415000 4412000 4409000 4406000 4403000

Joins sheet 11

Green River

Green River

Nine Mile Creek

39° 46' 19" N

Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location

12

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Carbon Area, Utah, Parts of Carbon and Emery Counties
Survey Area Data: Version 11, Sep 16, 2019

Soil Survey Area: Duchesne Area, Utah, Parts of Duchesne, Utah, and Wasatch Counties
Survey Area Data: Version 6, Sep 16, 2019

Soil Survey Area: Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties
Survey Area Data: Version 14, Sep 16, 2019

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

MAP LEGEND

MAP INFORMATION

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7	Beje-Trag complex	80.3	0.6%
116	Trag-Beje-Rottulee family complex	448.9	3.6%
Subtotals for Soil Survey Area		**529.2**	**4.2%**
Totals for Area of Interest		**12,475.3**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12	Badland-Rock outcrop complex, 1 to 100 percent slopes	23.2	0.2%
21	Bigpack loam, 2 to 15 percent slopes	8.1	0.1%
27	Boreham loam, 0 to 4 percent slopes	939.2	7.5%
38	Cadrina, extremely stony-Casmos-Rock outcrop complex, 2 to 40 percent slopes	174.4	1.4%
62	Crustown-Motto complex, 0 to 25 percent slopes	132.4	1.1%
94	Greybull-Utaline-Badland complex, 4 to 40 percent slopes	6.8	0.1%
120	Jenrid sandy loam, 0 to 4 percent slopes	50.0	0.4%
123	Kilroy loam, 1 to 8 percent slopes	72.1	0.6%
130	Leeko-Boreham complex, 0 to 4 percent slopes	103.2	0.8%
142	Smithpond-Montwel-Badland complex, 4 to 15 percent slopes	267.0	2.1%
154	Motto-Rock outcrop complex, 2 to 25 percent slopes	130.0	1.0%
179	Pherson-Hickerson complex, 1 to 8 percent slopes	146.7	1.2%
198	Saddlehorse-Rock outcrop-Pathead complex, 40 to 80 percent slopes	222.6	1.8%
229	Tipperary loamy fine sand, 1 to 8 percent slopes	1.2	0.0%
242	Turzo clay loam, 0 to 4 percent slopes	18.2	0.1%
243	Turzo-Umbo complex, 0 to 2 percent slopes	47.8	0.4%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
256	Walknolls extremely channery sandy loam, 4 to 25 percent slopes	196.0	1.6%
264	Walknolls-Rock outcrop complex, 2 to 40 percent slopes	32.0	0.3%
266	Walknolls-Uendal complex, 2 to 25 percent slopes	592.0	4.7%
285	Water	6.4	0.1%
CPD	Sowers-Rabbitex-Tyzut complex, 6 to 40 percent slopes	292.4	2.3%
DJE	Avintaquin, extremely stony-Floak-Paunsaugunt, very stony complex, 8 to 15 percent slopes	8.3	0.1%
DKF	Paunsaugunt, extremely stony-Helper-Rock outcrop complex, 10 to 50 percent slopes	3.7	0.0%
DLC	Osote-Winspect complex, 2 to 20 percent slopes	454.5	3.6%
DOC	Lostminer-McCadden-Bickmore complex, 4 to 40 percent slopes	19.5	0.2%
DPG	Pathead, very stony-Minnimaud-Saddlehorse, extremely bouldery association, 20 to 60 percent slopes	0.9	0.0%
DRB	Peatross, occasionally flooded-Cookcan, occasionally flooded-Osote complex, 0 to 15 percent slopes	72.0	0.6%
DSB	Brycan loam, 3 to 20 percent slopes	14.1	0.1%
EMF	Gremo-Kyune-Rock outcrop complex, 10 to 60 percent slopes	159.4	1.3%
ENE	Kyune-Weed-Paunsaugunt complex, 10 to 60 percent slopes, very stony	24.2	0.2%
EOC	Kyune, extremely stony-Tycreek-Clyl, extremely stony complex, 4 to 25 percent slopes	178.9	1.4%
FXD2	Splimo-Gerst complex, 3 to 20 percent slopes	11.4	0.1%
FYE2	Walknolls-Cheeta-Honlu complex, 8 to 25 percent slopes	489.8	3.9%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GOF	Gompers-Rock outcrop-Tabyago, extremely bouldery complex, 25 to 80 percent slopes	14.8	0.1%
JZE2	Cedarknoll-Tabyago-Whitesage association, 2 to 25 percent slopes	912.9	7.3%
KUA	Silas loam, 2 to 15 percent slopes	120.3	1.0%
LaD	Whitesage-Dancehall complex, 3 to 20 percent slopes	106.2	0.9%
LUE	Tycreek, extremely stony-Beje, very stony-Senchert complex, 4 to 40 percent slopes	391.7	3.1%
LYG3	Gerst-Walknolls, very stony complex, 10 to 60 percent slopes	730.4	5.9%
MaB	Mikim loam, 3 to 5 percent slopes	26.4	0.2%
MXE	Tosca-Paunsaugunt-Minnimaud complex, 20 to 55 percent slopes	343.5	2.8%
NLE	Howbert-Beje-Kyune complex, 4 to 40 percent slopes, very stony	165.7	1.3%
NOTCOM	No Digital Data Available	1,103.9	8.8%
NXE	Tyzut-Rabbitex complex, 10 to 55 percent slopes	64.1	0.5%
OCE	Rencot very channery loam, 5 to 50 percent slopes	42.2	0.3%
QaD	Rabbitex-Sowers-Rangecreek complex, 5 to 40 percent slopes	581.8	4.7%
QaG	Rangecreek, very stony-Gompers-Sowers complex, 35 to 80 percent slopes	424.0	3.4%
QuG	Wiggler-Badland-Helper complex, 40 to 80 percent slopes, very stony	205.8	1.6%
RAL	Cheeta-Rock outcrop complex, 30 to 80 percent slopes	149.9	1.2%
SLE	Aagard-Nathale-McCadden complex, 5 to 50 percent slopes, very stony	11.6	0.1%
SPE	Aagard-Gilluly-McCadden complex, 10 to 70 percent slopes	611.6	4.9%
TFB	Toddhill-Jagon-Cedarknoll complex, 2 to 8 percent slopes	10.7	0.1%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
TPG	Pathead-Averett-Modo association, 40 to 70 percent slopes, very stony	6.4	0.1%
Subtotals for Soil Survey Area		**10,922.5**	**87.6%**
Totals for Area of Interest		**12,475.3**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12	Badland-Rock outcrop complex, 1 to 100 percent slopes	9.4	0.1%
27	Boreham loam, 0 to 2 percent slopes	68.4	0.5%
37	Cadrina-Badland-Rock outcrop complex, 25 to 50 percent slopes	22.7	0.2%
41	Cakehill sandy loam, 2 to 5 percent slopes	10.9	0.1%
62	Crustown-Motto complex, 2 to 25 percent slopes	1.0	0.0%
94	Greybull-Utaline-Badland complex, 8 to 50 percent slopes	126.6	1.0%
120	Jenrid sandy loam, 0 to 2 percent slopes	50.8	0.4%
123	Kilroy loam, 1 to 4 percent slopes	11.2	0.1%
128	Leebench sandy loam, 2 to 8 percent slopes	102.4	0.8%
129	Leeko loam, 0 to 4 percent slopes	87.0	0.7%
153	Motto-Muff-Rock outcrop complex, 2 to 25 percent slopes	125.5	1.0%
154	Motto-Rock outcrop complex, 2 to 25 percent slopes	26.8	0.2%
158	Muff gravelly sandy loam, 2 to 8 percent slopes	19.8	0.2%
160	Nakoy loamy fine sand, 1 to 5 percent slopes	64.8	0.5%
205	Shotnick loamy sand, 0 to 4 percent slopes	6.3	0.1%
209	Shotnick-Walkup complex, 0 to 2 percent slopes	57.7	0.5%
229	Tipperary loamy fine sand, 1 to 8 percent slopes	69.1	0.6%
242	Turzo loam, 0 to 4 percent slopes	4.9	0.0%
243	Turzo-Umbo complex, 0 to 2 percent slopes	22.6	0.2%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
248	Uffens loam, 0 to 3 percent slopes	80.6	0.6%
251	Umbo clay loam, 0 to 2 percent slopes	23.7	0.2%
255	Utaline very gravelly sandy loam, 8 to 25 percent slopes	31.4	0.3%
Subtotals for Soil Survey Area		**1,023.6**	**8.2%**
Totals for Area of Interest		**12,475.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Carbon Area, Utah, Parts of Carbon and Emery Counties

7—Beje-Trag complex

Map Unit Setting

National map unit symbol: jx6g
Elevation: 6,980 to 9,670 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 38 to 45 degrees F
Frost-free period: 60 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Beje and similar soils: 55 percent
Trag and similar soils: 20 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Beje

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 6 inches: loam
B2t - 6 to 14 inches: clay loam
R - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R047XA446UT)
Hydric soil rating: No

Description of Trag

Setting

Landform: Draws
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium and/or colluvium derived from sandstone and shale

Typical profile

A1 - 0 to 5 inches: clay loam
B1,B21t,B22t - 5 to 39 inches: clay loam
C - 39 to 60 inches: clay loam

Properties and qualities

Slope: 3 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Mountain loam (Salina wildrye) (R048AY409UT)
Hydric soil rating: No

Minor Components

Doney family

Percent of map unit: 8 percent

Senchert family

Percent of map unit: 8 percent

Trag

Percent of map unit: 5 percent

Silas

Percent of map unit: 2 percent

Rock outcrop

Percent of map unit: 2 percent
Landform: Mountain slopes, hillslopes
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Convex
Across-slope shape: Convex

116—Trag-Beje-Rottulee family complex

Map Unit Setting

National map unit symbol: jx42
Elevation: 7,180 to 7,380 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 38 to 45 degrees F
Frost-free period: 60 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Trag and similar soils: 40 percent
Beje and similar soils: 20 percent
Rottulee family and similar soils: 15 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trag

Setting

Landform: Valley floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium and/or colluvium derived from sandstone and shale

Typical profile

A1 - 0 to 5 inches: loam
B1,B21t,B22t - 5 to 39 inches: clay loam
C - 39 to 60 inches: clay loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Mountain loam (Salina wildrye) (R048AY409UT)
Hydric soil rating: No

Description of Beje

Setting

Landform: Benches, ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountainflank, crest, interfluve
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 6 inches: loam
B2t - 6 to 14 inches: clay loam
R - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R047XA446UT)
Hydric soil rating: No

Description of Rottulee Family

Setting

Landform: Valley sides
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Colluvium over residuum weathered from sandstone and shale

Typical profile

A1, B1 - 0 to 8 inches: loam
B2 - 8 to 15 inches: clay loam
B3 - 15 to 23 inches: gravelly silty clay loam
C1k - 23 to 34 inches: gravelly silt loam
R - 34 to 38 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Shrub) (R047XA460UT)
Hydric soil rating: No

Minor Components

Trag, stony surface

Percent of map unit: 10 percent

Doney family

Percent of map unit: 10 percent

Brycan

Percent of map unit: 2 percent

Silas

Percent of map unit: 2 percent

Falcon

Percent of map unit: 1 percent

Duchesne Area, Utah, Parts of Duchesne, Utah, and Wasatch Counties

12—Badland-Rock outcrop complex, 1 to 100 percent slopes

Map Unit Composition

Badland: 50 percent
Rock outcrop: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Badland

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

21—Bigpack loam, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1vbc5
Elevation: 5,640 to 7,940 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Bigpack and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bigpack

Setting

Landform: Alluvial flats
Landform position (three-dimensional): Dip
Down-slope shape: Linear, concave
Across-slope shape: Concave, convex
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

A - 0 to 4 inches: loam
CB - 4 to 48 inches: loam
C - 48 to 60 inches: clay loam

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Upland Loam (Wyoming Big Sagebrush) (R048AY306UT)
Hydric soil rating: No

27—Boreham loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 1vbcb
Elevation: 4,660 to 5,870 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Boreham and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boreham

Setting

Landform: Paleoterraces, fan remnants, strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave
Across-slope shape: Linear, convex
Parent material: Loamy alluvium over loamy-skeletal alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

Ap - 0 to 13 inches: loam
Bk1 - 13 to 26 inches: loam

Bk2 - 26 to 49 inches: loam
2Bk3 - 49 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

38—Cadrina, extremely stony-Casmos-Rock outcrop complex, 2 to 40 percent slopes

Map Unit Setting

National map unit symbol: 1vbcg
Elevation: 4,590 to 6,360 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Cadrina, extremely stony, and similar soils: 40 percent
Casmos and similar soils: 30 percent
Rock outcrop: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cadrina, Extremely Stony

Setting

Landform: Hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex

Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 2 inches: extremely stony loam
Bk - 2 to 15 inches: extremely stony loam
R - 15 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Percent of area covered with surface fragments: 5.0 percent
Depth to restrictive feature: 5 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 7.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034BY118UT)
Hydric soil rating: No

Description of Casmos

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone, shale and/or siltstone

Typical profile

A - 0 to 2 inches: very channery loam
C - 2 to 6 inches: channery loam
R - 6 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 40 percent
Depth to restrictive feature: 5 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 0.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034BY118UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

62—Crustown-Motto complex, 0 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1tzw4
Elevation: 4,660 to 5,510 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Crustown and similar soils: 50 percent
Motto and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crustown

Setting

Landform: Hills
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian deposits over residuum derived from calcareous sandstone

Typical profile

A - 0 to 5 inches: sand
C - 5 to 16 inches: loamy sand
Cr - 16 to 22 inches: bedrock

R - 22 to 60 inches: bedrock

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Sand (Fourwing Saltbush) (R034BY112UT)
Hydric soil rating: No

Description of Motto

Setting

Landform: Structural benches, hills
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Slope alluvium over residuum weathered from sandstone and shale

Typical profile

E - 0 to 2 inches: very flaggy loam
Btkn - 2 to 12 inches: clay loam
Bkn - 12 to 14 inches: clay loam
2C - 14 to 17 inches: extremely channery clay loam
2R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: 1 to 4 inches to natric; 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.07 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 60.0
Available water storage in profile: Very low (about 0.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034BY117UT)
Hydric soil rating: No

94—Greybull-Utaline-Badland complex, 4 to 40 percent slopes

Map Unit Setting
National map unit symbol: 1v01x
Elevation: 4,660 to 6,060 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition
Greybull and similar soils: 40 percent
Utaline and similar soils: 35 percent
Badland: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Greybull

Setting
Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from shale

Typical profile
A - 0 to 2 inches: very cobbly sandy loam
C - 2 to 35 inches: clay loam
Cr - 35 to 60 inches: bedrock

Properties and qualities
Slope: 15 to 40 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent

Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Shallow Loam (Shadscale) (R034BY121UT)
Hydric soil rating: No

Description of Utaline

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

A - 0 to 3 inches: very gravelly sandy loam
Bw - 3 to 7 inches: very gravelly loam
Bk - 7 to 60 inches: very gravelly loam

Properties and qualities

Slope: 4 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

Description of Badland

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

120—Jenrid sandy loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 1vbbk
Elevation: 4,610 to 5,840 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Jenrid and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jenrid

Setting

Landform: Alluvial flats, fan remnants, drainageways
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Alluvium and/or eolian deposits derived from limestone, sandstone, and shale and/or quartzite

Typical profile

A - 0 to 2 inches: sandy loam
C1 - 2 to 21 inches: sandy loam
C2 - 21 to 41 inches: loam
C3 - 41 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: B
Ecological site: Alkali Flat (Greasewood) (R034BY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)
Hydric soil rating: No

123—Kilroy loam, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1vbbl
Elevation: 4,660 to 5,810 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Kilroy and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kilroy

Setting

Landform: Fan remnants, strath terraces
Down-slope shape: Concave, linear
Across-slope shape: Convex, linear
Parent material: Alluvium derived from sandstone, shale, limestone, and quartzite

Typical profile

A - 0 to 4 inches: loam
Bw - 4 to 16 inches: clay loam
Bk - 16 to 41 inches: gravelly loam
2BCk - 41 to 60 inches: very gravelly loam

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C

Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

130—Leeko-Boreham complex, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2wrgj
Elevation: 4,890 to 5,410 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Leeko and similar soils: 50 percent
Boreham and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Leeko

Setting

Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

E - 0 to 2 inches: loam
Btn - 2 to 7 inches: clay loam
Btkn - 7 to 16 inches: clay loam
Bknz - 16 to 56 inches: clay loam
2Bknyz - 56 to 60 inches: very cobbly clay loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.07 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 40.0
Available water storage in profile: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034BY101UT)
Hydric soil rating: No

Description of Boreham

Setting

Landform: Strath terraces, fan remnants
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave
Across-slope shape: Linear, convex
Parent material: Loamy alluvium over loamy-skeletal alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

Ap - 0 to 13 inches: loam
Bk1 - 13 to 26 inches: loam
Bk2 - 26 to 49 inches: loam
2Bk3 - 49 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

142—Smithpond-Montwel-Badland complex, 4 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1vbbr

Elevation: 4,690 to 6,890 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Smithpond and similar soils: 50 percent
Montwel and similar soils: 30 percent
Badland: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Smithpond

Setting

Landform: Fan remnants
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian deposits over alluvium derived from sandstone

Typical profile

A - 0 to 4 inches: fine sandy loam
Bw - 4 to 15 inches: fine sandy loam
Bk - 15 to 37 inches: fine sandy loam
C1 - 37 to 50 inches: fine sandy loam
C2 - 50 to 60 inches: sandy loam

Properties and qualities

Slope: 4 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.13 to 7.09 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: A
Ecological site: Semidesert Sandy Loam (Fourwing Saltbush) (R034BY216UT)
Other vegetative classification: Semidesert Sandy Loam (Fourwing Saltbush) (034XY216UT_2)
Hydric soil rating: No

Description of Montwel

Setting

Landform: Hills

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from shale and siltstone and/or sandstone

Typical profile

A - 0 to 2 inches: clay loam
C1 - 2 to 24 inches: clay loam
C2 - 24 to 36 inches: silty clay loam
Cr - 36 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 15 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

Description of Badland

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

154—Motto-Rock outcrop complex, 2 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1vbbs
Elevation: 4,620 to 5,840 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F

Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Motto and similar soils: 75 percent
Rock outcrop: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Motto

Setting

Landform: Structural benches, hills
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Slope alluvium over residuum weathered from sandstone and shale

Typical profile

E - 0 to 2 inches: very flaggy loam
Btkn - 2 to 12 inches: clay loam
Bkn - 12 to 14 inches: clay loam
2C - 14 to 17 inches: extremely channery clay loam
2R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 1 to 4 inches to natric; 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.07 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 60.0
Available water storage in profile: Very low (about 0.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034BY117UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

179—Pherson-Hickerson complex, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1vbbz
Elevation: 4,990 to 6,890 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Pherson and similar soils: 45 percent
Hickerson and similar soils: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pherson

Setting

Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone and shale

Typical profile

A - 0 to 4 inches: very gravelly loam
BCk - 4 to 16 inches: very gravelly sandy loam
C - 16 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 8 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 15.0
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Alkali Flat (Greasewood) (R034BY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)

Hydric soil rating: No

Description of Hickerson

Setting

Landform: Alluvial flats, flood plains
Down-slope shape: Concave, linear
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

A - 0 to 2 inches: loam
Bw - 2 to 37 inches: silty clay loam
C - 37 to 60 inches: sandy clay loam

Properties and qualities

Slope: 1 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 42 to 60 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Loamy Bottom (Basin Big Sagebrush) (R034BY009UT)
Hydric soil rating: No

198—Saddlehorse-Rock outcrop-Pathead complex, 40 to 80 percent slopes

Map Unit Setting

National map unit symbol: 2nbzv
Elevation: 6,000 to 9,380 feet
Mean annual precipitation: 18 to 24 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Saddlehorse and similar soils: 35 percent
Rock outcrop: 30 percent
Pathead and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saddlehorse

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium over residuum derived from sandstone and shale

Typical profile

A1 - 0 to 5 inches: extremely stony loam
A2 - 5 to 10 inches: flaggy loam
Bk1 - 10 to 21 inches: very flaggy loam
Bk2 - 21 to 39 inches: very flaggy loam
Cr - 39 to 60 inches: bedrock

Properties and qualities

Slope: 40 to 80 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 9.0
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: C
Ecological site: Mountain very steep stony loam (Douglas fir) (F048AY475UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Pathead

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone and shale

Typical profile

A - 0 to 3 inches: extremely stony loam
Bw - 3 to 10 inches: very channery loam
Bk1 - 10 to 25 inches: extremely channery loam
Bk2 - 25 to 31 inches: extremely stony loam
R - 31 to 60 inches: bedrock

Properties and qualities

Slope: 40 to 80 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: C
Ecological site: Mountain very steep stony loam (Douglas fir) (F048AY475UT)
Hydric soil rating: No

229—Tipperary loamy fine sand, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1v061
Elevation: 4,690 to 5,740 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Tipperary and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tipperary

Setting

Landform: Structural benches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from sandstone

Typical profile

A - 0 to 4 inches: loamy fine sand
CBk - 4 to 60 inches: loamy fine sand

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.13 to 7.09 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): 7c
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: Desert Sand (Fourwing Saltbush) (R034BY112UT)
Hydric soil rating: No

242—Turzo clay loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 1v063
Elevation: 4,590 to 6,070 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Turzo and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Turzo

Setting

Landform: Drainageways, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Linear, concave
Across-slope shape: Concave
Parent material: Alluvium derived from sedimentary rock

Typical profile

A - 0 to 2 inches: clay loam
Bw1 - 2 to 10 inches: clay loam
Bw2 - 10 to 22 inches: clay loam
C1 - 22 to 35 inches: clay loam
C2 - 35 to 50 inches: sandy clay loam
C3 - 50 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.07 to 0.21 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 14.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 8w
Land capability classification (nonirrigated): 8w
Hydrologic Soil Group: C/D
Ecological site: Alkali Flat (Greasewood) (R034BY006UT)
Hydric soil rating: No

243—Turzo-Umbo complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1v00z
Elevation: 4,590 to 5,610 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Turzo and similar soils: 65 percent
Umbo and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Turzo

Setting

Landform: Fan remnants, stream terraces, alluvial flats
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Alluvium derived from sandstone and shale and/or quartzite and/or limestone

Typical profile

A - 0 to 9 inches: clay loam
Bw - 9 to 32 inches: clay loam
C - 32 to 60 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

Description of Umbo

Setting

Landform: Alluvial flats
Landform position (three-dimensional): Base slope, tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from limestone, sandstone, and shale and/or quartzite

Typical profile

A - 0 to 10 inches: clay loam

C1 - 10 to 52 inches: clay loam
C2 - 52 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 42 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: High (about 11.1 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Wet Saline Meadow (Inland saltgrass) (R034BY024UT)
Hydric soil rating: No

256—Walknolls extremely channery sandy loam, 4 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1vbc7
Elevation: 5,540 to 7,380 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Walknolls and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walknolls

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from calcareous sandstone over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 2 inches: extremely channery sandy loam
Bk1 - 2 to 7 inches: very channery sandy loam
Bk2 - 7 to 14 inches: extremely channery sandy loam
R - 14 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 25 percent
Depth to restrictive feature: 4 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Other vegetative classification: Semidesert Shallow Loam (Utah Juniper-Pinyon) (034XY233UT_2)
Hydric soil rating: No

264—Walknolls-Rock outcrop complex, 2 to 40 percent slopes

Map Unit Setting

National map unit symbol: 1vczg
Elevation: 5,150 to 6,820 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Walknolls and similar soils: 75 percent
Rock outcrop: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walknolls

Setting

Landform: Hills
Down-slope shape: Convex
Across-slope shape: Convex

Parent material: Slope alluvium and/or colluvium derived from calcareous sandstone over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 3 inches: very channery sandy loam
Bk - 3 to 17 inches: very channery sandy loam
R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 40 percent
Depth to restrictive feature: 4 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Black Sagebrush) (R034BY227UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

266—Walknolls-Uendal complex, 2 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1vbc8
Elevation: 4,920 to 6,560 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Walknolls and similar soils: 55 percent
Uendal and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walknolls

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from calcareous sandstone over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 3 inches: very channery sandy loam
Bk - 3 to 17 inches: very channery sandy loam
R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 4 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Black Sagebrush) (R034BY227UT)
Hydric soil rating: No

Description of Uendal

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone

Typical profile

A - 0 to 4 inches: gravelly sandy loam
C1 - 4 to 16 inches: sandy loam
C2 - 16 to 24 inches: gravelly sandy loam
R - 24 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): 4c
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Semidesert Gravelly Sandy Loam (Wyoming Big Sagebrush) (R034BY206UT)
Hydric soil rating: No

285—Water

Map Unit Composition

Water: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: Unranked

CPD—Sowers-Rabbitex-Tyzut complex, 6 to 40 percent slopes

Map Unit Setting

National map unit symbol: 2s0kz
Elevation: 6,740 to 8,950 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Sowers and similar soils: 40 percent
Rabbitex and similar soils: 25 percent
Tyzut and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sowers

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from calcareous shale

Typical profile

A - 0 to 5 inches: channery loam
Bk1 - 5 to 9 inches: loam
Bk2 - 9 to 16 inches: gravelly loam
Bk3 - 16 to 26 inches: channery loam
BCk - 26 to 31 inches: very parachannery loam
Cr - 31 to 60 inches: bedrock

Properties and qualities

Slope: 6 to 40 percent
Depth to restrictive feature: 23 to 38 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 39 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Upland Loam (Wyoming Big Sagebrush) (R048AY306UT)
Hydric soil rating: No

Description of Rabbitex

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Mountainflank, base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from calcareous shale

Typical profile

A1 - 0 to 2 inches: channery loam

A2 - 2 to 12 inches: loam
Bk1 - 12 to 28 inches: loam
Bk2 - 28 to 53 inches: channery loam
BCk - 53 to 57 inches: very channery loam
R - 57 to 60 inches: bedrock

Properties and qualities

Slope: 6 to 40 percent
Depth to restrictive feature: 47 to 59 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 28 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: Upland Loam (Bonneville Big Sagebrush) (R048AY308UT)
Hydric soil rating: No

Description of Tyzut

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from sedimentary rock

Typical profile

A - 0 to 6 inches: channery fine sandy loam
Bk1 - 6 to 11 inches: channery loam
Bk2 - 11 to 19 inches: extremely channery loam
R - 19 to 60 inches: bedrock

Properties and qualities

Slope: 6 to 30 percent
Depth to restrictive feature: 13 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Calcium carbonate, maximum in profile: 32 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.5 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Upland Loam (Birchleaf Mountain Mahogany) (R048AY309UT)
Hydric soil rating: No

DJE—Avintaquin, extremely stony-Floak-Paunsaugunt, very stony complex, 8 to 15 percent slopes

Map Unit Setting
National map unit symbol: 1j86s
Elevation: 7,050 to 7,900 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition
Avintaquin, extremely stony, and similar soils: 50 percent
Floak and similar soils: 25 percent
Paunsaugunt, very stony, and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Avintaquin, Extremely Stony

Setting
Landform: Dip slopes, mountain slopes
Landform position (three-dimensional): Mountainbase
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from limestone

Typical profile
A - 0 to 7 inches: very channery loam
Bk1 - 7 to 17 inches: extremely channery clay loam
Bk2 - 17 to 29 inches: extremely channery clay loam
R - 29 to 60 inches: bedrock

Properties and qualities
Slope: 8 to 15 percent
Percent of area covered with surface fragments: 3.0 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 50 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Browse) (R048AY451UT)
Hydric soil rating: No

Description of Floak

Setting

Landform: Dip slopes
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Slope alluvium over residuum weathered from limestone

Typical profile

A - 0 to 6 inches: loam
Bt - 6 to 14 inches: cobbly loam
Btk - 14 to 18 inches: cobbly loam
Bk - 18 to 26 inches: very cobbly loam
R - 26 to 60 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 45 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Oak) (R048AY415UT)
Hydric soil rating: No

Description of Paunsaugunt, Very Stony

Setting

Landform: Dip slopes
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone over colluvium derived from limestone

Typical profile

A1 - 0 to 1 inches: extremely flaggy silt loam
A2 - 1 to 4 inches: very flaggy silt loam
ABk - 4 to 8 inches: very flaggy silt loam
R - 8 to 60 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 4 to 10 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 5.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R048AY436UT)
Hydric soil rating: No

DKF—Paunsaugunt, extremely stony-Helper-Rock outcrop complex, 10 to 50 percent slopes

Map Unit Setting

National map unit symbol: 1lqs9
Elevation: 7,180 to 7,940 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days

Farmland classification: Not prime farmland

Map Unit Composition

Paunsaugunt, extremely stony, and similar soils: 40 percent
Helper and similar soils: 25 percent
Rock outcrop: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paunsaugunt, Extremely Stony

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sandstone over colluvium derived from limestone

Typical profile

A1 - 0 to 2 inches: very cobbly fine sandy loam
A2 - 2 to 6 inches: very cobbly loam
Ak - 6 to 12 inches: very cobbly loam
BCk - 12 to 17 inches: very cobbly loam
R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 50 percent
Percent of area covered with surface fragments: 8.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 60 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Very Steep Stony Loam (Browse) (R048AY473UT)
Hydric soil rating: No

Description of Helper

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank

Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium over residuum weathered from limestone, sandstone, and shale

Typical profile

A - 0 to 4 inches: very gravelly loam
Bw - 4 to 12 inches: gravelly loam
BCk - 12 to 23 inches: very parachannery loam
Cr - 23 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.2 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

DLC—Osote-Winspect complex, 2 to 20 percent slopes

Map Unit Setting

National map unit symbol: 1lny9
Elevation: 7,050 to 8,760 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Osote and similar soils: 55 percent
Winspect and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Osote

Setting

Landform: Drainageways, alluvial fans
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave
Across-slope shape: Concave, convex
Parent material: Alluvium derived from sandstone and shale

Typical profile

A - 0 to 8 inches: clay loam
Bw - 8 to 15 inches: silty clay loam
Bk1 - 15 to 31 inches: silty clay loam
Bk2 - 31 to 49 inches: silty clay loam
Bk3 - 49 to 62 inches: silty clay loam

Properties and qualities

Slope: 2 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Winspect

Setting

Landform: Fan remnants
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone and shale

Typical profile

A1 - 0 to 2 inches: channery loam

A2 - 2 to 7 inches: channery clay loam
Bk1 - 7 to 19 inches: very channery clay loam
Bk2 - 19 to 42 inches: very channery clay loam
Bk3 - 42 to 54 inches: extremely channery clay loam
Bk4 - 54 to 60 inches: very channery clay loam

Properties and qualities

Slope: 2 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Moderate (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

DOC—Lostminer-McCadden-Bickmore complex, 4 to 40 percent slopes

Map Unit Setting

National map unit symbol: 1jrts
Elevation: 7,020 to 9,940 feet
Mean annual precipitation: 25 to 28 inches
Mean annual air temperature: 38 to 42 degrees F
Frost-free period: 50 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition

Lostminer and similar soils: 60 percent
Mccadden and similar soils: 20 percent
Bickmore and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lostminer

Setting

Landform: Mountain slopes

Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Concave
Parent material: Slope alluvium derived from limestone and shale over residuum weathered from limestone and shale

Typical profile

A - 0 to 6 inches: loam
Bt - 6 to 16 inches: clay loam
Btk - 16 to 19 inches: very channery clay loam
BCk - 19 to 22 inches: parachannery silty clay loam
Cr - 22 to 26 inches: bedrock
R - 26 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 20 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock; 26 to 60 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Mountain Big Sagebrush) (R047XA516UT)
Hydric soil rating: No

Description of Mccadden

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from limestone, sandstone, and shale

Typical profile

A - 0 to 5 inches: gravelly silt loam
AB - 5 to 13 inches: very cobbly loam
BCk - 13 to 16 inches: extremely cobbly loam
R - 16 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 40 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained

Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 16 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: High Mountain Gravelly Loam (Mountain Big Sagebrush) (R048AY518UT)
Hydric soil rating: No

Description of Bickmore

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from limestone and shale

Typical profile

A1 - 0 to 4 inches: clay loam
A2 - 4 to 16 inches: clay loam
Bt1 - 16 to 25 inches: very channery clay loam
Bt2 - 25 to 32 inches: extremely flaggy clay loam
Btk - 32 to 39 inches: extremely flaggy clay loam
R - 39 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 40 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C
Ecological site: High Mountain Stony Loam (Douglas Fir) (F048AY523UT)
Hydric soil rating: No

DPG—Pathead, very stony-Minnimaud-Saddlehorse, extremely bouldery association, 20 to 60 percent slopes

Map Unit Setting

National map unit symbol: 1lpzv
Elevation: 6,860 to 9,150 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Pathead, very stony, and similar soils: 55 percent
Minnimaud and similar soils: 20 percent
Saddlehorse, extremely bouldery, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pathead, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Concave, convex
Parent material: Colluvium and/or slope alluvium derived from sandstone and shale over residuum weathered from shale and siltstone

Typical profile

A - 0 to 4 inches: very channery clay loam
Bw - 4 to 12 inches: very channery clay loam
BCk - 12 to 25 inches: extremely channery clay loam
R - 25 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 60 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.21 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 14 percent

Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Minnimaud

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Convex
Across-slope shape: Concave, convex
Parent material: Slope alluvium derived from shale over colluvium derived from sandstone over residuum weathered from sandstone

Typical profile

A - 0 to 3 inches: flaggy clay loam
Bk1 - 3 to 9 inches: clay loam
Bk2 - 9 to 15 inches: clay loam
Bk3 - 15 to 33 inches: clay loam
2Bk4 - 33 to 46 inches: very channery clay loam
3Bk5 - 46 to 57 inches: extremely parachannery clay loam
Cr - 57 to 69 inches: bedrock
R - 69 to 80 inches: bedrock

Properties and qualities

Slope: 20 to 50 percent
Depth to restrictive feature: 39 to 59 inches to paralithic bedrock; 59 to 79 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Browse) (R048AY451UT)
Hydric soil rating: No

Description of Saddlehorse, Extremely Bouldery

Setting

Landform: Mountainsides
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Convex
Across-slope shape: Concave
Parent material: Colluvium derived from sandstone and/or slope alluvium derived from shale over residuum weathered from sandstone and shale

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A1 - 1 to 4 inches: stony silty clay loam
A2 - 4 to 10 inches: silty clay loam
Bk1 - 10 to 16 inches: channery silty clay loam
Bk2 - 16 to 27 inches: very channery clay loam
BCk1 - 27 to 31 inches: channery clay loam
BCk2 - 31 to 39 inches: very channery loam
Cr - 39 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 60 percent
Percent of area covered with surface fragments: 10.0 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Very Steep Stony Loam (Browse) (R048AY473UT)
Hydric soil rating: No

DRB—Peatross, occasionally flooded-Cookcan, occasionally flooded-Osote complex, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1lpch
Elevation: 6,530 to 7,840 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Peatross, occasionally flooded, and similar soils: 40 percent
Cookcan, occasionally flooded, and similar soils: 20 percent
Osote and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Peatross, Occasionally Flooded

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sedimentary rock

Typical profile

A - 0 to 6 inches: fine sandy loam
CB - 6 to 12 inches: fine sandy loam
Ab - 12 to 15 inches: loam
Bwb1 - 15 to 23 inches: loam
Bwb2 - 23 to 32 inches: silt loam
C1 - 32 to 38 inches: silty clay loam
C2 - 38 to 47 inches: silty clay loam
2C3 - 47 to 60 inches: very gravelly fine sandy loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 20 to 40 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C
Ecological site: Semiwet Fresh Streambank (R048AY006UT)
Hydric soil rating: No

Description of Cookcan, Occasionally Flooded

Setting

Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

Ak - 0 to 9 inches: clay loam
Bk - 9 to 11 inches: silty clay loam
2Bkg - 11 to 28 inches: fine sandy loam
2CBg - 28 to 34 inches: sandy loam
3Cg1 - 34 to 45 inches: very gravelly loamy sand
3Cg2 - 45 to 60 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 6 to 20 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline (0.2 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 8w
Land capability classification (nonirrigated): 8w
Hydrologic Soil Group: C/D
Ecological site: Wet Fresh Meadow (Willow-Sedge) (R048AY008UT)
Hydric soil rating: Yes

Description of Osote

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex

Parent material: Alluvium derived from sandstone and shale

Typical profile

A1 - 0 to 4 inches: loam
A2 - 4 to 10 inches: loam
Bk1 - 10 to 31 inches: loam
Bk2 - 31 to 42 inches: silt loam
Bk3 - 42 to 72 inches: silty clay loam

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.2 to 1.5 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

DSB—Brycan loam, 3 to 20 percent slopes

Map Unit Setting

National map unit symbol: 1jxwk
Elevation: 6,100 to 8,630 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Brycan and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brycan

Setting

Landform: Stream terraces, drainageways

Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Alluvium derived from limestone, sandstone, and shale

Typical profile

A - 0 to 7 inches: loam
ABk1 - 7 to 22 inches: loam
ABk2 - 22 to 30 inches: loam
Btk - 30 to 40 inches: loam
2Bk - 40 to 48 inches: gravelly very fine sandy loam
2Bkb - 48 to 60 inches: loam

Properties and qualities

Slope: 3 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: Mountain Loamy Bottom (Basin Wildrye) (R048AY410UT)
Hydric soil rating: No

EMF—Gremo-Kyune-Rock outcrop complex, 10 to 60 percent slopes

Map Unit Setting

National map unit symbol: 1jxzv
Elevation: 7,050 to 8,630 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Gremo and similar soils: 55 percent
Kyune and similar soils: 20 percent
Rock outcrop: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gremo

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and slope alluvium derived from sedimentary rock over residuum weathered from shale and siltstone

Typical profile

A - 0 to 6 inches: gravelly clay loam
Bk - 6 to 16 inches: silty clay loam
BCk - 16 to 20 inches: channery clay loam
C - 20 to 24 inches: very parachannery clay loam
Cr - 24 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 60 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Kyune

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from shale

Typical profile

A - 0 to 8 inches: loam
Bk1 - 8 to 11 inches: clay loam

Bk2 - 11 to 18 inches: gravelly loam
Bk3 - 18 to 27 inches: silt loam
BCk - 27 to 30 inches: very parachannery very fine sandy loam
Cr - 30 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 60 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (1.0 to 2.5 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

ENE—Kyune-Weed-Paunsaugunt complex, 10 to 60 percent slopes, very stony

Map Unit Setting

National map unit symbol: 1jtzz
Elevation: 7,450 to 9,220 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Kyune, very stony, and similar soils: 45 percent
Weed, very stony, and similar soils: 25 percent

Paunsaugunt, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kyune, Very Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from limestone, sandstone, and shale over residuum weathered from shale

Typical profile

A - 0 to 7 inches: cobbly clay loam
Bk - 7 to 9 inches: clay loam
BCk - 9 to 24 inches: paragravelly clay loam
Cr - 24 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 50 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 38 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Weed, Very Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock

Typical profile

A - 0 to 6 inches: cobbly loam

Bw - 6 to 11 inches: loam
Bt1 - 11 to 17 inches: loam
Bt2 - 17 to 27 inches: clay loam
Btk1 - 27 to 33 inches: paragravelly clay loam
Btk2 - 33 to 39 inches: paragravelly clay loam
BCtk - 39 to 50 inches: very paragravelly clay loam
BCk - 50 to 61 inches: extremely paragravelly loam
Cr - 61 to 71 inches: bedrock

Properties and qualities

Slope: 10 to 25 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 59 to 69 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Paunsaugunt, Very Stony

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from limestone or calcareous sandstone

Typical profile

A - 0 to 7 inches: extremely stony loam
Ak - 7 to 9 inches: extremely stony loam
R - 9 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 60 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 6 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.2 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R048AY436UT)
Hydric soil rating: No

EOC—Kyune, extremely stony-Tycreek-Clyl, extremely stony complex, 4 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1lqm9
Elevation: 7,050 to 8,200 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Kyune, extremely stony, and similar soils: 45 percent
Tycreek and similar soils: 25 percent
Clyl, extremely stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kyune, Extremely Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from limestone, sandstone, and shale over residuum weathered from shale

Typical profile

A - 0 to 10 inches: gravelly loam

Bk1 - 10 to 13 inches: gravelly silty clay loam
Bk2 - 13 to 32 inches: gravelly silty clay loam
BCk - 32 to 35 inches: very paragravelly silty clay loam
Cr - 35 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 25 percent
Percent of area covered with surface fragments: 3.0 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Tycreek

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Slope alluvium derived from limestone and sandstone and/or colluvium derived from limestone, sandstone, and shale

Typical profile

A - 0 to 9 inches: loam
Bt - 9 to 18 inches: clay loam
Btk1 - 18 to 35 inches: clay loam
Btk2 - 35 to 41 inches: clay loam
Bk - 41 to 61 inches: gravelly clay loam
BCk - 61 to 72 inches: parachannery silty clay loam

Properties and qualities

Slope: 4 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.07 to 0.21 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Clyl, Extremely Stony

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock

Typical profile

A1 - 0 to 4 inches: very cobbly fine sandy loam
A2 - 4 to 11 inches: very stony fine sandy loam
Bk1 - 11 to 21 inches: very cobbly loam
Bk2 - 21 to 44 inches: very stony loam
Bk3 - 44 to 60 inches: very stony loam

Properties and qualities

Slope: 4 to 25 percent
Percent of area covered with surface fragments: 5.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 50 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (1.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Mountain Stony Loam (Mountain Big Sagebrush) (R048AY448UT)
Hydric soil rating: No

FXD2—Splimo-Gerst complex, 3 to 20 percent slopes

Map Unit Setting

National map unit symbol: 1vczf
Elevation: 6,000 to 6,950 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Splimo and similar soils: 55 percent
Gerst and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Splimo

Setting

Landform: Structural benches
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium and/or slope alluvium derived from sandstone and limestone over residuum weathered from limestone

Typical profile

A - 0 to 1 inches: very channery loam
Bk - 1 to 7 inches: extremely flaggy loam
R - 7 to 60 inches: bedrock

Properties and qualities

Slope: 3 to 10 percent
Depth to restrictive feature: 6 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 50 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 0.3 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D

Ecological site: Semidesert Shallow Loam (Black Sagebrush) (R034XY227UT)
Hydric soil rating: No

Description of Gerst

Setting
Landform: Structural benches
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from sedimentary rock over residuum weathered from calcareous shale

Typical profile
A - 0 to 4 inches: very channery loam
AC - 4 to 9 inches: channery loam
CB - 9 to 16 inches: channery loam
Cr - 16 to 60 inches: bedrock

Properties and qualities
Slope: 10 to 20 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Very low (about 2.1 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Black Sagebrush) (R034XY227UT)
Hydric soil rating: No

FYE2—Walknolls-Cheeta-Honlu complex, 8 to 25 percent slopes

Map Unit Setting
National map unit symbol: 2kkyx
Elevation: 5,770 to 7,180 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Walknolls and similar soils: 50 percent
Cheeta and similar soils: 20 percent
Honlu and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walknolls

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from calcareous sandstone

Typical profile

A - 0 to 2 inches: very gravelly sandy loam
Bk1 - 2 to 4 inches: gravelly loam
Bk2 - 4 to 9 inches: very gravelly sandy loam
R - 9 to 60 inches: bedrock

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: 7 to 11 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Hydric soil rating: No

Description of Cheeta

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone and shale

Typical profile

A - 0 to 2 inches: gravelly sandy loam
Bk - 2 to 3 inches: gravelly sandy loam
BCk - 3 to 6 inches: very gravelly sandy clay loam
R - 6 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 2 to 8 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Hydric soil rating: No

Description of Honlu

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock

Typical profile

A - 0 to 2 inches: loam
Bk1 - 2 to 4 inches: loam
Bk2 - 4 to 8 inches: loam
Bk3 - 8 to 14 inches: clay loam
Bk4 - 14 to 51 inches: loam
BCk - 51 to 62 inches: gravelly loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034BY212UT)
Hydric soil rating: No

GOF—Gompers-Rock outcrop-Tabyago, extremely bouldery complex, 25 to 80 percent slopes

Map Unit Setting
National map unit symbol: 2mx7m
Elevation: 6,400 to 8,530 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition
Gompers and similar soils: 50 percent
Rock outcrop: 30 percent
Tabyago, extremely bouldery, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gompers

Setting
Landform: Mountain slopes
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from sandstone and shale

Typical profile
A - 0 to 3 inches: very channery loam
C - 3 to 8 inches: very channery loam
R - 8 to 60 inches: bedrock

Properties and qualities
Slope: 40 to 80 percent
Depth to restrictive feature: 5 to 20 inches to lithic bedrock

Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Upland Very Steep Shallow Loam (Pinyon-Utah Juniper) (R048AY342UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Tabyago, Extremely Bouldery

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Slope alluvium and/or colluvium derived from sandstone and shale

Typical profile

A1 - 0 to 4 inches: extremely bouldery sandy loam
A2 - 4 to 10 inches: very channery sandy loam
Bk1 - 10 to 21 inches: very stony sandy loam
Bk2 - 21 to 33 inches: extremely stony loam
R - 33 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 65 percent
Percent of area covered with surface fragments: 10.0 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent

Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: B
Ecological site: Upland Very Steep Loam (Salina Wildrye). (R048AY366UT)
Hydric soil rating: No

JZE2—Cedarknoll-Tabyago-Whitesage association, 2 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1vd00
Elevation: 6,690 to 7,310 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Cedarknoll and similar soils: 35 percent
Tabyago and similar soils: 35 percent
Whitesage and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cedarknoll

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 2 inches: gravelly sandy loam
Bw - 2 to 4 inches: very channery fine sandy loam
Bk - 4 to 13 inches: extremely channery fine sandy loam
R - 13 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Very low (about 0.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Upland Shallow Loam (Black sagebrush) (R048AY320UT)
Hydric soil rating: No

Description of Tabyago

Setting

Landform: Pediments
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Mountainflank, base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Colluvium and/or slope alluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 2 inches: very gravelly fine sandy loam
Bw - 2 to 4 inches: gravelly fine sandy loam
Bk1 - 4 to 13 inches: very gravelly fine sandy loam
Bk2 - 13 to 26 inches: extremely cobbly fine sandy loam
R - 26 to 60 inches: bedrock

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 4 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Upland Shallow Stony Loam (Bonneville Big Sagebrush) (R048AY332UT)
Hydric soil rating: No

Description of Whitesage

Setting

Landform: Pediments
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Mountainflank, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Slope alluvium derived from sandstone and shale

Typical profile

A1 - 0 to 3 inches: gravelly loam
A2 - 3 to 14 inches: loam
Bw - 14 to 24 inches: loam
Bk1 - 24 to 32 inches: loam
Bk2 - 32 to 49 inches: gravelly loam
Bk3 - 49 to 60 inches: loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Upland Loam (Wyoming Big Sagebrush) (R048AY306UT)
Hydric soil rating: No

KUA—Silas loam, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1hnkz
Elevation: 6,860 to 9,050 feet
Mean annual precipitation: 24 to 28 inches
Mean annual air temperature: 38 to 42 degrees F
Frost-free period: 50 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition

Silas and similar soils: 80 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Silas

Setting

Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sedimentary rock

Typical profile

A1 - 0 to 8 inches: loam
A2 - 8 to 21 inches: loam
CB - 21 to 26 inches: gravelly fine sandy loam
Ab - 26 to 35 inches: loam
CBb - 35 to 60 inches: gravelly loam

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: About 20 to 30 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline (0.0 to 0.5 mmhos/cm)
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Wet Fresh Meadow (Willow-Sedge) (R048AY008UT)
Hydric soil rating: No

LaD—Whitesage-Dancehall complex, 3 to 20 percent slopes

Map Unit Setting

National map unit symbol: 2pvzq
Elevation: 5,840 to 8,560 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Whitesage and similar soils: 70 percent
Dancehall and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Whitesage

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock

Typical profile

A - 0 to 3 inches: loam
Bw - 3 to 11 inches: loam
Bk1 - 11 to 16 inches: loam
Bk2 - 16 to 29 inches: loam
Bk3 - 29 to 43 inches: loam
2C1 - 43 to 47 inches: loamy sand
2C2 - 47 to 59 inches: loam

Properties and qualities

Slope: 3 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 15.0
Available water storage in profile: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: C
Ecological site: Upland Loam (Wyoming Big Sagebrush) (R048AY306UT)
Hydric soil rating: No

Description of Dancehall

Setting
Landform: Stream terraces, flood plains
Down-slope shape: Linear
Across-slope shape: Concave, linear
Parent material: Alluvium derived from sedimentary rock

Typical profile
A - 0 to 2 inches: very channery fine sandy loam
C1 - 2 to 15 inches: very channery sandy loam
C2 - 15 to 47 inches: extremely channery sandy loam
C3 - 47 to 52 inches: loam
C4 - 52 to 60 inches: very channery sandy clay loam

Properties and qualities
Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: About 49 to 71 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups
Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: Loamy Bottom (Basin Big Sagebrush/Basin Wildrye (R048AY007UT)
Hydric soil rating: No

LUE—Tycreek, extremely stony-Beje, very stony-Senchert complex, 4 to 40 percent slopes

Map Unit Setting
National map unit symbol: 1hnl3
Elevation: 7,180 to 9,320 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 38 to 43 degrees F

Frost-free period: 60 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Tycreek, extremely stony, and similar soils: 45 percent
Senchert and similar soils: 15 percent
Beje, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tycreek, Extremely Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from limestone, sandstone, and shale

Typical profile

A1 - 0 to 4 inches: cobbly fine sandy loam
A2 - 4 to 11 inches: cobbly fine sandy loam
Bt1 - 11 to 15 inches: fine sandy loam
Bt2 - 15 to 24 inches: cobbly loam
Btk - 24 to 35 inches: sandy clay loam
Bk - 35 to 46 inches: loam
BCk - 46 to 64 inches: parachannery loam
Cr - 64 to 68 inches: bedrock

Properties and qualities

Slope: 4 to 40 percent
Percent of area covered with surface fragments: 5.1 percent
Depth to restrictive feature: 59 to 72 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Beje, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 8 inches: gravelly fine sandy loam
Bt1 - 8 to 14 inches: gravelly clay loam
Bt2 - 14 to 17 inches: cobbly clay loam
R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 20 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R048AY436UT)
Hydric soil rating: No

Description of Senchert

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Concave, convex
Across-slope shape: Concave, convex
Parent material: Slope alluvium and/or colluvium derived from sandstone and shale over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 12 inches: loam
Bt1 - 12 to 22 inches: loam
Bt2 - 22 to 33 inches: clay loam
Btk - 33 to 34 inches: clay loam
R - 34 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 15 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 4 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Aspen) (F048AY506UT)
Hydric soil rating: No

LYG3—Gerst-Walknolls, very stony complex, 10 to 60 percent slopes

Map Unit Setting

National map unit symbol: 1vd50
Elevation: 5,940 to 8,170 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Gerst and similar soils: 50 percent
Walknolls, very stony, and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gerst

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Colluvium and/or slope alluvium and/or residuum weathered from calcareous shale

Typical profile

A - 0 to 3 inches: channery loam

CB - 3 to 11 inches: loam
Cr - 11 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 60 percent
Depth to restrictive feature: 6 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Hydric soil rating: No

Description of Walknolls, Very Stony

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 2 inches: very channery loam
Bk - 2 to 6 inches: channery loam
BCk - 6 to 13 inches: very channery loam
R - 13 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 60 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 39 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0

Available water storage in profile: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Semidesert Very Steep Loam (Salina Wildrye) (R034BY250UT)
Hydric soil rating: No

MaB—Mikim loam, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1v5x2
Elevation: 5,180 to 6,720 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Mikim and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mikim

Setting

Landform: Drainageways, alluvial fans
Down-slope shape: Concave
Across-slope shape: Linear, convex
Parent material: Slope alluvium derived from limestone, sandstone, and shale and/or quartzite

Typical profile

Ap - 0 to 10 inches: loam
AC - 10 to 17 inches: loam
C1 - 17 to 26 inches: sandy clay loam
C2 - 26 to 32 inches: clay loam
C3 - 32 to 39 inches: sandy clay loam
C4 - 39 to 54 inches: clay loam
C5 - 54 to 60 inches: clay loam

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.9 inches)

Interpretive groups
Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034BY212UT)
Hydric soil rating: No

MXE—Tosca-Paunsaugunt-Minnimaud complex, 20 to 55 percent slopes

Map Unit Setting
National map unit symbol: 2lb3r
Elevation: 6,560 to 9,020 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition
Tosca and similar soils: 35 percent
Paunsaugunt and similar soils: 30 percent
Minnimaud and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tosca

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sandstone and shale over residuum weathered from sandstone and shale

Typical profile
Oe - 0 to 0 inches: moderately decomposed plant material
A - 0 to 7 inches: channery loam
Bk1 - 7 to 19 inches: very channery loam
Bk2 - 19 to 26 inches: very channery loam
Bk3 - 26 to 32 inches: channery loam
Bk4 - 32 to 44 inches: extremely channery fine sandy loam
R - 44 to 60 inches: bedrock

Properties and qualities
Slope: 20 to 55 percent

Depth to restrictive feature: 39 to 46 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Mountain Stony Loam (Douglas Fir) (F048AY452UT)
Hydric soil rating: No

Description of Paunsaugunt

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sedimentary rock

Typical profile

A - 0 to 7 inches: very channery loam
Bk - 7 to 10 inches: very channery fine sandy loam
R - 10 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 55 percent
Depth to restrictive feature: 9 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Stony Loam (Douglas Fir) (F048AY452UT)
Hydric soil rating: No

Description of Minnimaud

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from interbedded sedimentary rock over residuum weathered from interbedded sedimentary rock

Typical profile

A1 - 0 to 6 inches: channery loam
A2 - 6 to 11 inches: gravelly loam
Bk1 - 11 to 24 inches: gravelly clay loam
Bk2 - 24 to 44 inches: paragravelly loam
Cr - 44 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 55 percent
Depth to restrictive feature: 39 to 59 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 42 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Browse) (R048AY451UT)
Hydric soil rating: No

NLE—Howbert-Beje-Kyune complex, 4 to 40 percent slopes, very stony

Map Unit Setting

National map unit symbol: 1kyy0
Elevation: 6,920 to 8,760 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Howbert, very stony, and similar soils: 50 percent
Beje, very stony, and similar soils: 20 percent
Kyune, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Howbert, Very Stony

Setting

Landform: Valley floors
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Slope alluvium derived from limestone, sandstone, and shale

Typical profile

A - 0 to 2 inches: sandy loam
Bt - 2 to 5 inches: loam
Btk - 5 to 11 inches: loam
Bk1 - 11 to 23 inches: loam
Bk2 - 23 to 30 inches: loam
Bk3 - 30 to 48 inches: loam
Bk4 - 48 to 60 inches: gravelly loam

Properties and qualities

Slope: 4 to 10 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Beje, Very Stony

Setting

Landform: Ridges
Landform position (three-dimensional): Crest
Down-slope shape: Convex, linear
Across-slope shape: Convex

Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from sandstone and shale

Typical profile

A - 0 to 2 inches: loam
Bt1 - 2 to 5 inches: clay loam
Bt2 - 5 to 11 inches: clay loam
Btk - 11 to 14 inches: sandy clay loam
R - 14 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 15 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Salinity, maximum in profile: Nonsaline (0.2 to 1.5 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R048AY436UT)
Hydric soil rating: No

Description of Kyune, Very Stony

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from limestone, sandstone, and shale over residuum weathered from shale

Typical profile

A - 0 to 2 inches: stony sandy loam
Bw - 2 to 11 inches: loam
Bk1 - 11 to 19 inches: sandy clay loam
Bk2 - 19 to 26 inches: clay loam
Cr - 26 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 40 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained

Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Browse) (R048AY451UT)
Hydric soil rating: No

NOTCOM—No Digital Data Available

Map Unit Composition
Notcom: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Notcom

Properties and qualities

NXE—Tyzut-Rabbitex complex, 10 to 55 percent slopes

Map Unit Setting
National map unit symbol: 2ncm1
Elevation: 6,000 to 8,530 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition
Tyzut and similar soils: 70 percent
Rabbitex and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tyzut

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from sedimentary rock

Typical profile

A - 0 to 7 inches: channery loam
Bk - 7 to 15 inches: very flaggy loam
R - 15 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 55 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Upland Shallow Stony Loam (Two-Needle Pinyon /Douglas Fir) (F048AY330UT)
Hydric soil rating: No

Description of Rabbitex

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from sedimentary rock

Typical profile

A - 0 to 4 inches: channery fine sandy loam
ABk - 4 to 9 inches: loam
Bk1 - 9 to 21 inches: loam
Bk2 - 21 to 32 inches: channery clay loam
BCk - 32 to 41 inches: very channery clay loam

R - 41 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 40 percent
Depth to restrictive feature: 39 to 59 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 58 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Upland Stony Loam (Pinyon-Utah Juniper) (R048AY331UT)
Hydric soil rating: No

OCE—Rencot very channery loam, 5 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2mx9k
Elevation: 5,710 to 8,880 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Rencot and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rencot

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from sandstone and shale

Typical profile

A - 0 to 2 inches: very channery loam
Bk1 - 2 to 4 inches: very gravelly loam
Bk2 - 4 to 7 inches: very channery loam
Bk3 - 7 to 18 inches: extremely channery loam
R - 18 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 50 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Upland Shallow Stony Loam (Two-Needle Pinyon /Douglas Fir) (F048AY330UT)
Hydric soil rating: No

QaD—Rabbitex-Sowers-Rangecreek complex, 5 to 40 percent slopes

Map Unit Setting

National map unit symbol: 2pw08
Elevation: 6,460 to 8,790 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Rabbitex and similar soils: 40 percent
Sowers and similar soils: 30 percent
Rangecreek and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rabbitex

Setting

Landform: Hills

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from calcareous shale

Typical profile

A1 - 0 to 2 inches: gravelly silty clay loam
A2 - 2 to 10 inches: flaggy silty clay loam
Bk1 - 10 to 20 inches: parachannery silty clay loam
Bk2 - 20 to 40 inches: very parachannery silty clay loam
2BCk - 40 to 48 inches: silty clay
R - 48 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 40 percent
Depth to restrictive feature: 47 to 57 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.21 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 50 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Upland Loam (Bonneville Big Sagebrush) (R048AY308UT)
Hydric soil rating: No

Description of Sowers

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from calcareous shale

Typical profile

A - 0 to 3 inches: channery loam
Bw - 3 to 7 inches: loam
BCk - 7 to 16 inches: channery loam
CBk - 16 to 21 inches: extremely parachannery loam
Cr - 21 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 40 percent
Depth to restrictive feature: 20 to 38 inches to paralithic bedrock

Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Upland Stony Loam (Pinyon-Utah Juniper) (R048AY331UT)
Hydric soil rating: No

Description of Rangecreek

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Concave
Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from calcareous shale

Typical profile

A - 0 to 3 inches: parachannery silty clay loam
CBk - 3 to 5 inches: parachannery silty clay loam
Cr - 5 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 40 percent
Depth to restrictive feature: 4 to 13 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 0.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Upland Shallow Loam (Two-Needle Pinyon / Utah Juniper) (R048AY322UT)
Hydric soil rating: No

QaG—Rangecreek, very stony-Gompers-Sowers complex, 35 to 80 percent slopes

Map Unit Setting

National map unit symbol: 2pw0d
Elevation: 6,200 to 8,530 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Rangecreek, very stony, and similar soils: 35 percent
Gompers and similar soils: 30 percent
Sowers and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rangecreek, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium and/or slope alluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 2 inches: channery loam
BC - 2 to 6 inches: loam
Cr - 6 to 60 inches: bedrock

Properties and qualities

Slope: 35 to 80 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 5 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0

Available water storage in profile: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Upland Very Steep Shallow Loam (Pinyon-Utah Juniper) (R048AY342UT)
Hydric soil rating: No

Description of Gompers

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone and shale over residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 2 inches: very channery sandy clay loam
A2 - 2 to 6 inches: channery sandy clay loam
BCk - 6 to 9 inches: very channery sandy clay loam
R - 9 to 60 inches: bedrock

Properties and qualities

Slope: 35 to 80 percent
Depth to restrictive feature: 6 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Upland Very Steep Shallow Loam (Pinyon-Utah Juniper) (R048AY342UT)
Hydric soil rating: No

Description of Sowers

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Convex

Parent material: Colluvium and/or slope alluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 4 inches: very channery loam
Bw - 4 to 8 inches: loam
Bk - 8 to 29 inches: loam
BCk - 29 to 36 inches: very cobbly loam
Cr - 36 to 60 inches: bedrock

Properties and qualities

Slope: 35 to 50 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 38 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.5 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Upland Very Steep Loam (Salina Wildrye). (R048AY366UT)
Hydric soil rating: No

QuG—Wiggler-Badland-Helper complex, 40 to 80 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2pw09
Elevation: 6,720 to 9,740 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Wiggler, very stony, and similar soils: 45 percent
Helper, very stony, and similar soils: 20 percent
Badland: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wiggler, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium over residuum weathered from shale

Typical profile

A - 0 to 1 inches: very channery loam
Bw - 1 to 5 inches: parachannery clay loam
C - 5 to 8 inches: very parachannery loam
Cr - 8 to 60 inches: bedrock

Properties and qualities

Slope: 50 to 80 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 4 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Helper, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from shale over residuum weathered from shale

Typical profile

A - 0 to 6 inches: channery loam
Bk - 6 to 13 inches: channery clay loam
BCk - 13 to 24 inches: very parachannery loam
Cr - 24 to 60 inches: bedrock

Properties and qualities

Slope: 40 to 70 percent
Percent of area covered with surface fragments: 2.0 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 17 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain very steep stony loam (Douglas fir) (F048AY475UT)
Hydric soil rating: No

Description of Badland

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

RAL—Cheeta-Rock outcrop complex, 30 to 80 percent slopes

Map Unit Setting

National map unit symbol: 2knjz
Elevation: 5,580 to 7,220 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Cheeta and similar soils: 55 percent
Rock outcrop: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cheeta

Setting

Landform: Valley sides, mountain slopes
Landform position (three-dimensional): Center third of mountainflank, rise
Down-slope shape: Linear, convex

Across-slope shape: Concave, convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 2 inches: very channery loam
C - 2 to 6 inches: extremely channery loam
R - 6 to 60 inches: bedrock

Properties and qualities

Slope: 30 to 80 percent
Depth to restrictive feature: 5 to 13 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Semidesert Very Steep Shallow Loam (Utah Juniper-Pinyon) (R034BY259UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

SLE—Aagard-Nathale-McCadden complex, 5 to 50 percent slopes, very stony

Map Unit Setting

National map unit symbol: 1jvzk
Elevation: 7,150 to 9,410 feet
Mean annual precipitation: 25 to 28 inches
Mean annual air temperature: 38 to 42 degrees F
Frost-free period: 50 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition

Aagard, very stony, and similar soils: 40 percent
Nathale, very stony, and similar soils: 25 percent
Mccadden, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aagard, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Slope alluvium and/or colluvium derived from sedimentary rock over residuum weathered from limestone and shale

Typical profile

A1 - 0 to 4 inches: loam
A2 - 4 to 12 inches: loam
Bt1 - 12 to 17 inches: loam
Bt2 - 17 to 25 inches: cobbly clay loam
Btk - 25 to 31 inches: cobbly loam
Bk - 31 to 42 inches: gravelly loam
BCk - 42 to 65 inches: silty clay loam

Properties and qualities

Slope: 5 to 30 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Aspen) (F047XA508UT)
Hydric soil rating: No

Description of Nathale, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex

Across-slope shape: Concave
Parent material: Colluvium and/or slope alluvium derived from limestone, sandstone, and shale over residuum weathered from limestone and sandstone

Typical profile

A - 0 to 5 inches: channery loam
Bt - 5 to 8 inches: gravelly clay loam
Btk1 - 8 to 13 inches: gravelly clay loam
Btk2 - 13 to 21 inches: very channery clay loam
Bk - 21 to 25 inches: gravelly silty clay loam
BCk - 25 to 34 inches: very paragravelly clay loam
R - 34 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 50 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Mountain Big Sagebrush) (R047XA516UT)
Hydric soil rating: No

Description of Mccadden, Very Stony

Setting

Landform: Mountains
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from limestone, sandstone, and shale

Typical profile

A - 0 to 8 inches: very cobbly loam
Bk - 8 to 16 inches: very cobbly loam
R - 16 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 45 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.2 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: High Mountain Stony Clay (Slender Wheatgrass) (R047XA528UT)
Hydric soil rating: No

SPE—Aagard-Gilluly-McCadden complex, 10 to 70 percent slopes

Map Unit Setting

National map unit symbol: 1l9jz
Elevation: 6,300 to 10,500 feet
Mean annual precipitation: 24 to 28 inches
Mean annual air temperature: 38 to 42 degrees F
Frost-free period: 50 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition

Aagard and similar soils: 45 percent
Gilluly and similar soils: 30 percent
Mccadden and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aagard

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Slope alluvium and/or colluvium derived from sedimentary rock over residuum weathered from limestone and shale

Typical profile

A1 - 0 to 5 inches: loam
A2 - 5 to 14 inches: loam

Bt1 - 14 to 29 inches: clay loam
Bt2 - 29 to 35 inches: cobbly clay loam
Btk - 35 to 39 inches: gravelly loam
Bk - 39 to 45 inches: very gravelly loam
BCk1 - 45 to 54 inches: gravelly loam
BCk2 - 54 to 68 inches: gravelly silty clay loam
R - 68 to 72 inches: bedrock

Properties and qualities

Slope: 10 to 35 percent
Depth to restrictive feature: 59 to 76 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Aspen) (F048AY506UT)
Hydric soil rating: No

Description of Gilluly

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from sedimentary rock

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 5 inches: loam
Bt1 - 5 to 12 inches: clay loam
Bt2 - 12 to 18 inches: clay loam
Btk - 18 to 24 inches: cobbly clay loam
Bk - 24 to 29 inches: extremely cobbly clay loam
R - 29 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 70 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Douglas-fir) (F048AY509UT)
Hydric soil rating: No

Description of Mccadden

Setting

Landform: Mountains
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from limestone, sandstone, and shale

Typical profile

A - 0 to 5 inches: gravelly silt loam
AB - 5 to 13 inches: very cobbly loam
BCk - 13 to 16 inches: extremely cobbly loam
R - 16 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 45 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 16 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: High Mountain Gravelly Loam (Mountain Big Sagebrush) (R048AY518UT)
Hydric soil rating: No

TFB—Toddhill-Jagon-Cedarknoll complex, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2mysn
Elevation: 6,400 to 7,510 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Toddhill and similar soils: 45 percent
Jagon and similar soils: 25 percent
Cedarknoll and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Toddhill

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Eolian deposits and/or slope alluvium derived from calcareous sandstone over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 5 inches: channery fine sandy loam
BA - 5 to 7 inches: fine sandy loam
Bt - 7 to 13 inches: gravelly sandy clay loam
Btk - 13 to 17 inches: channery loam
BCk - 17 to 25 inches: very channery fine sandy loam
R - 25 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 21 to 31 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Upland Gravelly Loam (Bonneville Big Sagebrush) (R048AY311UT)
Hydric soil rating: No

Description of Jagon

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone and shale over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 4 inches: very channery fine sandy loam
Bt - 4 to 7 inches: very channery clay loam
Btk - 7 to 15 inches: very channery loam
Bk - 15 to 17 inches: extremely channery fine sandy loam
R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 14 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Upland Shallow Loam (Black sagebrush) (R048AY320UT)
Hydric soil rating: No

Description of Cedarknoll

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from sandstone and shale

Typical profile

A - 0 to 4 inches: very channery loam
Bk1 - 4 to 8 inches: very gravelly loam
Bk2 - 8 to 15 inches: very gravelly loam
BCk - 15 to 17 inches: very channery loam
R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 8 percent
Depth to restrictive feature: 11 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 41 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Upland Shallow Loam (Two-Needle Pinyon / Utah Juniper) (R048AY322UT)
Hydric soil rating: No

TPG—Pathead-Averett-Modo association, 40 to 70 percent slopes, very stony

Map Unit Setting

National map unit symbol: 1jvxs

Elevation: 6,300 to 8,430 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Pathead, very stony, and similar soils: 40 percent
Averett, extremely stony, and similar soils: 30 percent
Modo, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pathead, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone and shale

Typical profile

A - 0 to 5 inches: very flaggy loam
Bw - 5 to 10 inches: very cobbly loam
BCk1 - 10 to 19 inches: very cobbly clay loam
BCk2 - 19 to 24 inches: cobbly clay loam
BCk3 - 24 to 30 inches: very channery loam
R - 30 to 60 inches: bedrock

Properties and qualities

Slope: 50 to 70 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 14 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Averett, Extremely Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium and/or residuum weathered from sandstone and shale

Typical profile

A - 0 to 3 inches: very stony fine sandy loam
AB - 3 to 10 inches: stony loam
Bt - 10 to 19 inches: stony clay loam
Btk - 19 to 30 inches: very cobbly sandy clay loam
Bk - 30 to 44 inches: gravelly clay loam
BCk - 44 to 61 inches: very gravelly fine sandy loam
R - 61 to 65 inches: bedrock

Properties and qualities

Slope: 50 to 70 percent
Percent of area covered with surface fragments: 12.0 percent
Depth to restrictive feature: 60 to 96 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Browse) (R048AY451UT)
Hydric soil rating: No

Description of Modo, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 2 inches: very flaggy fine sandy loam
Bw - 2 to 8 inches: gravelly loam
R - 8 to 60 inches: bedrock

Properties and qualities

Slope: 40 to 70 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 4 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Very low (about 1.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Very Steep Stony Loam (Browse) (R048AY473UT)
Hydric soil rating: No

Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties

12—Badland-Rock outcrop complex, 1 to 100 percent slopes

Map Unit Composition

Badland: 50 percent
Rock outcrop: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Badland

Setting

Landform: Hills, ridges, erosion remnants
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

C - 0 to 2 inches: clay
Cr - 2 to 12 inches: bedrock

Properties and qualities

Slope: 1 to 75 percent
Depth to restrictive feature: 0 to 6 inches to paralithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 20.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0
Available water storage in profile: Very low (about 0.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Erosion remnants, ledges, cliffs, escarpments
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

H1 - 0 to 60 inches: bedrock

Properties and qualities

Slope: 1 to 100 percent
Depth to restrictive feature: 0 to 4 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)

Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Montwel

Percent of map unit: 5 percent
Hydric soil rating: No

Walknolls, very channery sandy loam

Percent of map unit: 5 percent
Ecological site: Semidesert Shallow Loam (Black Sagebrush) (R034XY227UT)
Hydric soil rating: No

Cadrina, extremely channery loam

Percent of map unit: 5 percent
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)
Hydric soil rating: No

27—Boreham loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: jz22
Elevation: 4,800 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Boreham and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boreham

Setting

Landform: Strath terraces, fan remnants
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave
Across-slope shape: Linear, convex
Parent material: Loamy alluvium over loamy-skeletal alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

Ap - 0 to 13 inches: loam
Bk1 - 13 to 26 inches: loam

Bk2 - 26 to 49 inches: loam
2Bk3 - 49 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): 2c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

Minor Components

Blackston

Percent of map unit: 8 percent
Hydric soil rating: No

Crib

Percent of map unit: 7 percent
Hydric soil rating: No

37—Cadrina-Badland-Rock outcrop complex, 25 to 50 percent slopes

Map Unit Setting

National map unit symbol: jz2y
Elevation: 5,000 to 5,500 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Cadrina and similar soils: 65 percent
Badland: 20 percent
Rock outcrop: 10 percent
Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cadrina

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and colluvium over residuum derived from shale and sandstone

Typical profile

A - 0 to 2 inches: extremely channery loam
Bk - 2 to 10 inches: extremely channery loam
R - 10 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 5 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)
Hydric soil rating: No

Description of Badland

Setting

Landform: Hills, ridges, erosion remnants
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

C - 0 to 2 inches: clay
Cr - 2 to 12 inches: bedrock

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 0 to 2 inches to paralithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Calcium carbonate, maximum in profile: 15 percent

Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 20.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0
Available water storage in profile: Very low (about 0.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Erosion remnants, ledges, cliffs, escarpments
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

H1 - 0 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Ioka, gravelly loam

Percent of map unit: 3 percent
Ecological site: Alkali Flat (Greasewood) (R034XY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)
Hydric soil rating: No

Casmos, very channery loam

Percent of map unit: 2 percent
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)
Hydric soil rating: No

41—Cakehill sandy loam, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: jz33
Elevation: 4,700 to 5,500 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Cakehill and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cakehill

Setting

Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits and slope alluvium over residuum derived from sandstone

Typical profile

A - 0 to 4 inches: sandy loam
Bw - 4 to 13 inches: sandy loam
Btkn - 13 to 21 inches: loam
2Cn - 21 to 38 inches: loamy sand
2Cr - 38 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0

Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Alkali Sand (Fourwing saltbush) (R034XY102UT)
Other vegetative classification: Desert Alkali Sand (Fourwing Saltbush) (034XY102UT_1)
Hydric soil rating: No

Minor Components

Uffens, loam

Percent of map unit: 5 percent
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: No

Motto

Percent of map unit: 5 percent
Hydric soil rating: No

62—Crustown-Motto complex, 2 to 25 percent slopes

Map Unit Setting

National map unit symbol: jz3v
Elevation: 4,700 to 5,700 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Crustown and similar soils: 50 percent
Motto and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crustown

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Parent material: Eolian deposits over residuum derived from calcareous sandstone

Typical profile

A - 0 to 5 inches: sand
C - 5 to 16 inches: loamy sand
Cr - 16 to 22 inches: bedrock
R - 22 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Sand (Fourwing Saltbush) (R034XY112UT)
Other vegetative classification: Desert Sand (Fourwing Saltbush) (034XY112UT_1)
Hydric soil rating: No

Description of Motto

Setting

Landform: Hills, structural benches
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Slope alluvium over residuum derived from shale and sandstone

Typical profile

E - 0 to 2 inches: very flaggy loam
Btkn - 2 to 12 inches: clay loam
Bk - 12 to 14 inches: clay loam
2C - 14 to 17 inches: extremely channery clay loam
2R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 60.0
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)
Other vegetative classification: Desert Shallow Clay (Mat Saltbush) (034XY117UT_1)
Hydric soil rating: No

Minor Components

Cadrina, extremely stony loam

Percent of map unit: 8 percent
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034XY118UT)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 7 percent
Hydric soil rating: No

94—Greybull-Utaline-Badland complex, 8 to 50 percent slopes

Map Unit Setting

National map unit symbol: jz4z
Elevation: 4,700 to 5,500 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Greybull and similar soils: 40 percent
Utaline and similar soils: 35 percent
Badland: 10 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Greybull

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and colluvium over residuum derived from shale

Typical profile

A - 0 to 2 inches: very cobbly sandy loam
C - 2 to 35 inches: clay loam
Cr - 35 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 50 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)
Hydric soil rating: No

Description of Utaline

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

A - 0 to 3 inches: very gravelly sandy loam
Bw - 3 to 7 inches: very gravelly loam
Bk - 7 to 60 inches: very gravelly loam

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

Description of Badland

Setting

Landform: Ridges, erosion remnants, hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

C - 0 to 2 inches: clay
Cr - 2 to 12 inches: bedrock

Properties and qualities

Slope: 8 to 50 percent
Depth to restrictive feature: 0 to 2 inches to paralithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 20.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0
Available water storage in profile: Very low (about 0.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Motto

Percent of map unit: 4 percent
Hydric soil rating: No

Muff

Percent of map unit: 4 percent

Hydric soil rating: No

Leebench

Percent of map unit: 4 percent
Hydric soil rating: No

Endoaquolls

Percent of map unit: 3 percent
Landform: Scarps
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Wet Fresh Streambank (Willow) (R034XY021UT)
Hydric soil rating: Yes

120—Jenrid sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: jywr
Elevation: 5,300 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Jenrid and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jenrid

Setting

Landform: Alluvial flats
Landform position (three-dimensional): Talf, rise
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone, limestone, and shale

Typical profile

A - 0 to 2 inches: sandy loam
C - 2 to 60 inches: stratified loamy sand to loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Alkali Flat (Greasewood) (R034XY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)
Hydric soil rating: No

Minor Components

Umbo, silty clay loam

Percent of map unit: 3 percent
Ecological site: Wet Saline Meadow (Inland saltgrass) (R034XY024UT)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 3 percent
Landform: Erosion remnants, ledges
Hydric soil rating: No

Green river, loam

Percent of map unit: 3 percent
Ecological site: Alkali Bottom (Alkali sacaton) (R034XY002UT)
Hydric soil rating: No

Chalkcliff

Percent of map unit: 3 percent
Hydric soil rating: No

Turzo, loam

Percent of map unit: 3 percent
Ecological site: Alkali Flat (Greasewood) (R034XY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)
Hydric soil rating: No

123—Kilroy loam, 1 to 4 percent slopes

Map Unit Setting

National map unit symbol: jywv
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F

Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Kilroy and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kilroy

Setting

Landform: Fan remnants, strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Convex, linear
Parent material: Alluvium derived from sandstone, shale, limestone, and quartzite

Typical profile

A - 0 to 4 inches: loam
Bw - 4 to 16 inches: clay loam
Bk - 16 to 41 inches: gravelly loam
2BCk - 41 to 60 inches: very gravelly loam

Properties and qualities

Slope: 1 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

Minor Components

Blackston

Percent of map unit: 5 percent
Hydric soil rating: No

Uffens, loam

Percent of map unit: 5 percent
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Leebench

Percent of map unit: 5 percent
Hydric soil rating: No

128—Leebench sandy loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: jyx0
Elevation: 4,590 to 5,400 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Leebench and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Leebench

Setting

Landform: Fan remnants, strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Convex, linear
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

E - 0 to 2 inches: sandy loam
Btn - 2 to 9 inches: clay loam
Btkn - 9 to 21 inches: clay loam
2Bkn1 - 21 to 36 inches: very gravelly loam
2Bkn2 - 36 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 1 to 2 inches to natric
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.07 to 0.21 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 13.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: Very low (about 0.2 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: C
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034BY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Minor Components

Shotnick

Percent of map unit: 5 percent
Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034BY115UT)
Hydric soil rating: No

Ohtog

Percent of map unit: 5 percent
Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Loamy Bottom (Basin Big Sagebrush) (R034BY009UT)
Hydric soil rating: No

Blackston

Percent of map unit: 5 percent
Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

129—Leeko loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: jyx1
Elevation: 4,800 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Leeko and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Leeko

Setting

Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

E - 0 to 2 inches: loam
Btn - 2 to 7 inches: clay loam
Btkn - 7 to 16 inches: clay loam
Bk - 16 to 56 inches: clay loam
2Bky - 56 to 60 inches: very cobbly clay loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 40.0
Available water storage in profile: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Minor Components

Shotnick

Percent of map unit: 4 percent
Hydric soil rating: No

Blackston

Percent of map unit: 4 percent
Hydric soil rating: No

Nakoy

Percent of map unit: 4 percent
Hydric soil rating: No

Muff, gravelly sandy loam
Percent of map unit: 3 percent
Hydric soil rating: No

153—Motto-Muff-Rock outcrop complex, 2 to 25 percent slopes

Map Unit Setting
National map unit symbol: jyxx
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition
Motto and similar soils: 40 percent
Muff and similar soils: 35 percent
Rock outcrop: 10 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Motto

Setting
Landform: Hills, structural benches
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Slope alluvium over residuum derived from shale and sandstone

Typical profile
E - 0 to 2 inches: very flaggy loam
Btkn - 2 to 12 inches: clay loam
Bk - 12 to 14 inches: clay loam
2C - 14 to 17 inches: extremely channery clay loam
2R - 17 to 60 inches: bedrock

Properties and qualities
Slope: 2 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 5 percent

Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 60.0
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)
Other vegetative classification: Desert Shallow Clay (Mat Saltbush) (034XY117UT_1)
Hydric soil rating: No

Description of Muff

Setting

Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium over residuum derived from shale

Typical profile

A1 - 0 to 2 inches: gravelly sandy loam
A2 - 2 to 7 inches: sandy loam
Btn - 7 to 14 inches: sandy clay loam
C - 14 to 29 inches: clay loam
Cr - 29 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 40.0
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Ledges, cliffs, escarpments, erosion remnants
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

H1 - 0 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Cadrina, extremely channery loam

Percent of map unit: 3 percent
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)
Hydric soil rating: No

Badland

Percent of map unit: 3 percent
Hydric soil rating: No

Uffens, sandy loam

Percent of map unit: 3 percent
Ecological site: Alkali Flat (Greasewood) (R034XY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)
Hydric soil rating: No

Crustown

Percent of map unit: 2 percent
Hydric soil rating: No

Montwel, clay loam

Percent of map unit: 2 percent
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)
Hydric soil rating: No

Jenrid

Percent of map unit: 2 percent
Hydric soil rating: No

154—Motto-Rock outcrop complex, 2 to 25 percent slopes

Map Unit Setting

National map unit symbol: jyxy
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Motto and similar soils: 75 percent
Rock outcrop: 10 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Motto

Setting

Landform: Hills, structural benches
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Slope alluvium over residuum derived from shale and sandstone

Typical profile

E - 0 to 2 inches: very flaggy loam
Btkn - 2 to 12 inches: clay loam
Bk - 12 to 14 inches: clay loam
2C - 14 to 17 inches: extremely channery clay loam
2R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 60.0

Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)
Other vegetative classification: Desert Shallow Clay (Mat Saltbush) (034XY117UT_1)
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Escarpments, erosion remnants, ledges, cliffs
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

H1 - 0 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Crustown

Percent of map unit: 3 percent
Hydric soil rating: No

Cadrina, extremely stony loam

Percent of map unit: 3 percent
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034XY118UT)
Hydric soil rating: No

Cakehill

Percent of map unit: 3 percent
Hydric soil rating: No

Uffens, loam

Percent of map unit: 3 percent
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Badland

Percent of map unit: 3 percent

Hydric soil rating: No

158—Muff gravelly sandy loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: jyy2
Elevation: 5,200 to 5,500 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Muff and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Muff

Setting

Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium over residuum derived from shale

Typical profile

A1 - 0 to 2 inches: gravelly sandy loam
A2 - 2 to 7 inches: sandy loam
Btn - 7 to 14 inches: sandy clay loam
C - 14 to 29 inches: clay loam
Cr - 29 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 40.0
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Minor Components

Casmos, channery loam

Percent of map unit: 5 percent
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034XY118UT)
Hydric soil rating: No

Motto

Percent of map unit: 5 percent
Hydric soil rating: No

Pariette, gravelly sandy loam

Percent of map unit: 5 percent
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

160—Nakoy loamy fine sand, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: jyy5
Elevation: 4,700 to 5,300 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Nakoy and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nakoy

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Eolian deposits over alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

A - 0 to 14 inches: loamy fine sand

Bw - 14 to 25 inches: sandy loam
Bk - 25 to 72 inches: sandy loam
BCk - 72 to 80 inches: sandy loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034XY115UT)
Hydric soil rating: No

Minor Components

Hiko springs

Percent of map unit: 8 percent
Hydric soil rating: No

Tipperary

Percent of map unit: 7 percent
Hydric soil rating: No

205—Shotnick loamy sand, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: jyzs
Elevation: 4,700 to 5,100 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Shotnick and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shotnick

Setting

Landform: Alluvial flats
Landform position (three-dimensional): Talf, rise
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Eolian deposits and alluvium derived from sandstone, limestone, and shale

Typical profile

A - 0 to 8 inches: loamy sand
C - 8 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034XY115UT)
Hydric soil rating: No

Minor Components

Ohtog

Percent of map unit: 4 percent
Hydric soil rating: No

Tipperary

Percent of map unit: 4 percent
Hydric soil rating: No

Nolava

Percent of map unit: 4 percent
Hydric soil rating: No

Hiko springs

Percent of map unit: 3 percent
Hydric soil rating: No

209—Shotnick-Walkup complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: jyzx
Elevation: 4,700 to 5,500 feet
Mean annual precipitation: 5 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Shotnick and similar soils: 65 percent
Walkup and similar soils: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shotnick

Setting

Landform: Alluvial flats
Landform position (three-dimensional): Talf, rise
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Eolian deposits and alluvium derived from sandstone, limestone, and shale

Typical profile

A - 0 to 8 inches: sandy loam
C1 - 8 to 56 inches: fine sandy loam
C2 - 56 to 60 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): 2s

Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034XY115UT)
Hydric soil rating: No

Description of Walkup

Setting

Landform: Alluvial flats
Landform position (three-dimensional): Talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone, shale, and quartzite

Typical profile

A - 0 to 7 inches: fine sandy loam
C - 7 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 42 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034XY115UT)
Hydric soil rating: No

Minor Components

Stygee, silty clay loam

Percent of map unit: 4 percent
Ecological site: Alkali Flat (Greasewood) (R034XY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)
Hydric soil rating: No

Tipperary

Percent of map unit: 3 percent
Hydric soil rating: No

Umbo, silty clay loam

Percent of map unit: 2 percent
Ecological site: Wet Saline Meadow (Inland saltgrass) (R034XY024UT)
Hydric soil rating: No

Shotnick, moderately deep
Percent of map unit: 1 percent
Landform: Alluvial flats
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034XY115UT)
Hydric soil rating: No

229—Tipperary loamy fine sand, 1 to 8 percent slopes

Map Unit Setting
National map unit symbol: jz0m
Elevation: 4,700 to 5,800 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition
Tipperary and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tipperary

Setting
Landform: Structural benches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from sandstone

Typical profile
A - 0 to 4 inches: loamy fine sand
C - 4 to 60 inches: loamy fine sand

Properties and qualities
Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Desert Sand (Fourwing Saltbush) (R034XY112UT)
Other vegetative classification: Desert Sand (Fourwing Saltbush) (034XY112UT_1)
Hydric soil rating: No

Minor Components

Ohtog

Percent of map unit: 7 percent
Hydric soil rating: No

Utaline

Percent of map unit: 7 percent
Hydric soil rating: No

Nakoy

Percent of map unit: 1 percent

242—Turzo loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: jz13
Elevation: 4,600 to 5,800 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Turzo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Turzo

Setting

Landform: Alluvial flats
Landform position (three-dimensional): Talf, rise
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from quartzite, sandstone, limestone, and shale

Typical profile

A - 0 to 4 inches: loam
C - 4 to 60 inches: loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Alkali Flat (Greasewood) (R034XY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)
Hydric soil rating: No

Minor Components

Uffens, loam

Percent of map unit: 4 percent
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Chalkcliff

Percent of map unit: 4 percent
Hydric soil rating: No

Greybull, clay loam

Percent of map unit: 4 percent
Hydric soil rating: No

Jenrid

Percent of map unit: 3 percent
Hydric soil rating: No

243—Turzo-Umbo complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: jz14
Elevation: 4,600 to 5,600 feet

Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Turzo and similar soils: 65 percent
Umbo and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Turzo

Setting

Landform: Alluvial flats
Landform position (three-dimensional): Talf, rise
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from quartzite, sandstone, limestone, and shale

Typical profile

A - 0 to 9 inches: clay loam
C1 - 9 to 32 inches: clay loam
C2 - 32 to 60 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 2c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

Description of Umbo

Setting

Landform: Alluvial flats
Landform position (three-dimensional): Talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from quartzite, sandstone, limestone, and shale

Typical profile

A - 0 to 10 inches: clay loam
C1 - 10 to 52 inches: clay loam
C2 - 52 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 42 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): 2c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

Minor Components

Ioka

Percent of map unit: 4 percent
Hydric soil rating: No

Turzo, loam

Percent of map unit: 4 percent
Ecological site: Alkali Flat (Greasewood) (R034XY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)
Hydric soil rating: No

Wyasket, silty clay loam

Percent of map unit: 4 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Alkali Bottom (Alkali sacaton) (R034XY002UT)
Hydric soil rating: Yes

Jenrid

Percent of map unit: 3 percent
Hydric soil rating: No

248—Uffens loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: jz19
Elevation: 4,700 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Uffens and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Uffens

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone, limestone, and shale

Typical profile

E - 0 to 1 inches: loam
Btn - 1 to 15 inches: clay loam
BCy1 - 15 to 27 inches: clay loam
BCy2 - 27 to 47 inches: loam
Btnyb - 47 to 65 inches: clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 50.0
Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Minor Components

Hanksville, silty clay loam

Percent of map unit: 8 percent
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)
Other vegetative classification: Desert Shallow Clay (Mat Saltbush) (034XY117UT_1)
Hydric soil rating: No

Turzo, clay loam

Percent of map unit: 7 percent
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

251—Umbo clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: jz1f
Elevation: 4,600 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Umbo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Umbo

Setting

Landform: Alluvial flats
Landform position (three-dimensional): Talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from quartzite, sandstone, limestone, and shale

Typical profile

A - 0 to 8 inches: clay loam
C1 - 8 to 30 inches: clay loam

C2 - 30 to 60 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

Minor Components

Wyasket, loam

Percent of map unit: 8 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Wet Saline Streambank (Coyote willow) (R034XY026UT)
Other vegetative classification: Wet Saline Streambank (Sandbar Willow) (034XY026UT_3)
Hydric soil rating: Yes

Jenrid

Percent of map unit: 7 percent
Hydric soil rating: No

255—Utaline very gravelly sandy loam, 8 to 25 percent slopes

Map Unit Setting

National map unit symbol: jz1k
Elevation: 4,700 to 5,700 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days

Farmland classification: Not prime farmland

Map Unit Composition

Utaline and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Utaline

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

A - 0 to 3 inches: very gravelly sandy loam
Bw - 3 to 7 inches: very gravelly loam
Bk - 7 to 60 inches: very gravelly loam

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

Minor Components

Hiko springs

Percent of map unit: 5 percent
Hydric soil rating: No

Greybull, clay loam

Percent of map unit: 5 percent
Hydric soil rating: No

Nolava

Percent of map unit: 5 percent
Hydric soil rating: No

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APPENDIX E-4

Custom Soil Resource Report for the
Whitmore Park Alternative Study Area

United States Department of Agriculture

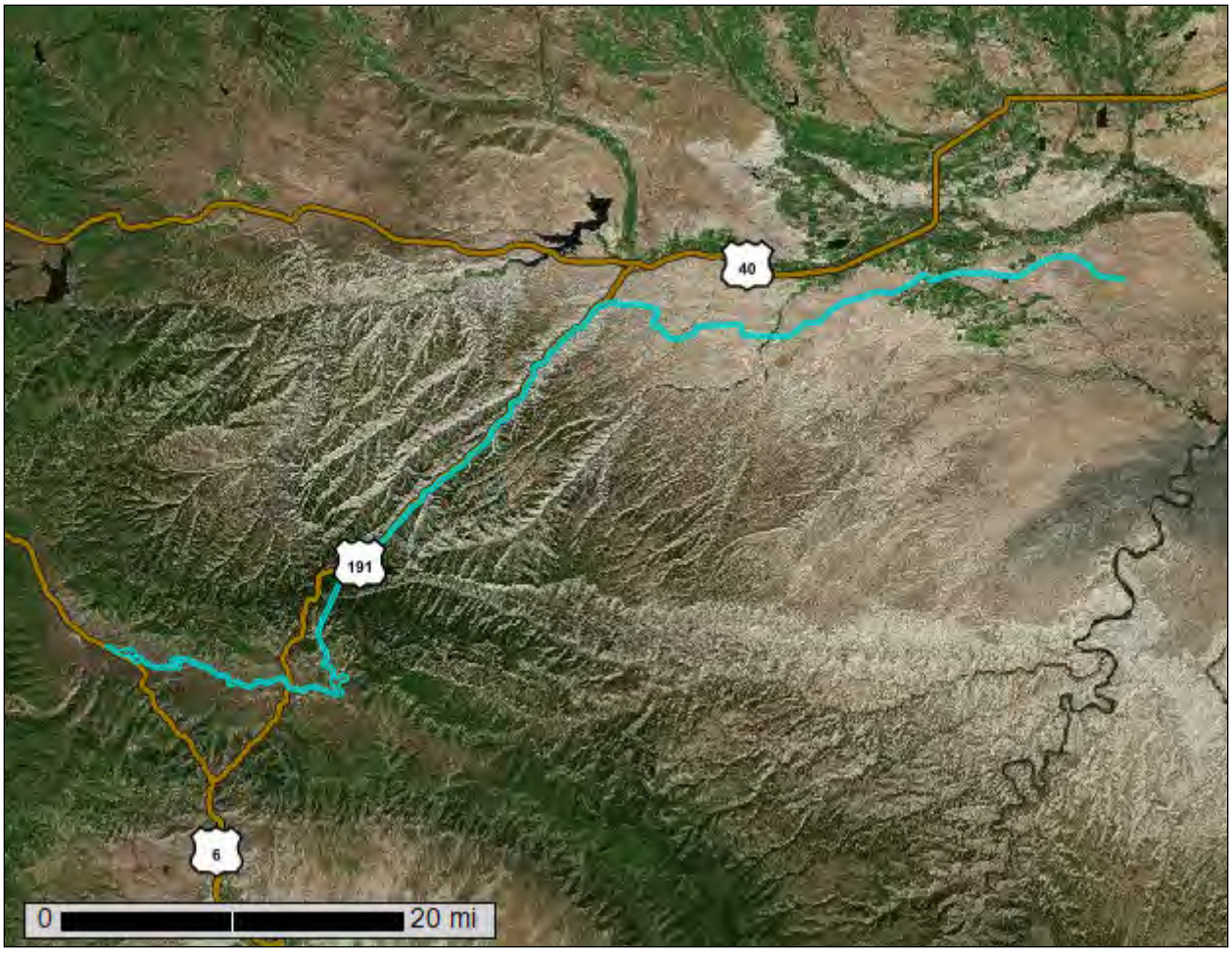
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Carbon Area, Utah, Parts of Carbon and Emery Counties; Duchesne Area, Utah, Parts of Duchesne, Utah, and Wasatch Counties; Uintah and Ouray Indian Reservation, Utah; and Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties

Whitmore Park Alternative



December 17, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map
Index Sheet

111° 8' 19" W
109° 42' 14" W
40° 41' 56" N
39° 15' 39" N
490000
510000
530000
550000
570000
590000
610000
4500000
4480000
4460000
4440000
4420000
4400000
4380000
4360000

1
2
3
4
5
6
7
8
9
10
11
12

40
191
6

Map Scale: 1:330,000 if printed on C portrait (17" x 22") sheet.

N

Meters
0 4500 9000 18000 27000

Feet
0 15000 30000 60000 90000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

111° 4' 24" W
110° 51' 22" W
40° 12' 4" N
39° 59' 1" N
494000
497000
500000
503000
506000
509000
512000
4450000
4447000
4444000
4441000
4438000
4435000
4432000
4429000
4426000

Deep Creek
Soldier Creek
Strawberry River
Willow Creek
Right Fork White River
Minnie Creek

Joins sheet 2
Joins sheet 7
Joins sheet 8

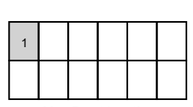
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Feet
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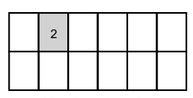


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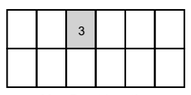


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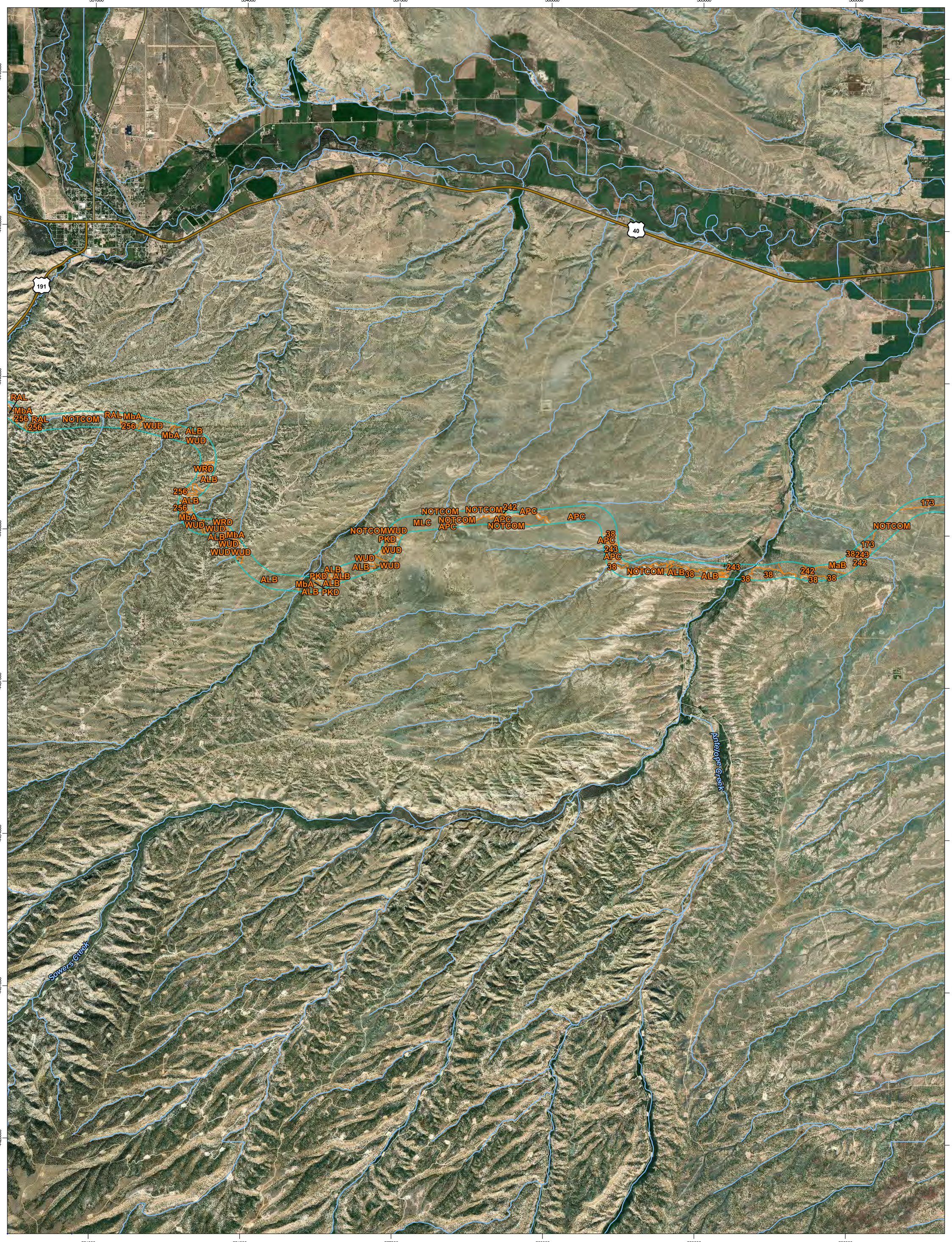
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40° 12' 4" N
39° 59' 1" N
551000
554000
557000
560000
563000
566000
4449000
4446000
4443000
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4428000



Joins sheet 3
Joins sheet 5
Joins sheet 9
Joins sheet 10
Joins sheet 11

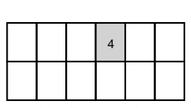
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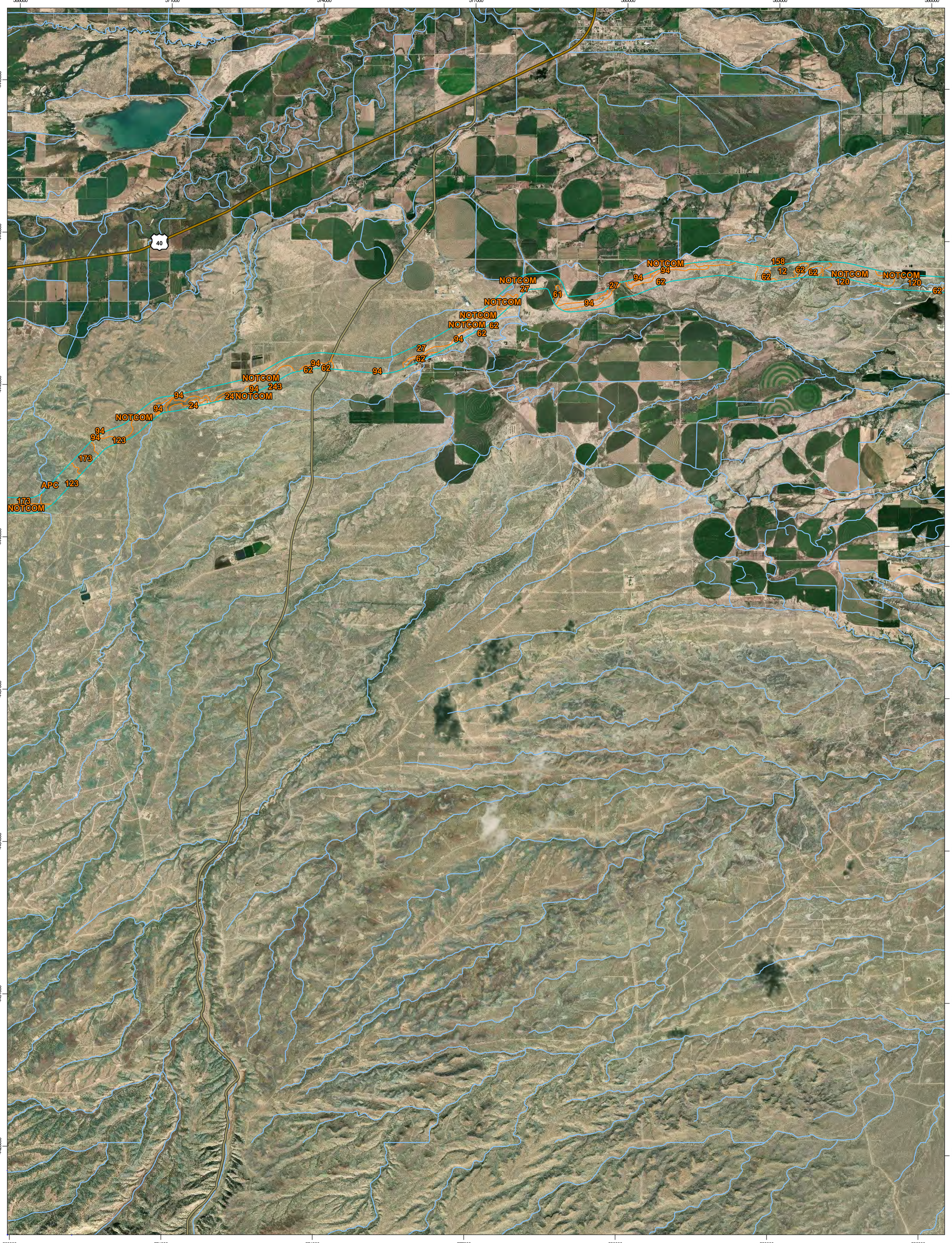
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Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84



Map Sheet Location

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40° 12' 4" N
39° 59' 1" N
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571000
574000
577000
580000
583000
586000
4449000
4446000
4443000
4440000
4437000
4434000
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4428000



Joins sheet 4
Joins sheet 6
Joins sheet 10
Joins sheet 11
Joins sheet 12

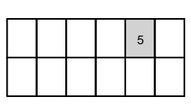
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N

Meters
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Feet
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Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84



Map Sheet Location

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109° 46' 9" W
40° 12' 4" N
587000
590000
593000
596000
599000
602000
4449000
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39° 59' 1" N



Joins sheet 5

Joins sheet 11

Joins sheet 12

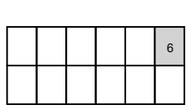
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Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84



Map Sheet Location

Custom Soil Resource Report
Soil Map
Map sheet 7 of 12

Joins sheet 1

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39° 59' 1" N
39° 45' 55" N
494000
497000
500000
503000
506000
509000
512000
4424000
4421000
4418000
4415000
4412000
4409000
4406000
4403000

Joins sheet 2
Joins sheet 8

West Fork Avintaquin Creek
Right Fork White River
Johnson Fork
Tabbyune Creek
Kyune Creek
Bear Creek
Right Fork Kyune Creek
Horse Creek
Price River
Beaver Creek
Ford Creek
Price River
6

DLC
DLC
DLC
DLC
EMF
DLC
EMF
DRB
EOC
DSB
DSB
EOC
DLC
EMF
DRB
DSB
DJE
DJE
DKF
DJE
DKF
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EMF
DLC
EMF
EMF
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EMF
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DLC
EMF
NLE

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Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

7
Map Sheet Location

Joins sheet 1
Joins sheet 2
Joins sheet 3
Joins sheet 7
Joins sheet 9

110° 51' 22" W
110° 38' 19" W
39° 59' 1" N
39° 45' 55" N
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520000
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526000
529000
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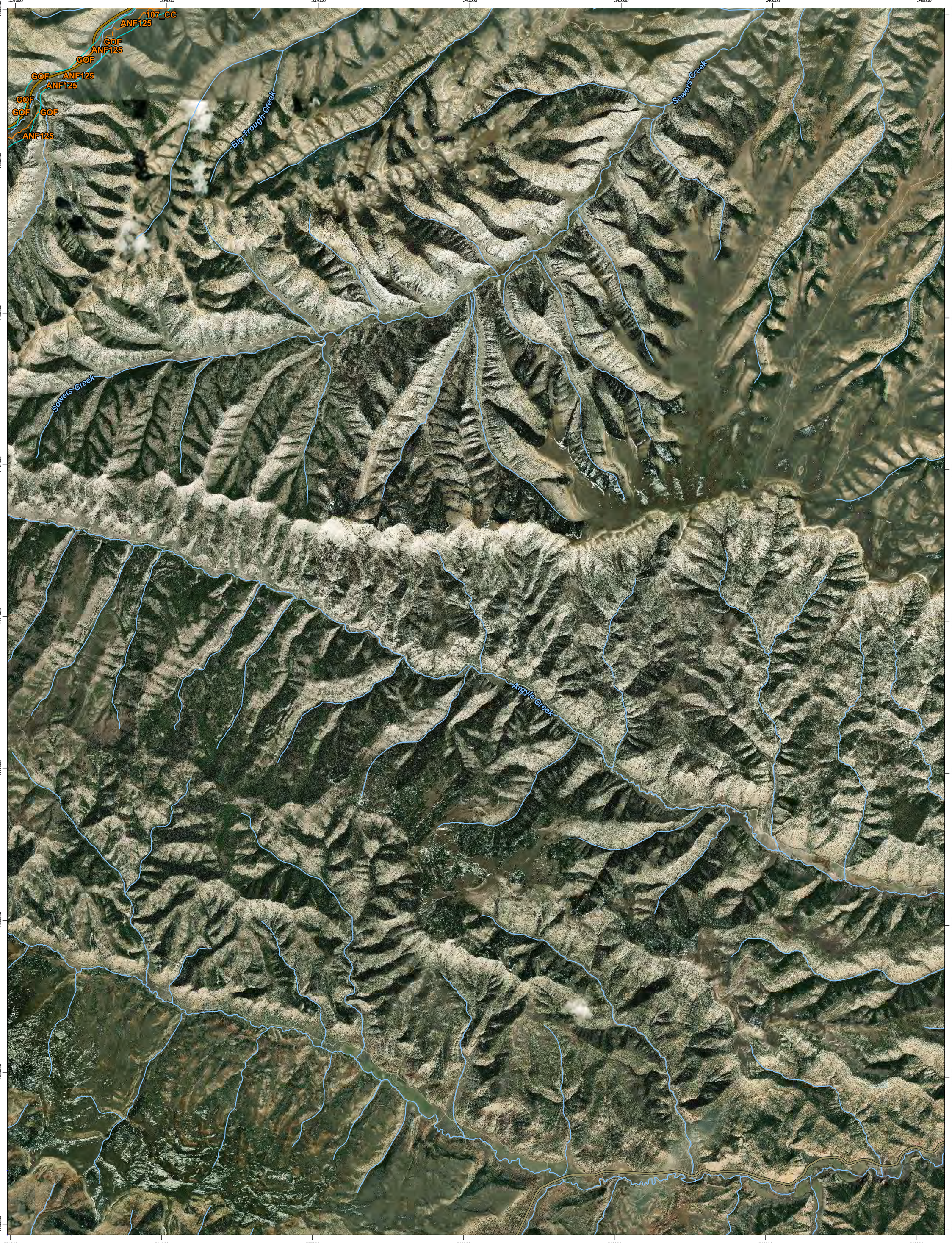
Sixmile Creek
Argyle Creek
Willow Creek
West Fork Willow Creek
Minnie Maud Creek

ANF125
QuG
ANF220
SPE
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DOC
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KUA
NOTCOM
EMF
ENE
NLE
LUE
116
128
108
85
97
32
117

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Map Sheet Location
8

Joins sheet 2
Joins sheet 3
Joins sheet 4
Joins sheet 8
Joins sheet 10



39° 59' 1" N
110° 38' 19" W
110° 25' 16" W
39° 45' 55" N
531000
534000
537000
540000
543000
546000
549000
4426000
4423000
4420000
4417000
4414000
4411000
4408000
4405000
4402000

Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location
9

Joins sheet 3
Joins sheet 4
Joins sheet 5
Joins sheet 9
Joins sheet 11

110° 25' 16" W
110° 12' 14" W
39° 59' 1" N
39° 45' 55" N
550000
553000
556000
559000
562000
565000
568000
4426000
4423000
4420000
4417000
4414000
4411000
4408000
4405000
4402000

Antelope Creek
Argyle Creek
Nine Mile Creek

Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.
Meters
0 500 1000 2000 3000
Feet
0 2000 4000 8000 12000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

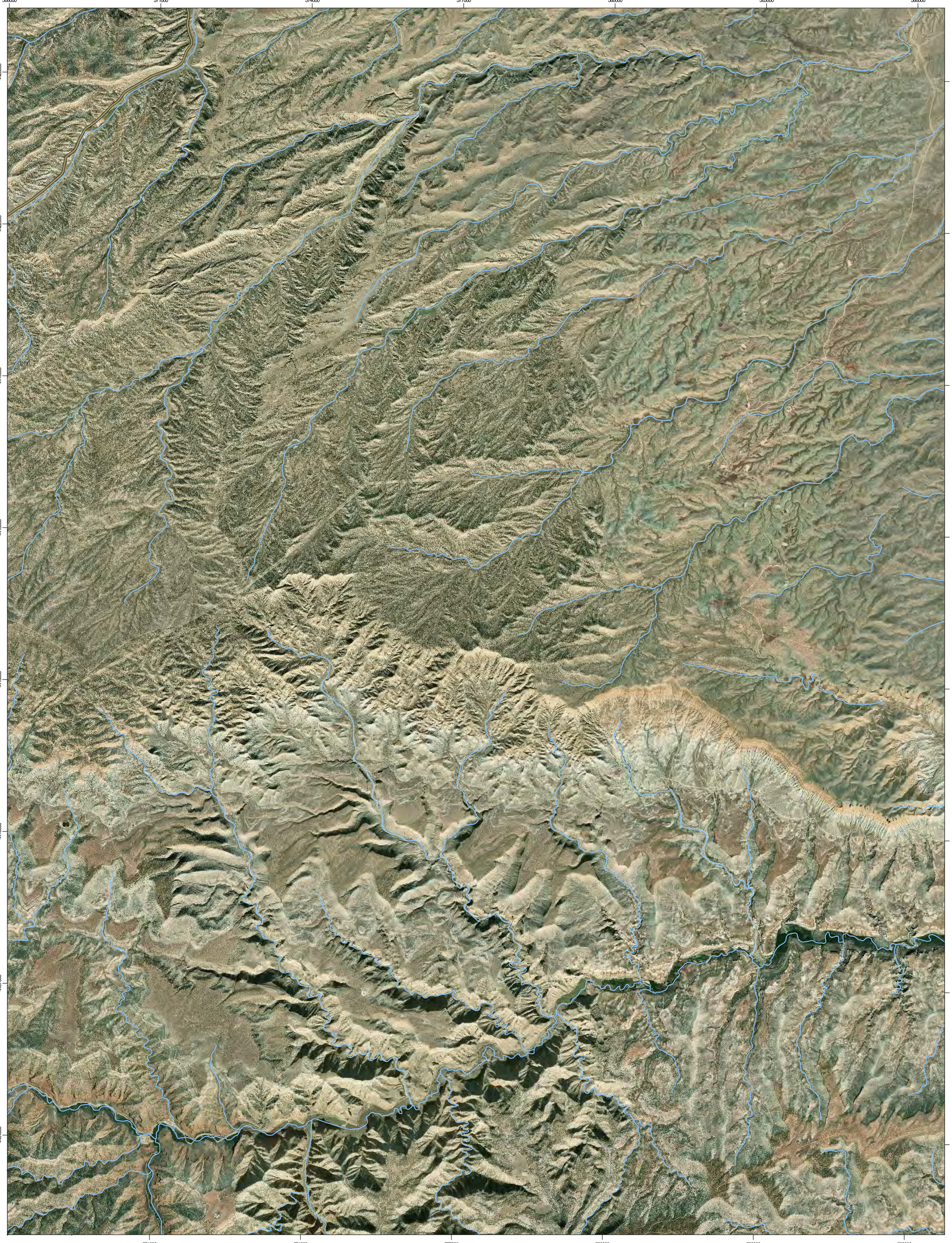
N

10
Map Sheet Location

Custom Soil Resource Report
Soil Map
Map sheet 11 of 12

Joins sheet 4
Joins sheet 5
Joins sheet 6
Joins sheet 10
Joins sheet 12

110° 12' 14" W
109° 59' 11" W
39° 59' 1" N
39° 45' 55" N
568000
571000
574000
577000
580000
583000
586000
4425000
4422000
4419000
4416000
4413000
4410000
4407000
4404000



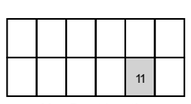
Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84



Map Sheet Location

Custom Soil Resource Report
Soil Map
Map sheet 12 of 12

Joins sheet 6

Joins sheet 5

Joins sheet 11

109° 59' 11" W

109° 46' 9" W

39° 59' 1" N

39° 45' 55" N

587000 590000 593000 596000 599000 602000 605000

4425000 4422000 4419000 4416000 4413000 4410000 4407000 4404000

Green River

Nine Mile Creek

Green River

Map Scale: 1:50,000 if printed on C portrait (17" x 22") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Sheet Location

12

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Carbon Area, Utah, Parts of Carbon and Emery Counties
Survey Area Data: Version 11, Sep 16, 2019

Soil Survey Area: Duchesne Area, Utah, Parts of Duchesne, Utah, and Wasatch Counties
Survey Area Data: Version 6, Sep 16, 2019

Soil Survey Area: Uintah and Ouray Indian Reservation, Utah
Survey Area Data: Version 3, Sep 16, 2019

Soil Survey Area: Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties
Survey Area Data: Version 14, Sep 16, 2019

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

MAP LEGEND

MAP INFORMATION

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
32	Frandsen-Gullied land complex	269.6	2.5%
85	Rabbitex silt loam, 15 to 50 percent slopes	23.1	0.2%
97	Rottulee family-Trag complex	147.1	1.4%
108	Silas loam	18.7	0.2%
116	Trag-Beje-Rottulee family complex	707.4	6.7%
117	Trag-Beje-Senchert complex	17.3	0.2%
128	Water	27.8	0.3%
Subtotals for Soil Survey Area		**1,211.0**	**11.4%**
Totals for Area of Interest		**10,598.7**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12	Badland-Rock outcrop complex, 1 to 100 percent slopes	72.0	0.7%
24	Blackston loam, 0 to 6 percent slopes	26.5	0.3%
27	Boreham loam, 0 to 4 percent slopes	327.7	3.1%
38	Cadrina, extremely stony-Casmos-Rock outcrop complex, 2 to 40 percent slopes	122.2	1.2%
61	Crib loam, 1 to 3 percent slopes	8.6	0.1%
62	Crustown-Motto complex, 0 to 25 percent slopes	245.5	2.3%
94	Greybull-Utaline-Badland complex, 4 to 40 percent slopes	202.5	1.9%
107_CC	Shupert-Dancehall, extremely bouldery complex, 1 to 15 percent slopes	1,234.7	11.6%
120	Jenrid sandy loam, 0 to 4 percent slopes	103.0	1.0%
123	Kilroy loam, 1 to 8 percent slopes	58.2	0.5%
158	Muff gravelly sandy loam, 2 to 8 percent slopes	1.0	0.0%
173	Pariette gravelly sandy loam, 2 to 8 percent slopes	111.2	1.0%
242	Turzo clay loam, 0 to 4 percent slopes	61.8	0.6%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
243	Turzo-Umbo complex, 0 to 2 percent slopes	133.1	1.3%
256	Walknolls extremely channery sandy loam, 4 to 25 percent slopes	28.8	0.3%
ALB	Kaiar-Walknolls-Honlu complex, 2 to 15 percent slopes	250.5	2.4%
ANF125	Southtwins-Whetrock-Twinnorth complex, 25 to 60 percent slopes	176.2	1.7%
ANF220	Kamack, moderately deep-Paunsaugunt-Senchert complex, 25 to 70 percent slopes	47.9	0.5%
APC	Grunnell-Pariette-Persayo complex, 2 to 15 percent slopes	284.9	2.7%
DJE	Avintaquin, extremely stony-Floak-Paunsaugunt, very stony complex, 8 to 15 percent slopes	8.3	0.1%
DKF	Paunsaugunt, extremely stony-Helper-Rock outcrop complex, 10 to 50 percent slopes	3.7	0.0%
DLC	Osote-Winspect complex, 2 to 20 percent slopes	767.8	7.2%
DOC	Lostminer-McCadden-Bickmore complex, 4 to 40 percent slopes	25.4	0.2%
DRB	Peatross, occasionally flooded-Cookcan, occasionally flooded-Osote complex, 0 to 15 percent slopes	93.3	0.9%
DSB	Brycan loam, 3 to 20 percent slopes	16.7	0.2%
EMF	Gremo-Kyune-Rock outcrop complex, 10 to 60 percent slopes	184.7	1.7%
ENE	Kyune-Weed-Paunsaugunt complex, 10 to 60 percent slopes, very stony	143.0	1.3%
EOC	Kyune, extremely stony-Tycreek-Clyl, extremely stony complex, 4 to 25 percent slopes	188.3	1.8%
FYE2	Walknolls-Cheeta-Honlu complex, 8 to 25 percent slopes	0.0	0.0%
GOF	Gompers-Rock outcrop-Tabyago, extremely bouldery complex, 25 to 80 percent slopes	68.6	0.6%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KUA	Silas loam, 2 to 15 percent slopes	26.9	0.3%
LUE	Tycreek, extremely stony-Beje, very stony-Senchert complex, 4 to 40 percent slopes	132.4	1.2%
MaB	Mikim loam, 3 to 5 percent slopes	40.9	0.4%
MbA	Breezy-Bunkwater-Hickerson complex, 1 to 6 percent slopes	383.7	3.6%
MLC	Molen-Walknolls-Gerst complex, 3 to 20 percent slopes	72.9	0.7%
MXE	Tosca-Paunsaugunt-Minnimaud complex, 20 to 55 percent slopes	79.0	0.7%
NLE	Howbert-Beje-Kyune complex, 4 to 40 percent slopes, very stony	74.6	0.7%
NOTCOM	No Digital Data Available	639.7	6.0%
NXE	Tyzut-Rabbitex complex, 10 to 55 percent slopes	57.8	0.5%
OCE	Rencot very channery loam, 5 to 50 percent slopes	0.5	0.0%
OPF	Pathead-Paunsaugunt-Gompers complex, 40 to 80 percent slopes	160.6	1.5%
PKD	Skitzy-Strych complex, 2 to 20 percent slopes	148.0	1.4%
QuG	Wiggler-Badland-Helper complex, 40 to 80 percent slopes, very stony	68.2	0.6%
RAL	Cheeta-Rock outcrop complex, 30 to 80 percent slopes	117.1	1.1%
SLE	Aagard-Nathale-McCadden complex, 5 to 50 percent slopes, very stony	37.3	0.4%
SPE	Aagard-Gilluly-McCadden complex, 10 to 70 percent slopes	419.1	4.0%
TPG	Pathead-Averett-Modo association, 40 to 70 percent slopes, very stony	6.4	0.1%
VJH2	Whetrock, extremely stony-Rock outcrop-Tyzut, rubbly complex, 50 to 80 percent slopes	169.1	1.6%
WRD	Walknolls-Gerst-Lanver complex, 5 to 60 percent slopes	8.8	0.1%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
WUD	Walknolls, extremely stony-Lanver-Honlu complex, 4 to 20 percent slopes	289.8	2.7%
Subtotals for Soil Survey Area		**7,929.0**	**74.8%**
Totals for Area of Interest		**10,598.7**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NOTCOM	No Digital Data Available	609.4	5.7%
Subtotals for Soil Survey Area		**609.4**	**5.7%**
Totals for Area of Interest		**10,598.7**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12	Badland-Rock outcrop complex, 1 to 100 percent slopes	9.7	0.1%
27	Boreham loam, 0 to 2 percent slopes	67.1	0.6%
62	Crustown-Motto complex, 2 to 25 percent slopes	119.7	1.1%
94	Greybull-Utaline-Badland complex, 8 to 50 percent slopes	67.7	0.6%
128	Leebench sandy loam, 2 to 8 percent slopes	2.9	0.0%
129	Leeko loam, 0 to 4 percent slopes	1.2	0.0%
153	Motto-Muff-Rock outcrop complex, 2 to 25 percent slopes	259.1	2.4%
154	Motto-Rock outcrop complex, 2 to 25 percent slopes	87.9	0.8%
160	Nakoy loamy fine sand, 1 to 5 percent slopes	64.8	0.6%
229	Tipperary loamy fine sand, 1 to 8 percent slopes	99.4	0.9%
248	Uffens loam, 0 to 3 percent slopes	40.1	0.4%
255	Utaline very gravelly sandy loam, 8 to 25 percent slopes	29.6	0.3%
Subtotals for Soil Survey Area		**849.3**	**8.0%**
Totals for Area of Interest		**10,598.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas

shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Carbon Area, Utah, Parts of Carbon and Emery Counties

32—Frandsen-Gullied land complex

Map Unit Setting

National map unit symbol: jx54
Elevation: 7,180 to 7,580 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 38 to 45 degrees F
Frost-free period: 60 to 80 days
Farmland classification: Not prime farmland

Map Unit Composition

Frandsen and similar soils: 70 percent
Gullied land: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Frandsen

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone and shale

Typical profile

A1 - 0 to 4 inches: loam
C1 - 4 to 11 inches: loam
C2 - 11 to 40 inches: clay loam
IIC3 - 40 to 60 inches: fine sandy loam

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Ecological site: Mountain loam (Salina wildrye) (R048AY409UT)
Hydric soil rating: No

Description of Gullied Land

Setting

Landform: Fan remnants

Down-slope shape: Concave
Across-slope shape: Convex

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: Unranked

Minor Components

Senchert family
Percent of map unit: 5 percent

Rottulee family
Percent of map unit: 5 percent

Trag
Percent of map unit: 3 percent

Brycan
Percent of map unit: 2 percent

85—Rabbitex silt loam, 15 to 50 percent slopes

Map Unit Setting
National map unit symbol: jx70
Elevation: 8,380 to 8,970 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 38 to 45 degrees F
Frost-free period: 60 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition
Rabbitex and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rabbitex

Setting
Landform: Hillslopes, ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Side slope, crest, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium over residuum weathered from sandstone, limestone, siltstone and shale

Typical profile
A11, A12 - 0 to 10 inches: silt loam
C1k - 10 to 14 inches: gravelly loam

C2k, C3k - 14 to 44 inches: cobbly loam
C4 - 44 to 59 inches: loam
R - 59 to 63 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Mountain loam (Salina wildrye) (R048AY409UT)
Hydric soil rating: No

Minor Components

Datino variant

Percent of map unit: 5 percent

Rabbitex, thick surface

Percent of map unit: 5 percent

Skeletal soils

Percent of map unit: 5 percent

Shallow soils

Percent of map unit: 5 percent

97—Rottulee family-Trag complex

Map Unit Setting

National map unit symbol: jx7f
Elevation: 7,080 to 8,670 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 38 to 45 degrees F
Frost-free period: 60 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Rottulee family and similar soils: 60 percent
Trag and similar soils: 20 percent

Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rottulee Family

Setting

Landform: Mountain slopes, canyons
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Colluvium over residuum weathered from sandstone and shale

Typical profile

A1, B1 - 0 to 8 inches: loam
B2 - 8 to 15 inches: clay loam
B3 - 15 to 23 inches: gravelly silty clay loam
C1k - 23 to 34 inches: gravelly silt loam
R - 34 to 38 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Very Steep Stony Loam (Shrub) (R047XA473UT)
Hydric soil rating: No

Description of Trag

Setting

Landform: Canyons, mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Alluvium and/or colluvium derived from sandstone and shale

Typical profile

A1 - 0 to 10 inches: stony loam
B1,B21t,B22t - 10 to 36 inches: clay loam
C - 36 to 60 inches: clay loam

Properties and qualities

Slope: 30 to 60 percent
Percent of area covered with surface fragments: 13.0 percent
Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: High (about 10.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain loam (Salina wildrye) (R048AY409UT)
Hydric soil rating: No

Minor Components

Trag, clay loam surface
Percent of map unit: 8 percent

Curecanti family
Percent of map unit: 5 percent

Rock outcrop
Percent of map unit: 3 percent
Landform: Mountain slopes, hillslopes
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Convex
Across-slope shape: Convex

Badland
Percent of map unit: 2 percent
Landform: Mountain slopes, hillslopes
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Convex
Across-slope shape: Convex

Senchert
Percent of map unit: 2 percent

108—Silas loam

Map Unit Setting
National map unit symbol: jx3s
Elevation: 7,180 to 7,680 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 38 to 45 degrees F
Frost-free period: 60 to 80 days
Farmland classification: Not prime farmland

Map Unit Composition

Silas and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Silas

Setting

Landform: Valleys
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone and shale

Typical profile

A11 - 0 to 2 inches: loam
A12 - 2 to 17 inches: loam
A13 - 17 to 28 inches: loam
C1 - 28 to 43 inches: loam
C2 - 43 to 60 inches: sandy clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C
Ecological site: Wet Fresh Meadow (Willow-Sedge) (R048AY008UT)
Hydric soil rating: No

Minor Components

Tuffaceous material

Percent of map unit: 10 percent

Wet soils

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Wet Fresh Meadow (Willow-Sedge) (R048AY008UT)
Hydric soil rating: Yes

Brycan

Percent of map unit: 5 percent

116—Trag-Beje-Rottulee family complex

Map Unit Setting

National map unit symbol: jx42
Elevation: 7,180 to 7,380 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 38 to 45 degrees F
Frost-free period: 60 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition

Trag and similar soils: 40 percent
Beje and similar soils: 20 percent
Rottulee family and similar soils: 15 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trag

Setting

Landform: Valley floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium and/or colluvium derived from sandstone and shale

Typical profile

A1 - 0 to 5 inches: loam
B1,B21t,B22t - 5 to 39 inches: clay loam
C - 39 to 60 inches: clay loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Mountain loam (Salina wildrye) (R048AY409UT)
Hydric soil rating: No

Description of Beje

Setting

Landform: Benches, ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountainflank, crest, interfluve
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 6 inches: loam
B2t - 6 to 14 inches: clay loam
R - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R047XA446UT)
Hydric soil rating: No

Description of Rottulee Family

Setting

Landform: Valley sides
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Colluvium over residuum weathered from sandstone and shale

Typical profile

A1, B1 - 0 to 8 inches: loam
B2 - 8 to 15 inches: clay loam
B3 - 15 to 23 inches: gravelly silty clay loam
C1k - 23 to 34 inches: gravelly silt loam
R - 34 to 38 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Shrub) (R047XA460UT)
Hydric soil rating: No

Minor Components

Trag, stony surface
Percent of map unit: 10 percent

Doney family
Percent of map unit: 10 percent

Brycan
Percent of map unit: 2 percent

Silas
Percent of map unit: 2 percent

Falcon
Percent of map unit: 1 percent

117—Trag-Beje-Senchert complex

Map Unit Setting
National map unit symbol: jx43
Elevation: 7,180 to 8,480 feet
Mean annual precipitation: 16 to 22 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 50 to 100 days
Farmland classification: Not prime farmland

Map Unit Composition
Trag and similar soils: 45 percent
Beje and similar soils: 15 percent
Senchert and similar soils: 15 percent
Minor components: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trag

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium and/or colluvium derived from sandstone and shale

Typical profile

A1 - 0 to 5 inches: clay loam
B1,B21t,B22t - 5 to 39 inches: clay loam
C - 39 to 60 inches: clay loam

Properties and qualities

Slope: 3 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Mountain loam (Salina wildrye) (R048AY409UT)
Hydric soil rating: No

Description of Beje

Setting

Landform: Drainageways
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 6 inches: loam
B2t - 6 to 14 inches: clay loam
R - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R047XA446UT)
Hydric soil rating: No

Description of Senchert

Setting

Landform: Draws, drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Colluvium and/or slope alluvium over residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 4 inches: loam
B21t, B22t - 4 to 16 inches: loam
B23t - 16 to 35 inches: clay loam
R - 35 to 39 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Aspen) (R047XA508UT)
Hydric soil rating: No

Minor Components

Beje, high carbonate layer

Percent of map unit: 15 percent

Perma family

Percent of map unit: 5 percent

Beje, very gravelly surface

Percent of map unit: 3 percent

Silas

Percent of map unit: 2 percent

128—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Duchesne Area, Utah, Parts of Duchesne, Utah, and Wasatch Counties

12—Badland-Rock outcrop complex, 1 to 100 percent slopes

Map Unit Composition

Badland: 50 percent
Rock outcrop: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Badland

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

24—Blackston loam, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 1tzvn
Elevation: 4,660 to 5,710 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Blackston and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blackston

Setting

Landform: Fan remnants, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Convex, linear
Parent material: Alluvium derived from limestone, sandstone, shale and/or quartzite

Typical profile

Ap - 0 to 8 inches: loam
Bk1 - 8 to 19 inches: loam
Bk2 - 19 to 28 inches: gravelly loam

2Bk3 - 28 to 36 inches: extremely cobbly loam
3Bk4 - 36 to 44 inches: extremely cobbly sandy loam
3C - 44 to 60 inches: extremely cobbly loamy sand

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

27—Boreham loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 1vbcb
Elevation: 4,660 to 5,870 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Boreham and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boreham

Setting

Landform: Paleoterraces, fan remnants, strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave
Across-slope shape: Linear, convex
Parent material: Loamy alluvium over loamy-skeletal alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

Ap - 0 to 13 inches: loam

Bk1 - 13 to 26 inches: loam
Bk2 - 26 to 49 inches: loam
2Bk3 - 49 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

38—Cadrina, extremely stony-Casmos-Rock outcrop complex, 2 to 40 percent slopes

Map Unit Setting

National map unit symbol: 1vbcg
Elevation: 4,590 to 6,360 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Cadrina, extremely stony, and similar soils: 40 percent
Casmos and similar soils: 30 percent
Rock outcrop: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cadrina, Extremely Stony

Setting

Landform: Hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex

Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile
A - 0 to 2 inches: extremely stony loam
Bk - 2 to 15 inches: extremely stony loam
R - 15 to 60 inches: bedrock

Properties and qualities
Slope: 2 to 25 percent
Percent of area covered with surface fragments: 5.0 percent
Depth to restrictive feature: 5 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 7.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034BY118UT)
Hydric soil rating: No

Description of Casmos

Setting
Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone, shale and/or siltstone

Typical profile
A - 0 to 2 inches: very channery loam
C - 2 to 6 inches: channery loam
R - 6 to 60 inches: bedrock

Properties and qualities
Slope: 2 to 40 percent
Depth to restrictive feature: 5 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 0.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034BY118UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

61—Crib loam, 1 to 3 percent slopes

Map Unit Setting
National map unit symbol: 1v00g
Elevation: 5,050 to 6,890 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition
Crib and similar soils: 75 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crib

Setting
Landform: Strath terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium over glaciofluvial deposits derived from sandstone, limestone, shale, and quartzite

Typical profile
Ap - 0 to 11 inches: loam
Bk1 - 11 to 42 inches: clay loam
2Bk2 - 42 to 60 inches: extremely cobbly sandy clay loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 55 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034BY212UT)
Hydric soil rating: No

62—Crustown-Motto complex, 0 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1tzw4
Elevation: 4,660 to 5,510 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Crustown and similar soils: 50 percent
Motto and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crustown

Setting

Landform: Hills
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian deposits over residuum derived from calcareous sandstone

Typical profile

A - 0 to 5 inches: sand
C - 5 to 16 inches: loamy sand

Cr - 16 to 22 inches: bedrock
R - 22 to 60 inches: bedrock

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Sand (Fourwing Saltbush) (R034BY112UT)
Hydric soil rating: No

Description of Motto

Setting

Landform: Structural benches, hills
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Slope alluvium over residuum weathered from sandstone and shale

Typical profile

E - 0 to 2 inches: very flaggy loam
Btkn - 2 to 12 inches: clay loam
Bkn - 12 to 14 inches: clay loam
2C - 14 to 17 inches: extremely channery clay loam
2R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: 1 to 4 inches to natric; 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.07 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 5 percent

Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 60.0
Available water storage in profile: Very low (about 0.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034BY117UT)
Hydric soil rating: No

94—Greybull-Utaline-Badland complex, 4 to 40 percent slopes

Map Unit Setting
National map unit symbol: 1v01x
Elevation: 4,660 to 6,060 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition
Greybull and similar soils: 40 percent
Utaline and similar soils: 35 percent
Badland: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Greybull

Setting
Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from shale

Typical profile
A - 0 to 2 inches: very cobbly sandy loam
C - 2 to 35 inches: clay loam
Cr - 35 to 60 inches: bedrock

Properties and qualities
Slope: 15 to 40 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Shallow Loam (Shadscale) (R034BY121UT)
Hydric soil rating: No

Description of Utaline

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

A - 0 to 3 inches: very gravelly sandy loam
Bw - 3 to 7 inches: very gravelly loam
Bk - 7 to 60 inches: very gravelly loam

Properties and qualities

Slope: 4 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

Description of Badland

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8
Hydric soil rating: No

107_CC—Shupert-Dancehall, extremely bouldery complex, 1 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2swwt
Elevation: 5,180 to 8,460 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Shupert and similar soils: 40 percent
Dancehall, extremely bouldery, and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shupert

Setting

Landform: Valley floors, canyons
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Parent material: Alluvium derived from sandstone and shale

Typical profile

A - 0 to 3 inches: gravelly loam
C1 - 3 to 9 inches: clay loam
2C2 - 9 to 60 inches: clay loam

Properties and qualities

Slope: 1 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 49 to 71 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Loamy Bottom (Basin Big Sagebrush/Basin Wildrye (R048AY007UT)
Hydric soil rating: No

Description of Dancehall, Extremely Bouldery

Setting

Landform: Valley floors, canyons
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone and shale

Typical profile

A - 0 to 6 inches: bouldery sandy loam
C1 - 6 to 11 inches: loam
C2 - 11 to 34 inches: very bouldery loam
C3 - 34 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 1 to 15 percent
Percent of area covered with surface fragments: 10.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: About 49 to 71 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Loamy Bottom (Basin Big Sagebrush/Basin Wildrye (R048AY007UT)
Hydric soil rating: No

120—Jenrid sandy loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 1vbbk
Elevation: 4,610 to 5,840 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Jenrid and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jenrid

Setting

Landform: Alluvial flats, fan remnants, drainageways
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Alluvium and/or eolian deposits derived from limestone, sandstone, and shale and/or quartzite

Typical profile

A - 0 to 2 inches: sandy loam
C1 - 2 to 21 inches: sandy loam
C2 - 21 to 41 inches: loam
C3 - 41 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B

Ecological site: Alkali Flat (Greasewood) (R034BY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)
Hydric soil rating: No

123—Kilroy loam, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1vbbl
Elevation: 4,660 to 5,810 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Kilroy and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kilroy

Setting

Landform: Fan remnants, strath terraces
Down-slope shape: Concave, linear
Across-slope shape: Convex, linear
Parent material: Alluvium derived from sandstone, shale, limestone, and quartzite

Typical profile

A - 0 to 4 inches: loam
Bw - 4 to 16 inches: clay loam
Bk - 16 to 41 inches: gravelly loam
2BCk - 41 to 60 inches: very gravelly loam

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034BY106UT)

Hydric soil rating: No

158—Muff gravelly sandy loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1vbbt
Elevation: 4,660 to 6,000 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Muff and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Muff

Setting

Landform: Strath terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium over residuum weathered from shale

Typical profile

A1 - 0 to 2 inches: gravelly sandy loam
A2 - 2 to 7 inches: sandy loam
Btn - 7 to 14 inches: sandy clay loam
C - 14 to 29 inches: clay loam
Cr - 29 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 5 to 8 inches to natric; 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.07 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 40.0
Available water storage in profile: Very low (about 0.7 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 8s

Hydrologic Soil Group: D
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034BY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

173—Pariette gravelly sandy loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1vbbx
Elevation: 4,660 to 5,900 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Pariette and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pariette

Setting

Landform: Fan remnants, strath terraces
Down-slope shape: Concave, linear
Across-slope shape: Convex, linear
Parent material: Alluvium and/or residuum weathered from sandstone and shale

Typical profile

A - 0 to 3 inches: gravelly sandy loam
Bk1 - 3 to 10 inches: gravelly sandy loam
Bk2 - 10 to 17 inches: cobbly loam
Bk3 - 17 to 22 inches: gravelly loam
Cr - 22 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 20 to 31 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 15.0
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): 4c
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

242—Turzo clay loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 1v063
Elevation: 4,590 to 6,070 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Turzo and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Turzo

Setting

Landform: Drainageways, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Linear, concave
Across-slope shape: Concave
Parent material: Alluvium derived from sedimentary rock

Typical profile

A - 0 to 2 inches: clay loam
Bw1 - 2 to 10 inches: clay loam
Bw2 - 10 to 22 inches: clay loam
C1 - 22 to 35 inches: clay loam
C2 - 35 to 50 inches: sandy clay loam
C3 - 50 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.07 to 0.21 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 3 percent

Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 14.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: High (about 9.6 inches)

Interpretive groups
Land capability classification (irrigated): 8w
Land capability classification (nonirrigated): 8w
Hydrologic Soil Group: C/D
Ecological site: Alkali Flat (Greasewood) (R034BY006UT)
Hydric soil rating: No

243—Turzo-Umbo complex, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: 1v00z
Elevation: 4,590 to 5,610 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Turzo and similar soils: 65 percent
Umbo and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Turzo

Setting
Landform: Fan remnants, stream terraces, alluvial flats
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Alluvium derived from sandstone and shale and/or quartzite and/or limestone

Typical profile
A - 0 to 9 inches: clay loam
Bw - 9 to 32 inches: clay loam
C - 32 to 60 inches: loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

Description of Umbo

Setting

Landform: Alluvial flats
Landform position (three-dimensional): Base slope, tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from limestone, sandstone, and shale and/or quartzite

Typical profile

A - 0 to 10 inches: clay loam
C1 - 10 to 52 inches: clay loam
C2 - 52 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 42 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: High (about 11.1 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Wet Saline Meadow (Inland saltgrass) (R034BY024UT)
Hydric soil rating: No

256—Walknolls extremely channery sandy loam, 4 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1vbc7
Elevation: 5,540 to 7,380 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Walknolls and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walknolls

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from calcareous sandstone over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 2 inches: extremely channery sandy loam
Bk1 - 2 to 7 inches: very channery sandy loam
Bk2 - 7 to 14 inches: extremely channery sandy loam
R - 14 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 25 percent
Depth to restrictive feature: 4 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)

Other vegetative classification: Semidesert Shallow Loam (Utah Juniper-Pinyon) (034XY233UT_2)
Hydric soil rating: No

ALB—Kaiar-Walknolls-Honlu complex, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2dw58
Elevation: 5,630 to 6,880 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Kaiar and similar soils: 45 percent
Walknolls and similar soils: 30 percent
Honlu and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kaiar

Setting

Landform: Structural benches
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Slope alluvium from sandstone over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 4 inches: gravelly fine sandy loam
Bw - 4 to 10 inches: gravelly fine sandy loam
Bk1 - 10 to 15 inches: fine sandy loam
Bk2 - 15 to 21 inches: channery fine sandy loam
BCk - 21 to 28 inches: very channery fine sandy loam
R - 28 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.5 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): 4c
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Semidesert Sandy Loam (Fourwing Saltbush) (R034BY216UT)
Hydric soil rating: No

Description of Walknolls

Setting

Landform: Structural benches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium and/or residuum weathered from calcareous sandstone

Typical profile

A - 0 to 1 inches: gravelly sandy loam
Bk - 1 to 4 inches: gravelly loam
BCk - 4 to 11 inches: very gravelly loam
R - 11 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): 7c
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Hydric soil rating: No

Description of Honlu

Setting

Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium and/or slope alluvium derived from limestone, sandstone and/or shale

Typical profile

A - 0 to 2 inches: loam
Bk1 - 2 to 4 inches: loam

Bk2 - 4 to 8 inches: loam
Bk3 - 8 to 14 inches: clay loam
Bk4 - 14 to 51 inches: loam
BCk - 51 to 62 inches: gravelly loam
R - 62 to 66 inches: bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 59 to 62 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034BY212UT)
Hydric soil rating: No

ANF125—Southtwins-Whetrock-Twinnorth complex, 25 to 60 percent slopes

Map Unit Setting

National map unit symbol: 2wrfw
Elevation: 6,720 to 9,510 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Southtwins and similar soils: 35 percent
Whetrock and similar soils: 35 percent
Twinnorth and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Southtwins

Setting

Landform: Hillslopes
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Slope alluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 6 inches: sandy loam
Bk1 - 6 to 11 inches: very channery loam
Bk2 - 11 to 21 inches: extremely channery loam
Cr - 21 to 25 inches: bedrock
R - 25 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 60 percent
Depth to restrictive feature: 20 to 30 inches to paralithic bedrock; 24 to 33 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Upland Shallow Loam (Two-Needle Pinyon / Utah Juniper) (R048AY322UT)
Hydric soil rating: No

Description of Whetrock

Setting

Landform: Hillslopes
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from sandstone and shale

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 5 inches: loam
ABk - 5 to 11 inches: loam
Bk1 - 11 to 20 inches: very channery loam
Bk2 - 20 to 26 inches: extremely flaggy loam

Cr - 26 to 38 inches: bedrock
R - 38 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 60 percent
Depth to restrictive feature: 20 to 32 inches to paralithic bedrock; 30 to 46 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Upland Shallow Stony Loam (Two-Needle Pinyon /Douglas Fir) (R048AY330UT)
Hydric soil rating: No

Description of Twinnorth

Setting

Landform: Hillslopes
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 1 inches: channery loam
CBk1 - 1 to 6 inches: channery loam
CBk2 - 6 to 12 inches: extremely channery loam
CBk3 - 12 to 18 inches: extremely channery sandy clay loam
Cr - 18 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 60 percent
Depth to restrictive feature: 4 to 20 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Upland Very Steep Loam (Salina Wildrye). (R048AY366UT)
Hydric soil rating: No

ANF220—Kamack, moderately deep-Paunsaugunt-Senchert complex, 25 to 70 percent slopes

Map Unit Setting

National map unit symbol: 2wrg0
Elevation: 7,540 to 9,510 feet
Mean annual precipitation: 24 to 28 inches
Mean annual air temperature: 38 to 43 degrees F
Frost-free period: 50 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Kamack, moderately deep, and similar soils: 35 percent
Paunsaugunt and similar soils: 30 percent
Senchert and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kamack, Moderately Deep

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium and/or slope alluvium derived over residuum weathered from sedimentary rock

Typical profile

Oi - 0 to 4 inches: slightly decomposed plant material
A1 - 4 to 6 inches: loam
A2 - 6 to 16 inches: channery loam
Bw - 16 to 23 inches: very channery clay loam
C - 23 to 31 inches: extremely channery clay loam
Cr - 31 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 70 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain very steep stony loam (Douglas fir) (F048AY475UT)
Hydric soil rating: No

Description of Paunsaugunt

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 6 inches: channery loam
A2 - 6 to 17 inches: extremely channery loam
R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 70 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Very Steep Stony Loam (Browse) (R048AY473UT)
Hydric soil rating: No

Description of Senchert

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: channery loam
Bt1 - 5 to 11 inches: channery loam
Bt2 - 11 to 19 inches: loam
Bt3 - 19 to 34 inches: extremely channery loam
R - 34 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 70 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: High Mountain Very Steep Loam (Aspen) (F048AY528UT)
Hydric soil rating: No

APC—Grunnell-Pariette-Persayo complex, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2lhjh
Elevation: 5,250 to 6,410 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Grunnell and similar soils: 45 percent
Pariette and similar soils: 30 percent
Persayo and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grunnell

Setting

Landform: Hills
Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from sandstone

Typical profile

A - 0 to 3 inches: channery sandy clay loam
AB - 3 to 6 inches: gravelly loam
Bk - 6 to 12 inches: silty clay loam
R - 12 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 47 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): 7c
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034BY118UT)
Hydric soil rating: No

Description of Pariette

Setting

Landform: Hills
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from shale or siltstone

Typical profile

A - 0 to 2 inches: gravelly fine sandy loam
Bw - 2 to 6 inches: sandy clay loam
Bk1 - 6 to 13 inches: loam
Bk2 - 13 to 27 inches: silty clay loam
Bk3 - 27 to 35 inches: clay loam
BCky - 35 to 39 inches: parachannery loam
Cr - 39 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 15 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 50 percent
Gypsum, maximum in profile: 4 percent
Salinity, maximum in profile: Nonsaline to slightly saline (1.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

Description of Persayo

Setting

Landform: Hills
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from shale and siltstone

Typical profile

A - 0 to 2 inches: channery loam
C - 2 to 4 inches: channery loam
Cr - 4 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 3 to 11 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 4 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D

Ecological site: Desert Shallow Loam (Black Sagebrush) (R034BY118UT)
Hydric soil rating: No

DJE—Avintaquin, extremely stony-Floak-Paunsaugunt, very stony complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1j86s
Elevation: 7,050 to 7,900 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Avintaquin, extremely stony, and similar soils: 50 percent
Floak and similar soils: 25 percent
Paunsaugunt, very stony, and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Avintaquin, Extremely Stony

Setting

Landform: Dip slopes, mountain slopes
Landform position (three-dimensional): Mountainbase
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from limestone

Typical profile

A - 0 to 7 inches: very channery loam
Bk1 - 7 to 17 inches: extremely channery clay loam
Bk2 - 17 to 29 inches: extremely channery clay loam
R - 29 to 60 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 3.0 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 50 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Browse) (R048AY451UT)
Hydric soil rating: No

Description of Floak

Setting
Landform: Dip slopes
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Slope alluvium over residuum weathered from limestone

Typical profile
A - 0 to 6 inches: loam
Bt - 6 to 14 inches: cobbly loam
Btk - 14 to 18 inches: cobbly loam
Bk - 18 to 26 inches: very cobbly loam
R - 26 to 60 inches: bedrock

Properties and qualities
Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 45 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Oak) (R048AY415UT)
Hydric soil rating: No

Description of Paunsaugunt, Very Stony

Setting
Landform: Dip slopes
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone over colluvium derived from limestone

Typical profile
A1 - 0 to 1 inches: extremely flaggy silt loam

A2 - 1 to 4 inches: very flaggy silt loam
ABk - 4 to 8 inches: very flaggy silt loam
R - 8 to 60 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 4 to 10 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 5.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R048AY436UT)
Hydric soil rating: No

DKF—Paunsaugunt, extremely stony-Helper-Rock outcrop complex, 10 to 50 percent slopes

Map Unit Setting

National map unit symbol: 1lqs9
Elevation: 7,180 to 7,940 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Paunsaugunt, extremely stony, and similar soils: 40 percent
Helper and similar soils: 25 percent
Rock outcrop: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paunsaugunt, Extremely Stony

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sandstone over colluvium derived from limestone

Typical profile

A1 - 0 to 2 inches: very cobbly fine sandy loam
A2 - 2 to 6 inches: very cobbly loam
Ak - 6 to 12 inches: very cobbly loam
BCk - 12 to 17 inches: very cobbly loam
R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 50 percent
Percent of area covered with surface fragments: 8.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 60 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Very Steep Stony Loam (Browse) (R048AY473UT)
Hydric soil rating: No

Description of Helper

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium over residuum weathered from limestone, sandstone, and shale

Typical profile

A - 0 to 4 inches: very gravelly loam
Bw - 4 to 12 inches: gravelly loam
BCk - 12 to 23 inches: very parachannery loam
Cr - 23 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.2 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

DLC—Osote-Winspect complex, 2 to 20 percent slopes

Map Unit Setting

National map unit symbol: 1lny9
Elevation: 7,050 to 8,760 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Osote and similar soils: 55 percent
Winspect and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Osote

Setting

Landform: Drainageways, alluvial fans

Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave
Across-slope shape: Concave, convex
Parent material: Alluvium derived from sandstone and shale

Typical profile

A - 0 to 8 inches: clay loam
Bw - 8 to 15 inches: silty clay loam
Bk1 - 15 to 31 inches: silty clay loam
Bk2 - 31 to 49 inches: silty clay loam
Bk3 - 49 to 62 inches: silty clay loam

Properties and qualities

Slope: 2 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Winspect

Setting

Landform: Fan remnants
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone and shale

Typical profile

A1 - 0 to 2 inches: channery loam
A2 - 2 to 7 inches: channery clay loam
Bk1 - 7 to 19 inches: very channery clay loam
Bk2 - 19 to 42 inches: very channery clay loam
Bk3 - 42 to 54 inches: extremely channery clay loam
Bk4 - 54 to 60 inches: very channery clay loam

Properties and qualities

Slope: 2 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained

Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Moderate (about 6.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

DOC—Lostminer-McCadden-Bickmore complex, 4 to 40 percent slopes

Map Unit Setting
National map unit symbol: 1jrts
Elevation: 7,020 to 9,940 feet
Mean annual precipitation: 25 to 28 inches
Mean annual air temperature: 38 to 42 degrees F
Frost-free period: 50 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition
Lostminer and similar soils: 60 percent
Mccadden and similar soils: 20 percent
Bickmore and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lostminer

Setting
Landform: Mountain slopes
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Concave
Parent material: Slope alluvium derived from limestone and shale over residuum weathered from limestone and shale

Typical profile
A - 0 to 6 inches: loam
Bt - 6 to 16 inches: clay loam
Btk - 16 to 19 inches: very channery clay loam

BCk - 19 to 22 inches: parachannery silty clay loam
Cr - 22 to 26 inches: bedrock
R - 26 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 20 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock; 26 to 60 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Mountain Big Sagebrush) (R047XA516UT)
Hydric soil rating: No

Description of Mccadden

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from limestone, sandstone, and shale

Typical profile

A - 0 to 5 inches: gravelly silt loam
AB - 5 to 13 inches: very cobbly loam
BCk - 13 to 16 inches: extremely cobbly loam
R - 16 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 40 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 16 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0

Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: High Mountain Gravelly Loam (Mountain Big Sagebrush) (R048AY518UT)
Hydric soil rating: No

Description of Bickmore

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from limestone and shale

Typical profile

A1 - 0 to 4 inches: clay loam
A2 - 4 to 16 inches: clay loam
Bt1 - 16 to 25 inches: very channery clay loam
Bt2 - 25 to 32 inches: extremely flaggy clay loam
Btk - 32 to 39 inches: extremely flaggy clay loam
R - 39 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 40 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: High Mountain Stony Loam (Douglas Fir) (F048AY523UT)
Hydric soil rating: No

DRB—Peatross, occasionally flooded-Cookcan, occasionally flooded-Osote complex, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1lpch
Elevation: 6,530 to 7,840 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Peatross, occasionally flooded, and similar soils: 40 percent
Cookcan, occasionally flooded, and similar soils: 20 percent
Osote and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Peatross, Occasionally Flooded

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sedimentary rock

Typical profile

A - 0 to 6 inches: fine sandy loam
CB - 6 to 12 inches: fine sandy loam
Ab - 12 to 15 inches: loam
Bwb1 - 15 to 23 inches: loam
Bwb2 - 23 to 32 inches: silt loam
C1 - 32 to 38 inches: silty clay loam
C2 - 38 to 47 inches: silty clay loam
2C3 - 47 to 60 inches: very gravelly fine sandy loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 20 to 40 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C
Ecological site: Semiwet Fresh Streambank (R048AY006UT)
Hydric soil rating: No

Description of Cookcan, Occasionally Flooded

Setting

Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

Ak - 0 to 9 inches: clay loam
Bk - 9 to 11 inches: silty clay loam
2Bkg - 11 to 28 inches: fine sandy loam
2CBg - 28 to 34 inches: sandy loam
3Cg1 - 34 to 45 inches: very gravelly loamy sand
3Cg2 - 45 to 60 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 6 to 20 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline (0.2 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 8w
Land capability classification (nonirrigated): 8w
Hydrologic Soil Group: C/D
Ecological site: Wet Fresh Meadow (Willow-Sedge) (R048AY008UT)
Hydric soil rating: Yes

Description of Osote

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex

Parent material: Alluvium derived from sandstone and shale

Typical profile

A1 - 0 to 4 inches: loam
A2 - 4 to 10 inches: loam
Bk1 - 10 to 31 inches: loam
Bk2 - 31 to 42 inches: silt loam
Bk3 - 42 to 72 inches: silty clay loam

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.2 to 1.5 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

DSB—Brycan loam, 3 to 20 percent slopes

Map Unit Setting

National map unit symbol: 1jxwk
Elevation: 6,100 to 8,630 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Brycan and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brycan

Setting

Landform: Stream terraces, drainageways

Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Alluvium derived from limestone, sandstone, and shale

Typical profile

A - 0 to 7 inches: loam
ABk1 - 7 to 22 inches: loam
ABk2 - 22 to 30 inches: loam
Btk - 30 to 40 inches: loam
2Bk - 40 to 48 inches: gravelly very fine sandy loam
2Bkb - 48 to 60 inches: loam

Properties and qualities

Slope: 3 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: Mountain Loamy Bottom (Basin Wildrye) (R048AY410UT)
Hydric soil rating: No

EMF—Gremo-Kyune-Rock outcrop complex, 10 to 60 percent slopes

Map Unit Setting

National map unit symbol: 1jxzv
Elevation: 7,050 to 8,630 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Gremo and similar soils: 55 percent
Kyune and similar soils: 20 percent
Rock outcrop: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gremo

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and slope alluvium derived from sedimentary rock over residuum weathered from shale and siltstone

Typical profile

A - 0 to 6 inches: gravelly clay loam
Bk - 6 to 16 inches: silty clay loam
BCk - 16 to 20 inches: channery clay loam
C - 20 to 24 inches: very parachannery clay loam
Cr - 24 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 60 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Kyune

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from shale

Typical profile

A - 0 to 8 inches: loam
Bk1 - 8 to 11 inches: clay loam

Bk2 - 11 to 18 inches: gravelly loam
Bk3 - 18 to 27 inches: silt loam
BCk - 27 to 30 inches: very parachannery very fine sandy loam
Cr - 30 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 60 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (1.0 to 2.5 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

ENE—Kyune-Weed-Paunsaugunt complex, 10 to 60 percent slopes, very stony

Map Unit Setting

National map unit symbol: 1jtzz
Elevation: 7,450 to 9,220 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Kyune, very stony, and similar soils: 45 percent
Weed, very stony, and similar soils: 25 percent

Paunsaugunt, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kyune, Very Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from limestone, sandstone, and shale over residuum weathered from shale

Typical profile

A - 0 to 7 inches: cobbly clay loam
Bk - 7 to 9 inches: clay loam
BCk - 9 to 24 inches: paragravelly clay loam
Cr - 24 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 50 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 38 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Weed, Very Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock

Typical profile

A - 0 to 6 inches: cobbly loam

Bw - 6 to 11 inches: loam
Bt1 - 11 to 17 inches: loam
Bt2 - 17 to 27 inches: clay loam
Btk1 - 27 to 33 inches: paragravelly clay loam
Btk2 - 33 to 39 inches: paragravelly clay loam
BCtk - 39 to 50 inches: very paragravelly clay loam
BCk - 50 to 61 inches: extremely paragravelly loam
Cr - 61 to 71 inches: bedrock

Properties and qualities

Slope: 10 to 25 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 59 to 69 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Paunsaugunt, Very Stony

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from limestone or calcareous sandstone

Typical profile

A - 0 to 7 inches: extremely stony loam
Ak - 7 to 9 inches: extremely stony loam
R - 9 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 60 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 6 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.2 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R048AY436UT)
Hydric soil rating: No

EOC—Kyune, extremely stony-Tycreek-Clyl, extremely stony complex, 4 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1lqm9
Elevation: 7,050 to 8,200 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Kyune, extremely stony, and similar soils: 45 percent
Tycreek and similar soils: 25 percent
Clyl, extremely stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kyune, Extremely Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from limestone, sandstone, and shale over residuum weathered from shale

Typical profile

A - 0 to 10 inches: gravelly loam

Bk1 - 10 to 13 inches: gravelly silty clay loam
Bk2 - 13 to 32 inches: gravelly silty clay loam
BCk - 32 to 35 inches: very paragravelly silty clay loam
Cr - 35 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 25 percent
Percent of area covered with surface fragments: 3.0 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Tycreek

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Slope alluvium derived from limestone and sandstone and/or colluvium derived from limestone, sandstone, and shale

Typical profile

A - 0 to 9 inches: loam
Bt - 9 to 18 inches: clay loam
Btk1 - 18 to 35 inches: clay loam
Btk2 - 35 to 41 inches: clay loam
Bk - 41 to 61 inches: gravelly clay loam
BCk - 61 to 72 inches: parachannery silty clay loam

Properties and qualities

Slope: 4 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.07 to 0.21 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Clyl, Extremely Stony

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock

Typical profile

A1 - 0 to 4 inches: very cobbly fine sandy loam
A2 - 4 to 11 inches: very stony fine sandy loam
Bk1 - 11 to 21 inches: very cobbly loam
Bk2 - 21 to 44 inches: very stony loam
Bk3 - 44 to 60 inches: very stony loam

Properties and qualities

Slope: 4 to 25 percent
Percent of area covered with surface fragments: 5.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 50 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (1.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Mountain Stony Loam (Mountain Big Sagebrush) (R048AY448UT)
Hydric soil rating: No

FYE2—Walknolls-Cheeta-Honlu complex, 8 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2kkyx
Elevation: 5,770 to 7,180 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Walknolls and similar soils: 50 percent
Cheeta and similar soils: 20 percent
Honlu and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walknolls

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from calcareous sandstone

Typical profile

A - 0 to 2 inches: very gravelly sandy loam
Bk1 - 2 to 4 inches: gravelly loam
Bk2 - 4 to 9 inches: very gravelly sandy loam
R - 9 to 60 inches: bedrock

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: 7 to 11 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Hydric soil rating: No

Description of Cheeta

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone and shale

Typical profile

A - 0 to 2 inches: gravelly sandy loam
Bk - 2 to 3 inches: gravelly sandy loam
BCk - 3 to 6 inches: very gravelly sandy clay loam
R - 6 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 2 to 8 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Hydric soil rating: No

Description of Honlu

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock

Typical profile

A - 0 to 2 inches: loam
Bk1 - 2 to 4 inches: loam
Bk2 - 4 to 8 inches: loam
Bk3 - 8 to 14 inches: clay loam
Bk4 - 14 to 51 inches: loam
BCk - 51 to 62 inches: gravelly loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034BY212UT)
Hydric soil rating: No

GOF—Gompers-Rock outcrop-Tabyago, extremely bouldery complex, 25 to 80 percent slopes

Map Unit Setting

National map unit symbol: 2mx7m
Elevation: 6,400 to 8,530 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Gompers and similar soils: 50 percent
Rock outcrop: 30 percent
Tabyago, extremely bouldery, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gompers

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 3 inches: very channery loam
C - 3 to 8 inches: very channery loam
R - 8 to 60 inches: bedrock

Properties and qualities

Slope: 40 to 80 percent
Depth to restrictive feature: 5 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Upland Very Steep Shallow Loam (Pinyon-Utah Juniper) (R048AY342UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Tabyago, Extremely Bouldery

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Slope alluvium and/or colluvium derived from sandstone and shale

Typical profile

A1 - 0 to 4 inches: extremely bouldery sandy loam
A2 - 4 to 10 inches: very channery sandy loam
Bk1 - 10 to 21 inches: very stony sandy loam
Bk2 - 21 to 33 inches: extremely stony loam
R - 33 to 60 inches: bedrock

Properties and qualities

Slope: 25 to 65 percent
Percent of area covered with surface fragments: 10.0 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: B
Ecological site: Upland Very Steep Loam (Salina Wildrye). (R048AY366UT)
Hydric soil rating: No

KUA—Silas loam, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1hnkz
Elevation: 6,860 to 9,050 feet
Mean annual precipitation: 24 to 28 inches
Mean annual air temperature: 38 to 42 degrees F
Frost-free period: 50 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition

Silas and similar soils: 80 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Silas

Setting

Landform: Drainageways

Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sedimentary rock

Typical profile

A1 - 0 to 8 inches: loam
A2 - 8 to 21 inches: loam
CB - 21 to 26 inches: gravelly fine sandy loam
Ab - 26 to 35 inches: loam
CBb - 35 to 60 inches: gravelly loam

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: About 20 to 30 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline (0.0 to 0.5 mmhos/cm)
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Wet Fresh Meadow (Willow-Sedge) (R048AY008UT)
Hydric soil rating: No

LUE—Tycreek, extremely stony-Beje, very stony-Senchert complex, 4 to 40 percent slopes

Map Unit Setting

National map unit symbol: 1hnl3
Elevation: 7,180 to 9,320 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 38 to 43 degrees F
Frost-free period: 60 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Tycreek, extremely stony, and similar soils: 45 percent
Senchert and similar soils: 15 percent
Beje, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tycreek, Extremely Stony

Setting

Landform: Mountain slopes

Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from limestone, sandstone, and shale

Typical profile

A1 - 0 to 4 inches: cobbly fine sandy loam
A2 - 4 to 11 inches: cobbly fine sandy loam
Bt1 - 11 to 15 inches: fine sandy loam
Bt2 - 15 to 24 inches: cobbly loam
Btk - 24 to 35 inches: sandy clay loam
Bk - 35 to 46 inches: loam
BCk - 46 to 64 inches: parachannery loam
Cr - 64 to 68 inches: bedrock

Properties and qualities

Slope: 4 to 40 percent
Percent of area covered with surface fragments: 5.1 percent
Depth to restrictive feature: 59 to 72 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Beje, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 8 inches: gravelly fine sandy loam
Bt1 - 8 to 14 inches: gravelly clay loam
Bt2 - 14 to 17 inches: cobbly clay loam
R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 20 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R048AY436UT)
Hydric soil rating: No

Description of Senchert

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Concave, convex
Across-slope shape: Concave, convex
Parent material: Slope alluvium and/or colluvium derived from sandstone and shale over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 12 inches: loam
Bt1 - 12 to 22 inches: loam
Bt2 - 22 to 33 inches: clay loam
Btk - 33 to 34 inches: clay loam
R - 34 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 15 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 4 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Aspen) (F048AY506UT)
Hydric soil rating: No

MaB—Mikim loam, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1v5x2
Elevation: 5,180 to 6,720 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Mikim and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mikim

Setting

Landform: Drainageways, alluvial fans
Down-slope shape: Concave
Across-slope shape: Linear, convex
Parent material: Slope alluvium derived from limestone, sandstone, and shale and/or quartzite

Typical profile

Ap - 0 to 10 inches: loam
AC - 10 to 17 inches: loam
C1 - 17 to 26 inches: sandy clay loam
C2 - 26 to 32 inches: clay loam
C3 - 32 to 39 inches: sandy clay loam
C4 - 39 to 54 inches: clay loam
C5 - 54 to 60 inches: clay loam

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034BY212UT)
Hydric soil rating: No

MbA—Breezy-Bunkwater-Hickerson complex, 1 to 6 percent slopes

Map Unit Setting

National map unit symbol: 1v5x4
Elevation: 5,180 to 7,510 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Breezy and similar soils: 40 percent
Bunkwater and similar soils: 25 percent
Hickerson and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Breezy

Setting

Landform: Fan remnants, stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium derived from limestone, sandstone, and shale and/or quartzite

Typical profile

A - 0 to 2 inches: sandy clay loam
Bwn1 - 2 to 5 inches: sandy clay loam
Bwn2 - 5 to 14 inches: loam
Bwn3 - 14 to 20 inches: loam
Bk1 - 20 to 27 inches: loam
Bk2 - 27 to 37 inches: loam
Bk3 - 37 to 65 inches: sandy clay loam

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 14 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Semidesert Alkali Loam (Black Greasewood/Wyoming Big Sagebrush (R034BY213UT)
Hydric soil rating: No

Description of Bunkwater

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium and/or eolian deposits derived from limestone, sandstone, and shale and/or quartzite

Typical profile

A - 0 to 2 inches: loam
Bt - 2 to 11 inches: silty clay loam
Btnk - 11 to 20 inches: silty clay loam
Bkn - 20 to 34 inches: silt loam
Bk1 - 34 to 49 inches: loam
Bk2 - 49 to 56 inches: sandy clay loam
2Bk - 56 to 67 inches: sandy loam

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: 4 to 15 inches to natric
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.07 to 0.21 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0

Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): 7c
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Semidesert Alkali Loam (Black Greasewood/Wyoming Big Sagebrush (R034BY213UT)
Hydric soil rating: No

Description of Hickerson

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

Ap - 0 to 5 inches: loam
Bw1 - 5 to 17 inches: loam
Bw2 - 17 to 26 inches: clay loam
Bk1 - 26 to 39 inches: silty clay loam
Bk2 - 39 to 44 inches: fine sandy loam
Ab - 44 to 45 inches: silt loam
CB - 45 to 56 inches: sandy loam
C - 56 to 67 inches: fine sandy loam

Properties and qualities

Slope: 1 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: About 42 to 60 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 34 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Loamy Bottom (Basin Big Sagebrush) (R034BY009UT)
Hydric soil rating: No

MLC—Molen-Walknolls-Gerst complex, 3 to 20 percent slopes

Map Unit Setting

National map unit symbol: 2kwjl
Elevation: 5,250 to 6,560 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Molen and similar soils: 45 percent
Walknolls and similar soils: 25 percent
Gerst and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Molen

Setting

Landform: Erosion remnants, structural benches
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Eolian sands and/or slope alluvium derived from sedimentary rock over residuum weathered from sandstone and shale

Typical profile

A - 0 to 3 inches: gravelly fine sandy loam
Bw - 3 to 9 inches: fine sandy loam
Bk1 - 9 to 12 inches: loam
Bk2 - 12 to 23 inches: loam
2Bky - 23 to 34 inches: clay loam
2R - 34 to 60 inches: bedrock

Properties and qualities

Slope: 3 to 10 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 45 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to slightly saline (1.0 to 6.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034BY212UT)
Hydric soil rating: No

Description of Walknolls

Setting

Landform: Structural benches, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Slope alluvium and colluvium over residuum weathered from calcareous sandstone

Typical profile

A - 0 to 2 inches: gravelly loamy sand
Bk - 2 to 3 inches: gravelly sandy loam
BCk - 3 to 9 inches: extremely channery sandy loam
R - 9 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 20 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Black Sagebrush) (R034BY227UT)
Hydric soil rating: No

Description of Gerst

Setting

Landform: Hills on structural benches
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex

Parent material: Slope alluvium and/or colluvium derived from sandstone and shale over residuum weathered from shale

Typical profile

A - 0 to 3 inches: loam
CBk - 3 to 9 inches: cobbly loam
C - 9 to 17 inches: very parachannery loam
Cr - 17 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 20 percent
Depth to restrictive feature: 6 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Hydric soil rating: No

MXE—Tosca-Paunsaugunt-Minnimaud complex, 20 to 55 percent slopes

Map Unit Setting

National map unit symbol: 2lb3r
Elevation: 6,560 to 9,020 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Tosca and similar soils: 35 percent
Paunsaugunt and similar soils: 30 percent
Minnimaud and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tosca

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sandstone and shale over residuum weathered from sandstone and shale

Typical profile

Oe - 0 to 0 inches: moderately decomposed plant material
A - 0 to 7 inches: channery loam
Bk1 - 7 to 19 inches: very channery loam
Bk2 - 19 to 26 inches: very channery loam
Bk3 - 26 to 32 inches: channery loam
Bk4 - 32 to 44 inches: extremely channery fine sandy loam
R - 44 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 55 percent
Depth to restrictive feature: 39 to 46 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Mountain Stony Loam (Douglas Fir) (F048AY452UT)
Hydric soil rating: No

Description of Paunsaugunt

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sedimentary rock

Typical profile

A - 0 to 7 inches: very channery loam
Bk - 7 to 10 inches: very channery fine sandy loam
R - 10 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 55 percent
Depth to restrictive feature: 9 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Stony Loam (Douglas Fir) (F048AY452UT)
Hydric soil rating: No

Description of Minnimaud

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from interbedded sedimentary rock over residuum weathered from interbedded sedimentary rock

Typical profile

A1 - 0 to 6 inches: channery loam
A2 - 6 to 11 inches: gravelly loam
Bk1 - 11 to 24 inches: gravelly clay loam
Bk2 - 24 to 44 inches: paragravelly loam
Cr - 44 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 55 percent
Depth to restrictive feature: 39 to 59 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 42 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Browse) (R048AY451UT)
Hydric soil rating: No

NLE—Howbert-Beje-Kyune complex, 4 to 40 percent slopes, very stony

Map Unit Setting

National map unit symbol: 1kyy0
Elevation: 6,920 to 8,760 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Howbert, very stony, and similar soils: 50 percent
Beje, very stony, and similar soils: 20 percent
Kyune, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Howbert, Very Stony

Setting

Landform: Valley floors
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Slope alluvium derived from limestone, sandstone, and shale

Typical profile

A - 0 to 2 inches: sandy loam
Bt - 2 to 5 inches: loam
Btk - 5 to 11 inches: loam
Bk1 - 11 to 23 inches: loam
Bk2 - 23 to 30 inches: loam
Bk3 - 30 to 48 inches: loam
Bk4 - 48 to 60 inches: gravelly loam

Properties and qualities

Slope: 4 to 10 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Mountain Loam (Mountain Big Sagebrush) (R048AY405UT)
Hydric soil rating: No

Description of Beje, Very Stony

Setting

Landform: Ridges
Landform position (three-dimensional): Crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Slope alluvium derived from sedimentary rock over residuum weathered from sandstone and shale

Typical profile

A - 0 to 2 inches: loam
Bt1 - 2 to 5 inches: clay loam
Bt2 - 5 to 11 inches: clay loam
Btk - 11 to 14 inches: sandy clay loam
R - 14 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 15 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Salinity, maximum in profile: Nonsaline (0.2 to 1.5 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mountain Big Sagebrush) (R048AY436UT)
Hydric soil rating: No

Description of Kyune, Very Stony

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from limestone, sandstone, and shale over residuum weathered from shale

Typical profile

A - 0 to 2 inches: stony sandy loam
Bw - 2 to 11 inches: loam
Bk1 - 11 to 19 inches: sandy clay loam
Bk2 - 19 to 26 inches: clay loam
Cr - 26 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 40 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Browse) (R048AY451UT)
Hydric soil rating: No

NOTCOM—No Digital Data Available

Map Unit Composition

Notcom: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Notcom

Properties and qualities

NXE—Tyzut-Rabbitex complex, 10 to 55 percent slopes

Map Unit Setting

National map unit symbol: 2ncm1
Elevation: 6,000 to 8,530 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Tyzut and similar soils: 70 percent
Rabbitex and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tyzut

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from sedimentary rock

Typical profile

A - 0 to 7 inches: channery loam
Bk - 7 to 15 inches: very flaggy loam
R - 15 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 55 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Upland Shallow Stony Loam (Two-Needle Pinyon /Douglas Fir) (F048AY330UT)
Hydric soil rating: No

Description of Rabbitex

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from sedimentary rock

Typical profile

A - 0 to 4 inches: channery fine sandy loam
ABk - 4 to 9 inches: loam
Bk1 - 9 to 21 inches: loam
Bk2 - 21 to 32 inches: channery clay loam
BCk - 32 to 41 inches: very channery clay loam
R - 41 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 40 percent
Depth to restrictive feature: 39 to 59 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 58 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Upland Stony Loam (Pinyon-Utah Juniper) (R048AY331UT)
Hydric soil rating: No

OCE—Rencot very channery loam, 5 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2mx9k
Elevation: 5,710 to 8,880 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Rencot and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rencot

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from sandstone and shale

Typical profile

A - 0 to 2 inches: very channery loam
Bk1 - 2 to 4 inches: very gravelly loam
Bk2 - 4 to 7 inches: very channery loam
Bk3 - 7 to 18 inches: extremely channery loam
R - 18 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 50 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D
Ecological site: Upland Shallow Stony Loam (Two-Needle Pinyon /Douglas Fir) (F048AY330UT)
Hydric soil rating: No

OPF—Pathead-Paunsaugunt-Gompers complex, 40 to 80 percent slopes

Map Unit Setting

National map unit symbol: 2mxbk
Elevation: 6,100 to 9,320 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 45 degrees F
Frost-free period: 70 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Pathead and similar soils: 30 percent
Paunsaugunt and similar soils: 30 percent
Gompers and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pathead

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone and shale

Typical profile

A - 0 to 5 inches: very channery loam
Bw - 5 to 12 inches: channery loam
BCk - 12 to 21 inches: extremely channery fine sandy loam
R - 21 to 60 inches: bedrock

Properties and qualities

Slope: 50 to 80 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 14 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: C
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Paunsaugunt

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium over residuum weathered from limestone and sandstone

Typical profile

A1 - 0 to 2 inches: channery loam
A2 - 2 to 7 inches: very flaggy loam
Ak - 7 to 14 inches: extremely flaggy loam
R - 14 to 60 inches: bedrock

Properties and qualities

Slope: 40 to 70 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 14 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Shallow Loam (Mixed Conifer) (R048AY443UT)
Hydric soil rating: No

Description of Gompers

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium derived from sedimentary rock

Typical profile

A1 - 0 to 2 inches: very channery sandy loam

A2 - 2 to 6 inches: very channery sandy loam
C - 6 to 14 inches: extremely flaggy sandy loam
R - 14 to 60 inches: bedrock

Properties and qualities

Slope: 50 to 75 percent
Depth to restrictive feature: 4 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Upland Shallow Stony Loam (Two-Needle Pinyon /Douglas Fir) (F048AY330UT)
Hydric soil rating: No

PKD—Skitzy-Strych complex, 2 to 20 percent slopes

Map Unit Setting

National map unit symbol: 1v5yn
Elevation: 4,620 to 8,170 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Skitzy and similar soils: 45 percent
Strych and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Skitzy

Setting

Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Mixed alluvium derived from sandstone and shale

Typical profile

A - 0 to 2 inches: very channery fine sandy loam
Bw - 2 to 5 inches: channery loam
Bkn - 5 to 15 inches: very channery loam
Bky - 15 to 36 inches: very channery fine sandy loam
Bk - 36 to 60 inches: very channery loam

Properties and qualities

Slope: 2 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 6.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Alkali Flat (Greasewood) (R034BY006UT)
Hydric soil rating: No

Description of Strych

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Mixed alluvium derived from sandstone and shale

Typical profile

A - 0 to 2 inches: very channery sandy loam
Bw - 2 to 6 inches: channery fine sandy loam
Bk1 - 6 to 15 inches: extremely channery sandy loam
Bk2 - 15 to 32 inches: very channery loam
Bky - 32 to 60 inches: very channery sandy loam
BCky - 60 to 79 inches: very channery fine sandy loam

Properties and qualities

Slope: 2 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent

Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.5 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Semidesert Gravelly Loam (Wyoming Big Sagebrush) (R034BY205UT)
Hydric soil rating: No

QuG—Wiggler-Badland-Helper complex, 40 to 80 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2pw09
Elevation: 6,720 to 9,740 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F
Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Wiggler, very stony, and similar soils: 45 percent
Helper, very stony, and similar soils: 20 percent
Badland: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wiggler, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium over residuum weathered from shale

Typical profile

A - 0 to 1 inches: very channery loam
Bw - 1 to 5 inches: parachannery clay loam
C - 5 to 8 inches: very parachannery loam
Cr - 8 to 60 inches: bedrock

Properties and qualities

Slope: 50 to 80 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 4 to 20 inches to paralithic bedrock
Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Helper, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Lower third of mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from shale over residuum weathered from shale

Typical profile

A - 0 to 6 inches: channery loam
Bk - 6 to 13 inches: channery clay loam
BCk - 13 to 24 inches: very parachannery loam
Cr - 24 to 60 inches: bedrock

Properties and qualities

Slope: 40 to 70 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 17 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain very steep stony loam (Douglas fir) (F048AY475UT)
Hydric soil rating: No

Description of Badland

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

RAL—Cheeta-Rock outcrop complex, 30 to 80 percent slopes

Map Unit Setting

National map unit symbol: 2knjz
Elevation: 5,580 to 7,220 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Cheeta and similar soils: 55 percent
Rock outcrop: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cheeta

Setting

Landform: Valley sides, mountain slopes
Landform position (three-dimensional): Center third of mountainflank, rise
Down-slope shape: Linear, convex
Across-slope shape: Concave, convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 2 inches: very channery loam
C - 2 to 6 inches: extremely channery loam
R - 6 to 60 inches: bedrock

Properties and qualities

Slope: 30 to 80 percent
Depth to restrictive feature: 5 to 13 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 1 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Semidesert Very Steep Shallow Loam (Utah Juniper-Pinyon) (R034BY259UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

SLE—Aagard-Nathale-McCadden complex, 5 to 50 percent slopes, very stony

Map Unit Setting
National map unit symbol: 1jvzk
Elevation: 7,150 to 9,410 feet
Mean annual precipitation: 25 to 28 inches
Mean annual air temperature: 38 to 42 degrees F
Frost-free period: 50 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition
Aagard, very stony, and similar soils: 40 percent
Nathale, very stony, and similar soils: 25 percent
Mccadden, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aagard, Very Stony

Setting
Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Slope alluvium and/or colluvium derived from sedimentary rock over residuum weathered from limestone and shale

Typical profile
A1 - 0 to 4 inches: loam
A2 - 4 to 12 inches: loam
Bt1 - 12 to 17 inches: loam

Bt2 - 17 to 25 inches: cobbly clay loam
Btk - 25 to 31 inches: cobbly loam
Bk - 31 to 42 inches: gravelly loam
BCk - 42 to 65 inches: silty clay loam

Properties and qualities

Slope: 5 to 30 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Aspen) (F047XA508UT)
Hydric soil rating: No

Description of Nathale, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Concave
Parent material: Colluvium and/or slope alluvium derived from limestone, sandstone, and shale over residuum weathered from limestone and sandstone

Typical profile

A - 0 to 5 inches: channery loam
Bt - 5 to 8 inches: gravelly clay loam
Btk1 - 8 to 13 inches: gravelly clay loam
Btk2 - 13 to 21 inches: very channery clay loam
Bk - 21 to 25 inches: gravelly silty clay loam
BCk - 25 to 34 inches: very paragravelly clay loam
R - 34 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 50 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Mountain Big Sagebrush) (R047XA516UT)
Hydric soil rating: No

Description of Mccadden, Very Stony

Setting

Landform: Mountains
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from limestone, sandstone, and shale

Typical profile

A - 0 to 8 inches: very cobbly loam
Bk - 8 to 16 inches: very cobbly loam
R - 16 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 45 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.2 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: High Mountain Stony Clay (Slender Wheatgrass) (R047XA528UT)
Hydric soil rating: No

SPE—Aagard-Gilluly-McCadden complex, 10 to 70 percent slopes

Map Unit Setting

National map unit symbol: 1l9jz
Elevation: 6,300 to 10,500 feet
Mean annual precipitation: 24 to 28 inches
Mean annual air temperature: 38 to 42 degrees F
Frost-free period: 50 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition

Aagard and similar soils: 45 percent
Gilluly and similar soils: 30 percent
Mccadden and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aagard

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Slope alluvium and/or colluvium derived from sedimentary rock over residuum weathered from limestone and shale

Typical profile

A1 - 0 to 5 inches: loam
A2 - 5 to 14 inches: loam
Bt1 - 14 to 29 inches: clay loam
Bt2 - 29 to 35 inches: cobbly clay loam
Btk - 35 to 39 inches: gravelly loam
Bk - 39 to 45 inches: very gravelly loam
BCk1 - 45 to 54 inches: gravelly loam
BCk2 - 54 to 68 inches: gravelly silty clay loam
R - 68 to 72 inches: bedrock

Properties and qualities

Slope: 10 to 35 percent
Depth to restrictive feature: 59 to 76 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Aspen) (F048AY506UT)
Hydric soil rating: No

Description of Gilluly

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium derived from sedimentary rock over residuum weathered from sedimentary rock

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 5 inches: loam
Bt1 - 5 to 12 inches: clay loam
Bt2 - 12 to 18 inches: clay loam
Btk - 18 to 24 inches: cobbly clay loam
Bk - 24 to 29 inches: extremely cobbly clay loam
R - 29 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 70 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: High Mountain Loam (Douglas-fir) (F048AY509UT)
Hydric soil rating: No

Description of Mccadden

Setting

Landform: Mountains
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or slope alluvium over residuum weathered from limestone, sandstone, and shale

Typical profile

A - 0 to 5 inches: gravelly silt loam
AB - 5 to 13 inches: very cobbly loam
BCk - 13 to 16 inches: extremely cobbly loam
R - 16 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 45 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 16 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: High Mountain Gravelly Loam (Mountain Big Sagebrush) (R048AY518UT)
Hydric soil rating: No

TPG—Pathead-Averett-Modo association, 40 to 70 percent slopes, very stony

Map Unit Setting

National map unit symbol: 1jvxs
Elevation: 6,300 to 8,430 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 40 to 43 degrees F

Frost-free period: 70 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Pathead, very stony, and similar soils: 40 percent
Averett, extremely stony, and similar soils: 30 percent
Modo, very stony, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pathead, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone and shale

Typical profile

A - 0 to 5 inches: very flaggy loam
Bw - 5 to 10 inches: very cobbly loam
BCk1 - 10 to 19 inches: very cobbly clay loam
BCk2 - 19 to 24 inches: cobbly clay loam
BCk3 - 24 to 30 inches: very channery loam
R - 30 to 60 inches: bedrock

Properties and qualities

Slope: 50 to 70 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 14 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain very steep loam (Salina wildrye) (R048AY466UT)
Hydric soil rating: No

Description of Averett, Extremely Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave

Across-slope shape: Concave
Parent material: Colluvium and/or residuum weathered from sandstone and shale

Typical profile

A - 0 to 3 inches: very stony fine sandy loam
AB - 3 to 10 inches: stony loam
Bt - 10 to 19 inches: stony clay loam
Btk - 19 to 30 inches: very cobbly sandy clay loam
Bk - 30 to 44 inches: gravelly clay loam
BCk - 44 to 61 inches: very gravelly fine sandy loam
R - 61 to 65 inches: bedrock

Properties and qualities

Slope: 50 to 70 percent
Percent of area covered with surface fragments: 12.0 percent
Depth to restrictive feature: 60 to 96 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Mountain Stony Loam (Browse) (R048AY451UT)
Hydric soil rating: No

Description of Modo, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium over residuum weathered from sandstone and shale

Typical profile

A - 0 to 2 inches: very flaggy fine sandy loam
Bw - 2 to 8 inches: gravelly loam
R - 8 to 60 inches: bedrock

Properties and qualities

Slope: 40 to 70 percent
Percent of area covered with surface fragments: 2.0 percent
Depth to restrictive feature: 4 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Very low (about 1.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Mountain Very Steep Stony Loam (Browse) (R048AY473UT)
Hydric soil rating: No

VJH2—Whetrock, extremely stony-Rock outcrop-Tyzut, rubbly complex, 50 to 80 percent slopes

Map Unit Setting

National map unit symbol: 2p26b
Elevation: 6,000 to 8,530 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 110 days
Farmland classification: Not prime farmland

Map Unit Composition

Whetrock, extremely stony, and similar soils: 40 percent
Rock outcrop: 25 percent
Tyzut, rubbly, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Whetrock, Extremely Stony

Setting

Landform: Mountains
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from sandstone and shale

Typical profile

A1 - 0 to 4 inches: very channery loam
A2 - 4 to 12 inches: channery loam
Bk1 - 12 to 20 inches: very channery loam

Bk2 - 20 to 28 inches: extremely channery sandy clay loam
Cr - 28 to 60 inches: bedrock

Properties and qualities

Slope: 50 to 80 percent
Percent of area covered with surface fragments: 12.0 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 45 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: C
Ecological site: Upland Very Steep Stony Loam (Pinyon-Utah Juniper) (R048AY344UT)
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Tyzut, Rubbly

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and colluvium over residuum weathered from limestone, sandstone, and shale

Typical profile

A - 0 to 5 inches: extremely flaggy sandy loam
Bk1 - 5 to 13 inches: extremely channery loam
Bk2 - 13 to 19 inches: extremely channery sandy loam
R - 19 to 60 inches: bedrock

Properties and qualities

Slope: 50 to 80 percent
Percent of area covered with surface fragments: 25.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Ecological site: Upland Very Steep Shallow Loam (Pinyon-Utah Juniper) (R048AY342UT)
Hydric soil rating: No

WRD—Walknolls-Gerst-Lanver complex, 5 to 60 percent slopes

Map Unit Setting
National map unit symbol: 2mxb2
Elevation: 5,410 to 6,200 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition
Walknolls and similar soils: 40 percent
Gerst and similar soils: 35 percent
Lanver and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walknolls

Setting
Landform: Hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium over residuum weathered from calcareous sandstone

Typical profile
A - 0 to 3 inches: very channery fine sandy loam
Bk - 3 to 10 inches: extremely channery fine sandy loam

R - 10 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 35 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 0.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Black Sagebrush) (R034BY227UT)
Hydric soil rating: No

Description of Gerst

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or colluvium derived from sedimentary rock over residuum weathered from shale

Typical profile

A - 0 to 2 inches: very channery loam
BC - 2 to 7 inches: parachannery loam
C - 7 to 10 inches: very parachannery clay loam
Cr - 10 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 60 percent
Depth to restrictive feature: 6 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 3.0
Available water storage in profile: Very low (about 1.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Black Sagebrush) (R034BY227UT)
Hydric soil rating: No

Description of Lanver

Setting
Landform: Hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Eolian deposits and/or slope alluvium derived from sedimentary rock over residuum weathered from sandstone and shale

Typical profile
A - 0 to 4 inches: very channery fine sandy loam
Bk - 4 to 8 inches: channery loam
Bkn1 - 8 to 13 inches: very channery loam
Bkn2 - 13 to 15 inches: very channery fine sandy loam
Bky - 15 to 26 inches: extremely flaggy fine sandy loam
R - 26 to 60 inches: bedrock

Properties and qualities
Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 45 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 15.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 14.0
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Semidesert Gravelly Sandy Loam (Wyoming Big Sagebrush) (R034BY206UT)
Hydric soil rating: No

WUD—Walknolls, extremely stony-Lanver-Honlu complex, 4 to 20 percent slopes

Map Unit Setting

National map unit symbol: 2dw54
Elevation: 5,770 to 7,050 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 49 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Walknolls, extremely stony, and similar soils: 45 percent
Lanver and similar soils: 20 percent
Honlu and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walknolls, Extremely Stony

Setting

Landform: Hills on structural benches
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Slope alluvium and/or residuum weathered from calcareous sandstone

Typical profile

A - 0 to 2 inches: very gravelly sandy loam
Bk1 - 2 to 5 inches: very gravelly fine sandy loam
Bk2 - 5 to 9 inches: extremely gravelly fine sandy loam
Bk3 - 9 to 14 inches: extremely gravelly sandy loam
R - 14 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 20 percent
Percent of area covered with surface fragments: 5.0 percent
Depth to restrictive feature: 4 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very low (about 0.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Semidesert Shallow Loam (Utah Juniper-Pinyon) (R034BY233UT)
Hydric soil rating: No

Description of Lanver

Setting

Landform: Escarpments
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium derived from sandstone over residuum weathered from sandstone

Typical profile

A - 0 to 5 inches: very channery fine sandy loam
Bk1 - 5 to 16 inches: channery loam
Bk2 - 16 to 24 inches: very channery loam
Bkn - 24 to 32 inches: very channery loam
Bkny - 32 to 35 inches: very channery fine sandy loam
R - 35 to 60 inches: bedrock

Properties and qualities

Slope: 4 to 20 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.21 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 30 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 12.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 40.0
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Semidesert Gravelly Sandy Loam (Wyoming Big Sagebrush) (R034BY206UT)
Hydric soil rating: No

Description of Honlu

Setting

Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex

Parent material: Slope alluvium derived from limestone, sandstone, and shale and/or quartzite

Typical profile

A - 0 to 3 inches: gravelly loam
Bw - 3 to 4 inches: gravelly loam
Bk1 - 4 to 12 inches: gravelly loam
Bk2 - 12 to 17 inches: loam
Bk3 - 17 to 28 inches: loam
BCk1 - 28 to 39 inches: gravelly loam
BCk2 - 39 to 60 inches: gravelly loam

Properties and qualities

Slope: 4 to 10 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: Semidesert Loam (Wyoming Big Sagebrush) (R034BY212UT)
Hydric soil rating: No

Uintah and Ouray Indian Reservation, Utah

NOTCOM—No Digital Data Available

Map Unit Composition

Notcom: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Notcom

Properties and qualities

Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties

12—Badland-Rock outcrop complex, 1 to 100 percent slopes

Map Unit Composition

Badland: 50 percent
Rock outcrop: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Badland

Setting

Landform: Hills, ridges, erosion remnants
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

C - 0 to 2 inches: clay
Cr - 2 to 12 inches: bedrock

Properties and qualities

Slope: 1 to 75 percent
Depth to restrictive feature: 0 to 6 inches to paralithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 20.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0
Available water storage in profile: Very low (about 0.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Erosion remnants, ledges, cliffs, escarpments
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

H1 - 0 to 60 inches: bedrock

Properties and qualities

Slope: 1 to 100 percent
Depth to restrictive feature: 0 to 4 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)

Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Montwel

Percent of map unit: 5 percent
Hydric soil rating: No

Walknolls, very channery sandy loam

Percent of map unit: 5 percent
Ecological site: Semidesert Shallow Loam (Black Sagebrush) (R034XY227UT)
Hydric soil rating: No

Cadrina, extremely channery loam

Percent of map unit: 5 percent
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)
Hydric soil rating: No

27—Boreham loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: jz22
Elevation: 4,800 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Boreham and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boreham

Setting

Landform: Strath terraces, fan remnants
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave
Across-slope shape: Linear, convex
Parent material: Loamy alluvium over loamy-skeletal alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

Ap - 0 to 13 inches: loam
Bk1 - 13 to 26 inches: loam

Bk2 - 26 to 49 inches: loam
2Bk3 - 49 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): 2c
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

Minor Components

Blackston

Percent of map unit: 8 percent
Hydric soil rating: No

Crib

Percent of map unit: 7 percent
Hydric soil rating: No

62—Crustown-Motto complex, 2 to 25 percent slopes

Map Unit Setting

National map unit symbol: jz3v
Elevation: 4,700 to 5,700 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Crustown and similar soils: 50 percent
Motto and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crustown

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian deposits over residuum derived from calcareous sandstone

Typical profile

A - 0 to 5 inches: sand
C - 5 to 16 inches: loamy sand
Cr - 16 to 22 inches: bedrock
R - 22 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Sand (Fourwing Saltbush) (R034XY112UT)
Other vegetative classification: Desert Sand (Fourwing Saltbush) (034XY112UT_1)
Hydric soil rating: No

Description of Motto

Setting

Landform: Hills, structural benches
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Slope alluvium over residuum derived from shale and sandstone

Typical profile

E - 0 to 2 inches: very flaggy loam
Btkn - 2 to 12 inches: clay loam
Bk - 12 to 14 inches: clay loam
2C - 14 to 17 inches: extremely channery clay loam
2R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 60.0
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)
Other vegetative classification: Desert Shallow Clay (Mat Saltbush) (034XY117UT_1)
Hydric soil rating: No

Minor Components

Cadrina, extremely stony loam

Percent of map unit: 8 percent
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034XY118UT)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 7 percent
Hydric soil rating: No

94—Greybull-Utaline-Badland complex, 8 to 50 percent slopes

Map Unit Setting

National map unit symbol: jz4z
Elevation: 4,700 to 5,500 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Greybull and similar soils: 40 percent

Utaline and similar soils: 35 percent
Badland: 10 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Greybull

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and colluvium over residuum derived from shale

Typical profile

A - 0 to 2 inches: very cobbly sandy loam
C - 2 to 35 inches: clay loam
Cr - 35 to 60 inches: bedrock

Properties and qualities

Slope: 20 to 50 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)
Hydric soil rating: No

Description of Utaline

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

A - 0 to 3 inches: very gravelly sandy loam
Bw - 3 to 7 inches: very gravelly loam
Bk - 7 to 60 inches: very gravelly loam

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

Description of Badland

Setting

Landform: Ridges, erosion remnants, hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

C - 0 to 2 inches: clay
Cr - 2 to 12 inches: bedrock

Properties and qualities

Slope: 8 to 50 percent
Depth to restrictive feature: 0 to 2 inches to paralithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 20.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0
Available water storage in profile: Very low (about 0.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Motto
Percent of map unit: 4 percent
Hydric soil rating: No

Muff
Percent of map unit: 4 percent
Hydric soil rating: No

Leebench
Percent of map unit: 4 percent
Hydric soil rating: No

Endoaquolls
Percent of map unit: 3 percent
Landform: Scarps
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Wet Fresh Streambank (Willow) (R034XY021UT)
Hydric soil rating: Yes

128—Leebench sandy loam, 2 to 8 percent slopes

Map Unit Setting
National map unit symbol: jyx0
Elevation: 4,590 to 5,400 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition
Leebench and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Leebench

Setting
Landform: Fan remnants, strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Convex, linear
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile
E - 0 to 2 inches: sandy loam

Btn - 2 to 9 inches: clay loam
Btkn - 9 to 21 inches: clay loam
2Bkn1 - 21 to 36 inches: very gravelly loam
2Bkn2 - 36 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 1 to 2 inches to natric
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.07 to 0.21 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 13.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: Very low (about 0.2 inches)

Interpretive groups

Land capability classification (irrigated): 7s
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: C
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034BY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Minor Components

Shotnick

Percent of map unit: 5 percent
Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034BY115UT)
Hydric soil rating: No

Ohtog

Percent of map unit: 5 percent
Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Loamy Bottom (Basin Big Sagebrush) (R034BY009UT)
Hydric soil rating: No

Blackston

Percent of map unit: 5 percent
Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Desert Loam (Shadscale) (R034BY106UT)
Hydric soil rating: No

129—Leeko loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: jyx1
Elevation: 4,800 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Leeko and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Leeko

Setting

Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

E - 0 to 2 inches: loam
Btn - 2 to 7 inches: clay loam
Btkn - 7 to 16 inches: clay loam
Bk - 16 to 56 inches: clay loam
2Bky - 56 to 60 inches: very cobbly clay loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 40.0
Available water storage in profile: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Minor Components

Shotnick
Percent of map unit: 4 percent
Hydric soil rating: No

Blackston
Percent of map unit: 4 percent
Hydric soil rating: No

Nakoy
Percent of map unit: 4 percent
Hydric soil rating: No

Muff, gravelly sandy loam
Percent of map unit: 3 percent
Hydric soil rating: No

153—Motto-Muff-Rock outcrop complex, 2 to 25 percent slopes

Map Unit Setting
National map unit symbol: jyxx
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition
Motto and similar soils: 40 percent
Muff and similar soils: 35 percent
Rock outcrop: 10 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Motto

Setting
Landform: Hills, structural benches
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Slope alluvium over residuum derived from shale and sandstone

Typical profile

E - 0 to 2 inches: very flaggy loam
Btkn - 2 to 12 inches: clay loam
Bk - 12 to 14 inches: clay loam
2C - 14 to 17 inches: extremely channery clay loam
2R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 60.0
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)
Other vegetative classification: Desert Shallow Clay (Mat Saltbush) (034XY117UT_1)
Hydric soil rating: No

Description of Muff

Setting

Landform: Strath terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium over residuum derived from shale

Typical profile

A1 - 0 to 2 inches: gravelly sandy loam
A2 - 2 to 7 inches: sandy loam
Btn - 7 to 14 inches: sandy clay loam
C - 14 to 29 inches: clay loam
Cr - 29 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 40.0
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Ledges, cliffs, escarpments, erosion remnants
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

H1 - 0 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Cadrina, extremely channery loam

Percent of map unit: 3 percent
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)
Hydric soil rating: No

Badland

Percent of map unit: 3 percent
Hydric soil rating: No

Uffens, sandy loam

Percent of map unit: 3 percent
Ecological site: Alkali Flat (Greasewood) (R034XY006UT)
Other vegetative classification: Alkali Flat (Black Greasewood) (034XY006UT_1)

Hydric soil rating: No

Crustown

Percent of map unit: 2 percent
Hydric soil rating: No

Montwel, clay loam

Percent of map unit: 2 percent
Ecological site: Desert Shallow Loam (Shadscale) (R034XY121UT)
Hydric soil rating: No

Jenrid

Percent of map unit: 2 percent
Hydric soil rating: No

154—Motto-Rock outcrop complex, 2 to 25 percent slopes

Map Unit Setting

National map unit symbol: jyxy
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Motto and similar soils: 75 percent
Rock outcrop: 10 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Motto

Setting

Landform: Hills, structural benches
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Slope alluvium over residuum derived from shale and sandstone

Typical profile

E - 0 to 2 inches: very flaggy loam
Btkn - 2 to 12 inches: clay loam
Bk - 12 to 14 inches: clay loam
2C - 14 to 17 inches: extremely channery clay loam
2R - 17 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 60.0
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)
Other vegetative classification: Desert Shallow Clay (Mat Saltbush) (034XY117UT_1)
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Escarpments, erosion remnants, ledges, cliffs
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

H1 - 0 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Crustown

Percent of map unit: 3 percent
Hydric soil rating: No

Cadrina, extremely stony loam

Percent of map unit: 3 percent
Ecological site: Desert Shallow Loam (Black Sagebrush) (R034XY118UT)
Hydric soil rating: No

Cakehill

Percent of map unit: 3 percent
Hydric soil rating: No

Uffens, loam

Percent of map unit: 3 percent
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Badland

Percent of map unit: 3 percent
Hydric soil rating: No

160—Nakoy loamy fine sand, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: jyy5
Elevation: 4,700 to 5,300 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Nakoy and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nakoy

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Eolian deposits over alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

A - 0 to 14 inches: loamy fine sand
Bw - 14 to 25 inches: sandy loam
Bk - 25 to 72 inches: sandy loam
BCk - 72 to 80 inches: sandy loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Desert Sandy Loam (Indian Ricegrass) (R034XY115UT)
Hydric soil rating: No

Minor Components

Hiko springs

Percent of map unit: 8 percent
Hydric soil rating: No

Tipperary

Percent of map unit: 7 percent
Hydric soil rating: No

229—Tipperary loamy fine sand, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: jz0m
Elevation: 4,700 to 5,800 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Tipperary and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tipperary

Setting

Landform: Structural benches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from sandstone

Typical profile

A - 0 to 4 inches: loamy fine sand
C - 4 to 60 inches: loamy fine sand

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Desert Sand (Fourwing Saltbush) (R034XY112UT)
Other vegetative classification: Desert Sand (Fourwing Saltbush) (034XY112UT_1)
Hydric soil rating: No

Minor Components

Ohtog

Percent of map unit: 7 percent
Hydric soil rating: No

Utaline

Percent of map unit: 7 percent
Hydric soil rating: No

Nakoy

Percent of map unit: 1 percent

248—Uffens loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: jz19
Elevation: 4,700 to 5,600 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Uffens and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Uffens

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone, limestone, and shale

Typical profile

E - 0 to 1 inches: loam
Btn - 1 to 15 inches: clay loam
BCy1 - 15 to 27 inches: clay loam
BCy2 - 27 to 47 inches: loam
Btnyb - 47 to 65 inches: clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 50.0
Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Desert Alkali Bench (Castlevalley saltbush) (R034XY101UT)
Other vegetative classification: Desert Alkali Bench (Castlevalley Saltbush) (034XY101UT_2)
Hydric soil rating: No

Minor Components

Hanksville, silty clay loam

Percent of map unit: 8 percent
Ecological site: Desert Shallow Clay (Mat Saltbush) (R034XY117UT)
Other vegetative classification: Desert Shallow Clay (Mat Saltbush) (034XY117UT_1)
Hydric soil rating: No

Turzo, clay loam

Percent of map unit: 7 percent
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

255—Utaline very gravelly sandy loam, 8 to 25 percent slopes

Map Unit Setting

National map unit symbol: jz1k
Elevation: 4,700 to 5,700 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Utaline and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Utaline

Setting

Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Slope alluvium derived from sandstone, limestone, shale, and quartzite

Typical profile

A - 0 to 3 inches: very gravelly sandy loam
Bw - 3 to 7 inches: very gravelly loam
Bk - 7 to 60 inches: very gravelly loam

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Desert Loam (Shadscale) (R034XY106UT)
Hydric soil rating: No

Minor Components

Hiko springs

Percent of map unit: 5 percent
Hydric soil rating: No

Greybull, clay loam

Percent of map unit: 5 percent
Hydric soil rating: No

Nolava

Percent of map unit: 5 percent
Hydric soil rating: No

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